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CONTRACTIONS OF TITLES.

The following is a list of the contractions and the corresponding full titles of Journals from which abstracts are most frequently prepared for the "Pharmaceutical Journal." The titles prefixed by an asterisk (*) are those of official Journals.

Amer. Drugg. = American Druggist. New York. Semi-Monthly.

Amer. Journ. Pharm. = American Journal of Pharmacy. Philadelphia. Monthly.

Annalen = Justus Liebig's Annalen der Chemie. Leipzig. Monthly.

Annales de Chim. Analyt. = Annales de Chemie Analytique. Paris. Monthly.

* *Apot. Zeit.* = Apotheker-Zeitung. Organ of the Deutsche Apotheker-Verein. Berlin. Twice a week.

* *Apot. Zeit. Rep.* = Repertorium der Pharmazie. Supplement to the Apotheker-Zeitung.

* *Archiv* = Archiv der Pharmacie. Berlin: J. Greiss. Monthly.

* *Berichte* = Berichte der deutschen chemischen Gesellschaft. Berlin. Once or twice a month.

Berichte Pharm. = Berichte der deutschen pharmaceutischen Gesellschaft. Berlin. Monthly.

* *Brit. Med. Journ.* = British Medical Journal, London. Weekly.

Bull. Com. = Bulletin Commercial. Supplement to L'union Pharmaceutique. Paris: Pharmacie Centrale de France. Monthly.

Bull. gén. de Therapeut. = Bulletin général de Therapeutique. Paris. Weekly.

* *Can. Pharm. Journ.* = Canadian Pharmaceutical Journal. Toronto. Monthly.

Cape Agricul. Journ. = Agricultural Journal, Cape of Good Hope, Cape Town. Monthly.

Chem. Central - Blatt = Chemisches Central - Blatt. Berlin. Weekly.

Chem. News. = Chemical News. London. Weekly.

Chem. Zeit. = Chemiker Zeitung. Cöthen. Twice a week.

Chem. Zeit. Rep. = Chemisches Repertorium. Supplement to the Chemiker Zeitung.

* *Comp. rend.* = Comptes rendus des séances de l'Académie des Sciences. Paris: Gauthier-Villars. Weekly.

Deuts. Am. Apot. Zeit. = Deutsch Americanische Apotheker Zeitung. New York.

Gard. Chron. = Gardener's Chronicle. London. Weekly.

Journ. Amer. Chem. Soc. = Journal of the American Chemical Society. Easton, Pa. Monthly.

* *Journ. Chem. Ind.* = Journal of the Society of Chemical Industry. Monthly.

Journ. de Pharm. d'Anvers = Journal de Pharmacie, Organe de la Société de Pharmacie d'Anvers. Anvers. Monthly.

* *Journ. Pharm. Chim.* = Journal de Pharmacie et de Chimie, Paris: G. Masson. Twice a month.

Journ. Zahnheil. = Journal für Zahnheilkunde. Berlin.

Med. Press = Medical Press and Circular. London: A. A. Tindall. Weekly.

Mod. Med. = Modern Medicine and Bacteriological Review. Battle Creek, Mich., U.S.A. Monthly.

Mon. Scient. = Moniteur Scientifique. Paris. Monthly.

Münch. med. Woch. = Münchener medicinische Wochenschrift. Munich. Weekly.

Nat. Drugg. = National Druggist, New York. Monthly.

Nouv. Rem. = Les nouveaux Remèdes. Paris. Twice a month.

Oesterr. Zeits. für Pharm. = Zeitschrift des allgem. oesterreich. Apotheker-Vereines. Wien. Weekly.

Pediat. = Pediatrics. London and New York. Twice a month.

Pharm. Centralh. = Pharmaceutische Centralhalle. Dresden. Weekly.

Pharm. Post = Pharmaceutische Post. Vienna. Weekly.

Pharm. Woch. = Pharmaceutische Wochenschrift. Berlin. Weekly.

Pharm. Zeit. = Pharmaceutische Zeitung. Berlin: J. Springer. Twice a week.

* *Proc. Chem. Soc.* = Proceedings of the Chemical Society. London. About twice a month.

Répertoire = Répertoire de Pharmacie, Archives de Pharmacie et Journal de Chimie médicale réunis. Paris. Monthly.

Rev. Med. Pharm. = Revue medico - pharmaceutique. Paris. Monthly.

Scient. Amer. = Scientific American. New York. Weekly.

Schweiz. Woch. = Schweizerische Wochenschrift für Chemie und Pharmacie. Zurich. Weekly.

Therap. Monats. = Therapeutische Monatshefte. Berlin.

Union Pharm. = L'union Pharmaceutique. Paris: Pharmacie centrale de France. Monthly.

Wien. klin. Rund. = Wiener klinische Rundschau. Vienna: A. Hölder.

Zahn. Rund. = Zahnaertliche Rundschau. Berlin.

Zahntech. Reform = Die Zahntechnische Reform. Berlin: R. F. Funcke.

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CHANGES OF ADDRESS.

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The Pharmaceutical Journal Office.

Thursday, July 2, 1903.

This is the First Number of a New Volume, and advantage is taken of the opportunity thus afforded, to effect several changes in the arrangement of the Journal.

The New President of the Pharmaceutical Society made his first public appearance in that capacity on Friday of last week. The occasion was the distribution of prizes to students of the Society's School, which took place on "breaking-up day," instead of, as heretofore, at the inaugural meeting in October. The Dean of the School read the report on the work of the Session and, the prizes having been handed to the successful candidates, Mr. F. Harwood Lescher delivered a short address in which he recalled the early days of the School and welcomed the new President. Mr. Carteighe spoke in his usual genial style.

The Pharmaceutical Society and its affairs receive a large share of attention in this week's issue of the Journal, the proceedings at Wednesday's meeting of the Council being reported at length, while a report of a meeting of the North British Branch also appears in our columns, together with the latest Major Examination questions. The Council meeting was the first one held since the new procedure came into full operation, and much important business was transacted as expeditiously as circumstances would allow. The Chairman of the Finance Committee was able to report that there is an exceptionally large balance in hand, and authority was given to place a certain amount of the Society's money on deposit. Mr. W. L. Currie, of Glasgow, was co-opted on the Council in place of Mr. Arthur Savory, and Mr. Walter Hills was appointed one of the Society's representatives on the Pharmacopœia Conference.

The Board of Inland Revenue's change in practice was the chief subject of deliberation at Wednesday's meeting of the Council. Mr. Carteighe advised chemists and druggists not to allow themselves to get into a "blue funk" with regard thereto. The same topic has been considered at meetings of the N.B. Branch Executive and of various local associations. At Edinburgh a resolution bearing on the question was carried after some discussion. Several correspondents express their views on the matter.

The Event of the Week which has created the greatest interest in scientific circles is an important proposal contained in a letter which Lord Rosebery has addressed to the Chairman of the London County Council. An offer has been made by Messrs. Wernher, Beit and Co., and others, to provide a large sum of money for the building and equipment of an institution in which instruction may be given in applied science, scientific technology, and research. Lord Rosebery asks the London County Council to be responsible for the maintenance from year to year of the educational work of the proposed institution.

The Methylated Soap Liniment case, which has occupied the attention of the readers of this Journal for so long a time, was decided at the Clerkenwell Police Court on Tuesday of this week. Mr. D'Eyncourt decided that where a pharmacopœial preparation is used purely as a medicine, there is no commercial standard differing from that of the Pharmacopœia. The magistrate imposed on Boots, Cash Chemists, Limited, a fine of £5, with costs amounting to 65 guineas.

Other Legal Cases of the week include another prosecution of a London chemist under the Medicine Stamp Duty Acts, and a "Pil. Ferri" case at the South-Western Police Court under the Sale of Food and Drugs Acts. In each of these cases a fine was inflicted.

The Views of an Eminent Physician on a question of vital importance to pharmacists are recorded in this issue. He is of opinion that each man should keep on his own side of the garden wall, medical men prescribing and pharmacists dispensing. The Editor has the practitioner's permission to disclose his name could any useful purpose be served thereby.

The Supply of Drugs to Workhouses, in connection particularly with suggestions of the Local Government Board on the subject, has been under the consideration of numerous Boards of Guardians. Several are opposed to any change in the system already existing.

The Markets in drugs and chemicals have been very dull this week and there is little to report. The only important change is a rise in Santonin.

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The Views of Chemists and Druggists are wanted on the medicine stamp difficulty, which was the chief subject of discussion at Wednesday's meeting of the Council of the Pharmaceutical Society, much time being devoted to consideration of the change in practice announced by the Board of Inland Revenue, as the result of the recent decisions in the cases of Ransom *v.* Sanguinetti and Farmer *v.* Glyn-Jones. Mr. Wootton and Dr. Symes had both given notices of motion on the subject, and the former duly proposed that the Board of Inland Revenue be asked to receive a deputation from the Council on the subject of the designation of medicines. Dr. Symes seconded the motion, in preference to proceeding with that of which he had given notice, and the Council then went into committee to deal with the matter. On resuming, Mr.

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Glyn-Jones proposed, as an amendment, that the General Purposes Committee be requested to consider the advisability, or otherwise, of asking the Board of Inland Revenue to receive a deputation from the Council on the subject of the designation of medicines, and that the Committee be authorised to take such steps as may seem necessary and desirable. Mr. W. Gowen Cross seconded the amendment, and, after some discussion, the course therein proposed was agreed to. In order that no time may be lost, a special meeting of the General Purposes Committee is to be summoned for Thursday, July 16. Meanwhile, members of the Society and other chemists and druggists are requested to favour the Council with their views on the subject. As will be seen, many letters, in which different opinions are expressed regarding the Board's change in practice, appear in this week's Journal. Other chemists who may feel disposed to commit their views to paper should do so without further loss of time and promptly forward their letters to headquarters.

SCIENCE APPLIED TO INDUSTRY.

It is proverbially dangerous to prophesy, particularly in writing, but it would really seem that one of the most conspicuous features of the first decade of the twentieth century in this country is to be a revolution in the advanced educational system of the country. Several causes have contributed to this development. One of the most important lies in the fact that the millionaires have begun to realise their responsibilities. The industrial potentialities of Great Britain and her Colonies have made her profitable for millionaires. The millionaires, it is gratifying to know, are determined to be profitable to their country. Cecil Rhodes, Andrew Carnegie, Passmore Edwards, each has done his share according to his lights to make a liberal education possible for one or other class of his Majesty's subjects. But with all the splendid traditions of the remote past, in spite of the provision of an educational ladder which has enabled Board School boys to become Senior Wranglers two years in succession, notwithstanding the great development of provincial universities, and the undoubted improvements effected in the University of London, there has remained one much-felt want. The "need for special training of an advanced kind in connection with the application of science (especially chemistry and electricity) to industry" found forcible expression in the report of a Sub-Committee of the Technical Education Board, presented to the London County Council nearly a year ago, and summarised in the *Pharmaceutical Journal* at the time (**69**, 49).

There is every prospect that the void will now be filled. Lord Rosebery and the firm of Wernher, Beit, and Co., have come forward with a proposal of the greatest potential value. The first Chairman of the London County Council has written to Lord Monkswell, now Chairman of that body, saying that there is good reason to hope that the initial difficulties which have hindered the provision of a London "Charlottenburg" may now be overcome. Messrs. Wernher, Beit and Co. have offered to place a large sum of money in the hands of trustees, and it may be regarded as certain that the cost both of a site and of building and equipment will be entirely defrayed by private liberality. Lord Rosebery asks the London County Council to be responsible for the annual sum of £20,000 for the maintenance of the institution, which it is proposed to erect at South Kensington, in close proximity to the University, the Museums and Colleges which occupy the site of the Great Exhibition of 1851. The details of the organisation of the proposed institute have not yet been settled, and they will be considered in consultation with the Senate of the University and other bodies concerned. It is proposed that the institution, whilst working in close co-operation with the Royal College of Science, the Central Technical College, and other branches of the University should be organised as a distinct "school" of the University under the management of its own committee. It would direct its attention from the first, not to duplicating or overlapping any provision now existing in London, but to supplementing that provision by taking up subjects as yet undealt with, or only inadequately dealt with. Such subjects would probably include chemical technology, mining and metallurgy, electro-chemistry, electric traction, optical technology, bacteriology, railway and marine engineering, hydraulics, and naval architecture. It is intended to admit only advanced students able to profit by the instruction and facilities for original research which will be provided, but the institution will be made accessible by low fees and scholarships, by means of which many of the ablest of those whom the London County Council is now training in the polytechnics and elsewhere may be enabled to raise themselves to the highest positions in the world of scientific industry. At the request of the first donors Lord Rosebery has agreed to act as chairman of a body of trustees to carry out the scheme to completion. Among these trustees will be the Duke of Devonshire, Mr. Arthur Balfour, Sir Francis Mowatt, Mr. Julius Wernher, Mr. R. B. Haldane, and the Vice-Chancellor and the Principal of the University of London, together with, if they will consent to act, representatives of the London County Council, as the technical education authority for London.

The *St. James's Gazette* understands, from special information, that the scheme for the Science "School" will be included in a vast general scheme, which will embrace also the Bessemer Memorial Institutions in various provincial towns and the co-ordination of Empire University teaching. The conference in connection with the latter will shortly take place, when representatives of most of the great Colonial Universities will be present. Nearly a million sterling will be required for the whole plan, with which pharmacy proper is not very closely concerned. It is probably the fact that as far as the manufacture of aniline dyes and coal-tar products is concerned the proposal comes forty years too late. The restrictions of the patent laws, the apathy and ignorance of many manufacturers, and the absence of educational facilities such as are now proposed have resulted in an enormous loss to the country. What proportion of the trade in synthetic medicinal agents, perfumes, sweetening materials, nutritives, photographic developers, antitoxins, and optical glass can be obtained, recovered, or retained it is impossible to foretell. The eminently practical suggestions of Lord Rosebery will, however, be enthusiastically welcomed by British pharmacists, who have too often experienced the disagreeable necessity of handling foreign manufactured products which might, and should, have been made in this country if the necessity for advanced instruction in applied science and technology had received recognition.

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LORD DESART ON THE PHARMACY ACT.

The Blue Book just issued by Lord Desart, Director of Criminal Prosecutions, on the cases undertaken by him under the Prosecution of Offences Acts in the year 1902, contains a paragraph which shows that not all the higher servants of the State are in favour of a repeal of the Pharmacy Act. The Klosowski or "Chapman" case "threw considerable light on the wonderful preservative qualities of certain mineral poisons, such as antimony, which was used by the prisoner to rid himself of his victims, and incidentally illustrated the value, from a legal aspect, of the Sale of Poisons Act." Lord Desart proceeds to recall the circumstances attending the purchase of the tartar emetic from Mr. Davidson, the signing of the Poisons Register according to the "Poisons Act," and the important evidence volunteered by Mr. Davidson. It may be surmised that the Director of Criminal Prosecutions would not regard with favour any proposal to allow tartar emetic to be sold by unqualified persons like those who have been proved in the Courts of Justice to have neglected all the essential safeguards of the Pharmacy Act when selling a strong preparation of arsenic. During the year, 454 cases were undertaken by the Director of Criminal Prosecutions, convictions being obtained in the great majority of cases. Seven hundred and thirty-four other applications were made, which were otherwise dealt with. The suggestion has occasionally been mooted that it might be advisable for this or some other Government department to take proceedings under Section 17 of the Pharmacy Act of 1868, but a perusal of the Blue Book under notice will make it clear that this is a contingency that cannot in reason be expected, the claims on the energies of the director of prosecutions being already so heavy.

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CHANGES IN THE JOURNAL.

Members of the Pharmaceutical Society and other regular readers will doubtless be struck with the changed aspect of the Journal this week. The various reasons for the changes need not be enumerated, but it may be stated that it is intended in future to endeavour to supply all the information chemists and druggists require in a weekly newspaper, without in any degree devoting less attention than heretofore to such matters as are of importance to the scientific pharmacist. The co-operation of readers is cordially invited, and the Editor will, at all times, be pleased to receive, for publication if found suitable, papers on any of the practical problems interesting pharmacists. He will also be glad to receive copies of prescriptions which are peculiar or exhibit incompatibilities; suggestions, formulæ, or queries; notes upon pharmaceutical and dispensing processes; memoranda of singular occurrences and unusual events; reports upon new drugs, chemicals, and preparations; items of news of interest to chemists and druggists; and letters on current topics. If publication be desired the same week, the communications should, if possible, arrive not later than Wednesday morning, but anything of particular importance can usually be inserted if received on Thursday morning, especially if arrangements be made previously, and an intimation given of the space required.

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UNIVERSITIES AND SCIENTIFIC EDUCATION.

A correspondent, who is exceptionally well qualified by experience to speak on this subject, writes that he agrees generally with Sir Richard Jebb's contention that the Faculties of Arts and Science in modern Universities should both be strong. "But," he continues, "to endeavour in the Universities of the North to make both equally strong would be futile. There is in many Universities an atmosphere too academic. The proper application of Science to Industry—*i.e.*, Commerce—is to my mind one of the problems of the future." This letter, it may be mentioned, was written before the publication in the morning papers of Lord Rosebery's now famous letter. A correspondent from the North writes to say that, as regards Sheffield and Leeds Universities, Sheffield and district have merely decided in favour, to some extent, of a *status quo ante*, *i.e.*, a Yorkshire University.

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SCIENCE AND HOSPITALITY.

The visit to London during the present week of Professor Edward Hart, of Lafayette College, Easton, Pa., who is deputed to invite the Society of Chemical Industry to hold its annual meeting in America next year, has afforded an opportunity for several distinguished members of that body to show how lavishly the devotees of applied science can entertain guests whom they are delighted to honour. Professor Hart is the special delegate of the New York Section, and, accompanied by his son, he was entertained at dinner—at Prince's Restaurant, Piccadilly—on Wednesday evening. The chair was taken on the occasion by Dr. Jos. W. Swan, F.R.S. (a past-President of the Society of Chemical Industry), and the vice-chair by Mr. Walter F. Reid (Chairman of the London Section). Supporting those gentlemen were Mr. Thomas Tyrer (another past-President of the Society), Mr. Chas. G. Cresswell (the General Secretary), Mr. A. R. Ling (Secretary of the London Section), Mr. B. E. R. Newland, Dr. Kellner, Dr. Edward Divers, Dr. Lewkowitsch, Dr. Thorne, Dr. Power, Professor Hodgkinson, Mr. Watson Smith, Mr. Grant Hooper, Mr. Henry Hemingway, Mr. Samuel Hall, and the Editors of the three British journals of pharmacy. The dinner—for the arrangement of which, at less than forty-eight hours' notice, much credit is due to Mr. Cresswell—was excellent, the speeches few in number and admirably delivered, while the manner in which Professor Hart explained how the New York Section is preparing to entertain the parent Society during a period of three weeks was calculated to attract many British chemists to the United States next summer.

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PHARMACY IN RUSSIA.

The attention of readers of the Journal is directed to an article on "Pharmacy in Russia," which appears in our present issue. The writer is a Russian pharmacist, bearing a distinguished name, and the article appears practically as written by himself, in the English language. A supplementary article from his pen, on the same subject, will be published shortly.

A DISPENSING DIFFICULTY.

The *P.J.* Consults a Physician.

The fashionable sick had not begun to arrive. And, except for here and there the carriage of a physician called out to an urgent case, Harley Street was nearly deserted. Tradesmen's boys were making their morning rounds, and a solitary policeman sought such protection from the blazing sun as a lamp-post afforded. It was at such a time of day that a *P.J.* man called one morning this week at a certain house in the street sacred to Æsculapius. It was about an ethical derangement he went to consult the doctor, and to learn the opinion of an eminent Fellow of the Royal College of Physicians on a matter of vital importance to chemists.

It is not a new question. In fact, it has been to the fore ever since the time of the partial separation of pharmacy from the practice of medicine; this was one stage of the evolution. Nearly three centuries have rolled by since then, and the separation is still only partial. In Continental countries things have passed more rapidly,

The Dividing Line

is distinctly defined, and doctors do no dispensing, and chemists do not prescribe. That such an arrangement should exist here is the wish of many members of both callings. That the first steps should be taken by the medical profession would seem not at all surprising. For was it not they who took the initiative at the period when doctors ceased to act as druggists, finding dispensing "too servile and laborious a business"? It came to our knowledge that there was "something in the air," and that there was a feeling among an important section of the medical community that the time for complete separation was at hand, and hence our visit.

The bell was promptly answered, and our representative was at once ushered into the presence of a medical gentleman who for many years past has given much thought to this question. Time to the inhabitants of Harley Street is precious. Accordingly, having introduced himself, the *P.J.* man at once stated the object of his visit.

"We understand," explained our representative, "that you have views on the question of dispensing by doctors."

"Yes, that is so," answered the consultant, as he courteously proffered a chair. "I am very deeply interested in the matter. As far back as 1869, when I was practising in a south coast watering place, I endeavoured successfully to persuade my fellow practitioners there of the desirability of ceasing to dispense their own medicines."

"You found, of course, some little difficulty?"

"At first the suggestion met with opposition, but within three years not a single doctor in the town supplied medicine to his patients.

The Crux of the Matter,"

he continued, "lies here. If doctors give up dispensing, chemists ought to give up prescribing. That is where the great difficulty lies; it would be unreasonable for chemists to expect a one-sided arrangement. Not that I advocate this policy simply as a business compromise. I consider it as unworthy of a medical man to dispense as it is improper for a chemist to prescribe. That is my opinion."

"Did the chemists in this town give any undertaking as regards prescribing?"

"Not as far as I recollect. I don't think they did. I remember the medical men received a deputation from the chemists, and an understanding was arrived at in reference to prices."

Questioned as to how he would define prescribing, and whether he would object to a chemist supplying a cough mixture or a bottle of medicine for the diarrhœa made up according to an approved formula, the doctor replied: "Most decidedly. How does the chemist know the cause of the diarrhœa? And, if he did, would he know how to treat it? He might have half a dozen customers for diarrhœa mixture in one morning, and yet they might all require totally different treatment. And, again, it might well be that the patient would do better without medicine. A chemist ought not to pretend to be a doctor, nor to treat diseases of which he is absolutely ignorant."

"And there are specific reasons why you consider doctors

Should not Dispense?"

"I do not think it is right for a man to prescribe, and then to make up and sell what he has prescribed. One cannot help but see the great temptation that such a system entails, and the danger of almost unconsciously giving way to it is so great."

"Do you mean," suggested our representative, "that the fact of a doctor supplying the medicine might give him the opportunity of so arranging the quantities and doses that the patient would visit him more frequently?"

"Well, I hardly think there are members of my profession who would succumb to such a temptation, but I do not think the temptation ought to be there. There is the danger, as I said, of almost unconsciously doing it and then of getting into a custom which would be very dishonourable, and yet not appear so to one warped by practice."

"Have you any hope that the arrangement you instigated will ever become general?"

"Yes, I am very hopeful; in fact, I feel sure the dividing line is bound to be definitely fixed. At present the position is illogical, and not in keeping with the advance of the times. I have tried to influence medical men in London, and have talked the matter over with numbers of them, and I believe there is a feeling that such a plan is not only desirable, but feasible. At first it is difficult to make doctors believe that it will do anything besides diminish their incomes. But that is not the case, and I am told that in districts where medical dispensing has been abolished it has seldom been established again. At this seaside town thirty years ago I used the arguments that in Denmark, Germany, and France, among other countries, it was not only practicable, but

The Plan Worked Well

And if in those countries doctors can do without dispensing, and chemists without prescribing, surely we can do it. What has been the effect of such an arrangement on the Continent? It has improved the positions of both doctors and druggists, and the public are certainly quite as well protected. Of course, what influenced the Legislature in foreign countries was the possibility of the doctor misusing, carelessly or otherwise, the unchecked power which is afforded to a medical man who supplies his patient with drugs of his own prescribing. One thing must be guarded against, it is undesirable that patients should have their prescriptions prepared an unnecessary number of times; and there, again, in France they are before us. You may know, perhaps, that a prescription containing poison is only dispensed once unless the doctor specifies otherwise."

"Do you think that if doctors gave up dispensing it would be necessary for chemists to give a definite undertaking not to prescribe? Would not the moral influence of such an action be sufficient?"

"Don't talk about moral influence," answered the consultant, somewhat amused at the bland suggestion. "An Act must be passed, making it penal for any doctor to dispense and for any pharmacist to prescribe. Certain reservations should be made. Again as in France, I would submit that an exception be made in the cases of sparsely populated districts where there was no druggist. But these details could be considered later."

"But what about the poor, the very poor? Would it not be hard on them to have to pay two fees?"

"You must remember that the poor are very well looked after in this country, and there is no doubt there would be no more difficulty here than in other countries where the system is in vogue. In places where this plan has been adopted the chemists, I believe, make as little profit as possible in such cases."

After a pause, to answer a call to the telephone, the physician continued: "I do not want you to go away with the idea that I think trade is low; on the contrary, trade is the backbone of the country, and, therefore, commerce must always stand in the highest esteem. But I am convinced that the combination of commercial dealings with the practice of medicine can only be detrimental to the latter, and to the best interest of the public."

The doctor was not prepared to forecast the result of a poll of the medical practitioners, but was of opinion that an inquiry ought to be instituted, and the question once for all thoroughly threshed out.

"And how would all this affect the position of patent——?"

But before the question could be finished *t-r-rrill* went the bell, announcing the arrival of a patient, and our representative, conscious of having already taken up too much of a busy man's time, took his leave.

And outside in Harley Street the carriages were coming and going; the patients carried their prescriptions in their hands, for these doctors do not dispense; and for the most part they were taking them to chemists who do not prescribe. Is it a coincidence that in the highest branches of both callings "each man keeps to his ain side o' the hoose"?

NOTES ON ECONOMIC BOTANY.

Aerocomia Totai.

The kernels of the fruits of this palm are largely used in Paraguay as a source of a fixed oil employed in the manufacture of soap. Last year as much as 300 tons of them were exported. The soap is said to be very white, and to give an abundant lather, the oil being added to soaps that do not do so sufficiently. The oil costs at present as much as castor oil, but it is believed that new machines for crushing the fruits, which have been tried recently, will considerably lower the price.—*Journ. d'Agric. Trop.*, **23**, 156.

Cyperus Rotundus.

Under the name of "Nutgrass" this plant is regarded in the West Indies as the greatest nuisance to planters, and as difficult of eradication as the chickweed and bindweed in English gardens. This species, as well as *C. longus*, were much used formerly for giving a permanence to perfumes, and together with other allied species, it is used in various sub-tropical countries as a stimulant diaphoretic for the relief of internal intestinal troubles affecting the mucous membrone. It is surprising that a waste product of this kind has not been chemically investigated, and the source of its perfume and of its medicinal, and possibly antiseptic, properties ascertained. The known property of adrue (*Cyperus articulatus*) of allaying vomiting in yellow fever indicates that there may be medicinal properties in the plants of the Cyperaceæ worth investigation and this might be done by the local chemist to the Agricultural Department of the West Indies.

PHARMACY IN RUSSIA (I).

BY A RUSSIAN PHARMACIST.

Different Grades in Russian Pharmacy—Provisors and Magisters—Examinations—Privileged Pharmacies—Official Prices for Medicines—Difficulties and Hardships—Drug-Store Competition—Semstvo Pharmacies.

Different Grades in Russian Pharmacy.

At present there exist in Russia four different grades of pharmacists, who are allowed to practise in privileged pharmacies; these are (1) apprentice, (2) assistant, (3) provisor, (4) magister of pharmacy. Only provisors and magisters of pharmacy are allowed to keep a pharmacy or to manage the same. Persons desirous of becoming pharmacists enter a pharmacy, after finishing four classes of a gymnasium and passing successfully the examination to the fifth class. The proprietor or manager of the pharmacy presents the school certificate to the medical department of the city, and the young man is registered in the same. From this time in the above department a *curriculum vitæ* is kept for him, in which every change, as, for instance, entering another pharmacy, marriage, etc., is noted. During the three years of being apprentice, the young man learns gradually the retail business, making up prescriptions, and at last he is generally sent to the laboratory. During the last year an apprentice visits in larger towns a special school, where he is prepared without fee for the examination of assistant, which he is entitled to pass only if his three years' practice as apprentice is complete. In the provinces everybody prepares by himself for the examination, or is prepared by a private teacher. Examination for all grades of qualified pharmacist are held at the Imperial Universities four times a year. The diploma of assistant does not give to the owner any rights for independent activity, and an assistant is always under control of a provisor, with very few exceptions, as, for instance, if over twenty-five years of age, he can temporarily replace a provisor.

Provisors and Magisters.

In order to become a provisor the assistant is obliged to practise again three full years in a pharmacy, being all the time registered at the medical department, after which time he must enter the university and attend lectures with medical students for nearly two years. He becomes provisor after passing successfully examinations in:—(1) Mineralogy, (2) zoology, (3) organic chemistry, (4) inorganic chemistry, (5) physics, (6) judicial chemistry, (7) botany, (8) materia medica, (9) pharmacy, (10) pharmacology, (11) chemical analysis, (12) the preparation of some chemical or pharmaceutical compounds. The title of provisor gives him the right of keeping a pharmacy himself or of managing one.

Examinations.

The grade of magister of pharmacy is not compulsory, but it gives many privileges in employment of the Government, gives one a chance of getting better situations in factories; also in the distribution of privileges for a pharmacy these are preferred to the provisors. But in the general pharmaceutical practice one can easily do with the grade of provisor. The examination for magister of pharmacy being very expensive, and requiring much time, only very few people can afford to pass it. To become magister of pharmacy it is necessary to pass again the same examinations as for the provisor, but in a more strict way, and then make a scientific investigation on a botanical, chemical, etc., subject, which is to be defended against the opposers chosen from the corresponding professors, who must try to find out weak points of the candidate's work. This debate is held in public. All the work from provisor to magister requires at least two years, and generally more than that.

Privileged Pharmacies.

The number of privileged pharmacies in every place in Russia is a limited one, and depends on the number of inhabitants. Every pharmacy is restricted to a certain district, whose limits it is not allowed to pass. The right of opening a pharmacy is given by the Imperial privilege, which is obtainable from the Medical Department of the Ministry of Interior in St. Petersburg. This privilege is very difficult to procure, because there are only very few new ones given, but the number of aspirants is large, especially for the more important towns. Besides the age and experience of the claimant, his scientific grade and the date of his petition are taken into consideration, and one is often waiting about twenty years before one gets a privilege. In getting references about any pharmacist the *curriculum vitæ* renders an immense service. Proprietors of pharmacies and persons who have had already a privilege have no right for a new privilege. A new vacancy for a pharmacy in a town is considered as existing when the population has increased by a certain amount and prescriptions made up already by the existing pharmacies exceed a certain average. Generally, people desirous to establish themselves buy the business from another, which in recent times is very easy to do, owing to the hard conditions of this business.

Official Prices for Medicines.

Privileged pharmacies are not allowed to advertise anything; they have an official tax for prescriptions, they are generally at a considerable distance from each other, and so the conditions of each as regards competition seem to be very favourable; besides, no pharmacist is allowed to have more than one pharmacy in the same town. Even if somebody dispenses below the official prices, which is permissible, he is not allowed to call the attention of the public to it in any way. Nobody except a qualified pharmacist, and only through a privileged pharmacy, is allowed to make up and dispense prescriptions, to sell divided powders, cut herbs and roots, and all sorts of prepared drugs. The official tax seems to be very high, but, nevertheless, it is nowadays for many pharmacists very hard to exist, owing to bad situation, unproportioned expenses for keeping business, and plenty of unfair competition. The law adjusts very well the relations between doctors and pharmacists, the first not being allowed to supply the patients with medicines, and on the second being put many restrictions regarding the dispensing of poisons. Thus the patient desirous to have a stronger medicine is obliged to go to see the doctor. For poor people, of course, there exist many gratis ambulances, as, for instance, the Government, town, and benefactory hospitals.

Difficulties and Hardships.

In spite of all advantages, the situation of the privileged pharmacist becomes more and more difficult. First of all, not a long time ago, nearly in all pharmacies of the greater towns has been introduced a new distribution of time; in most of them every pharmacist is working three days and every fourth he is entirely free; in many of them two days, with every third and even every other day free. This circumstance being brought up by great discontentments of the pharmacists all over the largest towns has forced the proprietors to increase their staff. In the same time nearly the tax was partly reduced, and partly reformed to the disadvantage of the proprietors. In the capitals the value of leases for shops is increasing, and the chemist being bound to a certain district is often unable to find another suitable house and obliged to pay very high rent. There exist old established pharmacies on premises belonging to the proprietor, and these have not to suffer from this difficulty. These are still subject to competition and several time questions, but altogether they can exist very well. They work almost with their own capital, and the father is generally succeeded by the son. A few others have the further disadvantage of not owning the premises, but the majority of the proprietors of pharmacies are established with other's money and have to pay high interest (6 to 12 per cent.). The existence of the latter is a very hard one, and recently such pharmacies often change the proprietorship.

Drug-Store Competition.

An unfair competition is offered by the drug stores, generally kept also by qualified pharmacists. The number of the drug stores is not limited, and the permission of opening one is easily obtainable from the local governor or Medical Department. There are often many of them in one street, and frequently near a privileged pharmacy. Some of them are allowed to sell poisons according to certain rules, but only pure and undivided. As even a qualified pharmacist is not allowed to dispense prescriptions but from a privileged pharmacy, the drug stores are as well not allowed to do it. They have no permission even to sell divided powders, cut or mixed herbs, or any kind of worked drugs, or to make any mixture. Owing to insufficient control over the drug stores, they are practising everything like a privileged pharmacy, and often they take more liberty than the latter, because they do not run so great a risk as a pharmacy. For instance, if anybody is unable to get a poisonous prescription repeated at a pharmacy, he may be sure to get it at a drug store, and often with tne old copy-label of the pharmacy! Sometimes they are prosecuted, but, as it is generally difficult to find any evidence against them, without result. By the public they are known as "cheap pharmacy."

Semstvo Pharmacies.

Sometimes privileges offered for a provincial town are not willingly taken, because it is quite possible that one may have to meet a serious, though legal, competition, and a business going splendidly may thus be damaged and even destroyed in a short time. Often a pharmacist is the only privileged in a town, and has no competition at all; but there exists all over Russia an institution called "Semstvo," which is maintained by the taxes paid by the peasants and nobility of a certain country district. This has to take care of the sanitary condition of the peasants by keeping doctors and pharmacies, to provide education by supporting schools, and to keep the ways of communication in order. There exist two kinds of semstvo pharmacies, both impossible to compete with for a private pharmacy. The first is the pharmacy with the right of selling prescriptions, perfumery, etc., and is managed by a provisor; the second kind a pharmacy of a semstvo hospital. This latter is managed by an assistant, and has only to supply the hospital and its ambulance with medicines. What makes it impossible to meet this competition is that everybody paying taxes to the semstvo is entitled to get the advice of a semstvo doctor without fee, and to get every prescription of the latter for 5 copecks = 1¼d. All other citizens of the same place get everything for half price compared with the official pharmacy tax. The semstvo system not being fully developed, it may happen to any provincial pharmacist that in his neighbourhood will be opened a semstvo pharmacy, making his existence impossible. For several diseases the semstvo is obliged to dispense gratis, but where a private pharmacy exists the law provides certain restrictions on the gratis dispensing, though these are not enough to secure to the pharmacist his income.

ABSTRACTS—SCIENTIFIC AND TECHNICAL.

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES.

Chemistry of the Rusting of Iron.

W. R. Dunstan publishes a summary of the present results of an unfinished inquiry into the reactions involved in the rusting of iron. Whilst both liquid water and oxygen are necessary for the formation of rust, the presence of carbonic acid is not essential, although it may accelerate the action. The well-known effect of alkalis and alkaline salts in preventing the oxidation of iron has been hitherto attributed to the withdrawal of the carbonic acid. It has been found, however, that the phenomenon is not due to this cause, but to the establishment of conditions in which the production of hydrogen peroxide is inhibited. When highly purified iron, containing mere traces of impurity, is left in contact with dry gases (oxygen, carbon dioxide, mixtures of oxygen and carbon dioxide), rusting does not take place. In the presence of the same gases and water vapour, no rusting occurs so long as a constant temperature (34° in the actual experiments) is maintained, but if the temperature is allowed to fluctuate, liquid water condenses on the surface of the iron and rust is produced. It is thus shown that pure iron is not oxidised in presence of gases and water-vapour only, but that the presence of liquid water is necessary for rusting to take place. In another series of experiments, pieces of iron were left in contact with water saturated with a particular gas and with an atmosphere of the same gas above the solution. When hydrogen, carbon dioxide, or nitrogen which had been carefully freed from oxygen was employed, rusting did not occur, but if oxygen or a mixture of oxygen and carbon dioxide was used, oxidation took place. From these results, it is evident that for the formation of rust both oxygen and liquid water are required. In the experiments in which a mixture of oxygen and carbon dioxide was used, the results observed indicated that in this case a secondary action proceeds simultaneously. —*Proc. Chem. Soc.*, **19**, 150.

Influence of Salts on the Production of Rust.

Small pieces of highly purified sheet iron were enclosed with the different solutions in sealed glass tubes, the space above the solution in each case being filled with pure oxygen. The following substances were found to prevent to a greater or less extent the formation of rust: sodium carbonate, ammonium carbonate, borax, disodium hydrogen phosphate, calcium hydroxide, ammonia, potassium dichromate, potassium ferrocyanide, chromic acid, sodium nitrite, and potassium carbonate. Rusting occurred in the presence of the following compounds: sodium chloride, potassium chlorate, ferrous sulphate, potassium ferricyanide, potassium nitrate, and sodium sulphate. The reagents which prevent the rusting of iron are those in presence of which decomposition of hydrogen peroxide takes place and which are consequently inimical to its formation. There can be little doubt, therefore, that hydrogen peroxide plays an important part in the chemical process of rusting. By the direct action of hydrogen peroxide on metallic iron, a red basic ferric hydroxide, identical with ordinary rust, is rapidly produced, and it is found that in general those metals rust in air which are oxidised by hydrogen peroxide, whilst those metals which are not oxidised by hydrogen peroxide do not rust in air. Iron, zinc, and lead are examples of the first class, and the rusting of all these metals is stopped by contact with substances which prevent the formation of hydrogen peroxide. Copper, silver, and nickel are examples of the second class; these metals do not rust in air and are not oxidised by hydrogen peroxide.—*Proc. Chem. Soc.*, **19**, 150.

Composition of Iron Rust.

The chemical reactions concerned in the process of rusting may be represented by the following equations: $Fe + O_2 + H_2O = FeO + H_2O_2$. $2FeO + H_2O_2 = Fe_2O_2(OH)_2$, the latter representing the composition of iron rust. The presence of water in the liquid state is essential alike for the occurrence of rusting and for the formation of hydrogen peroxide. In the case of certain metals, notably that of zinc, hydrogen peroxide can be detected during the process of rusting. It has not been possible, however, to detect with certainty the presence of hydrogen peroxide during the rusting of iron. This may be due to the fact, previously mentioned, that iron is very rapidly oxidised by hydrogen peroxide with formation of rust, so that under ordinary conditions the hydrogen peroxide is quickly destroyed. Other conclusions are that the direct decomposition of water by metallic iron with liberation of hydrogen can take place only at a relatively high temperature and is not affected by the presence of alkaline salts, such as sodium carbonate. The action of aqueous carbonic acid on iron in the absence of oxygen results in the liberation of hydrogen and formation of ferrous carbonate or bicarbonate. If oxygen is present, the ferrous salt subsequently undergoes oxidation, the rust obtained in this case containing a varying amount of carbonate. Electrolytic action occurs when the iron is impure or when another metal is present. The electropositive metal suffers oxidation and hydrogen gas is evolved. This action is not prevented by the presence of sodium carbonate.—*Proc. Chem. Soc.*, **19**, 150.

Assay of Hydrastis.

E. Beuttner has contributed very interesting and useful papers on the assay of hydrastis. In the former the chief point that he draws attention to is the liability of ethereal solutions of hydrastine to deposit the alkaloid on standing. It has often been observed that alkaloids that are but sparingly soluble in ether are sometimes taken up in considerable quantity at the moment of liberation and deposited on standing. This is the case with hydrastine, especially if the rhizome or fluid extract is rich in alkaloid. In no case should the proportion of solvent (a mixture of ether and petroleum spirit) be less than ten times that of the rhizome, nor should the ethereal solution be allowed to stand long. The following is Beuttner's method for assaying liquid extract of hydrastis: Evaporate 8 Gm. to 3 Gm. in a 200 C.c. flask on the water bath, add 10 Gm. of water, 70 of ether, 10 of petroleum spirit, and 5 of ammonia. Shake violently for three minutes, allow to separate, and pour off 60 Gm. through a plug of wool into a separator. Transfer the alkaloid to dilute hydrochloric acid, add 60 Gm. of ether and 5 C.c. of ammonia, shake well for five minutes, pour off 50 Gm., dry, and weigh.—*Schweiz. Woch.*, **41**, 242.

Assay of Cinchona Bark.

Beuttner has also compared several methods for the assay of cinchona bark, especially that of the German Pharmacopœia and that of Keller. Both of these methods yielded discordant results, which were generally lower in proportion as the length of time occupied by the extraction of the alkaloid was prolonged. Here also Beuttner eventually found that part of the alkaloids were deposited in a minutely crystalline form from their solution either in ether or a mixture of ether and chloroform, and the following method of treatment was devised to obviate this inconvenience:—7 Gm. of finely powdered cinchona bark are weighed into a 200 C.c. medicine bottle, 55 Gm. of chloroform added, and then 5 Gm. of a 10 per cent. solution of caustic soda; the mixture is well shaken for three hours, 85 Gm. of ether are added, and, after well shaking, 3 Gm. of powdered tragacanth and sufficient water (10 to 20 Gm.) to make the bark agglomerate. The ether-chloroform solution is then immediately poured off and shaken with 2 Gm. of water and 1 drop of solution of soda. 3 Gm. of tragacanth are now added, and after well shaking, 100 Gm. of the ether-chloroform solution, which is now perfectly bright, is filtered through cotton wool into a separator. 15 C.c. of N/10 hydrochloric acid and 5 C.c. of water are run in and shaken, the acid solution separated, and the ether-chloroform washed with water. The acid liquid is then titrated with N/10 solution of soda, hæmatoxylin being used as the indicator.—*Schweiz. Woch.*, **41**, 265.

Borax as a Preservative of Iodine Tincture.

A. Claret finds that the addition of borax, in the proportion of 2 parts to every part of iodine used, is a good means of preventing the formation of hydriodic acid in alcoholic solutions of iodine such as the Codex tincture (and the B.P. Liquor Iodi Fortis), and also for removing that acid when it has been formed in long-made preparations. The avoidance of this free acid is of importance, since severe pain and burning, followed by desquamation and excoriation, may be provoked by the application of a very acid iodine liniment.—*Journ. Pharm. Chim.* [6], **17**, 520.

MEDICINE STAMP DUTY ACTS.*

Some Results of the Recent Appeal Cases.

The recent revolution in the administration of the Medicine Stamp Acts is of more immediate practical importance than any other question of pharmaceutical politics. The changes resulting from the two recent appeal cases are not yet fully understood by the trade.

In point of time, the first case is that of Ransom *v.* Sanguinetti. In January, 1902, the Inland Revenue claimed a penalty for the sale, unstamped, of a box of jujubes labelled "Pure Gum Pastilles, Influenza. Delightfully Soothing to Singers and Public Speakers." The summons, heard in March of last year, was dismissed, and the authorities appealed. They said that they considered "Influenza Pastilles" alone was liable, but that they would not have pressed for a penalty if that had been the form of the label. The Divisional Court, from which there can be no appeal, upheld their view. They decided that the label did render the article liable to duty.

It is open to some doubt whether the Court would take the same view as to the sale, unstamped, of a penny box of antibilious pills, though, of course, the price has no legal bearing on the question. The Commissioners say that, in face of that decision, they must now hold that such titles as "Cough Mixture" involve liability to duty. They have always held that view, but have not put it into practice. In a letter to the Secretary of the Chemists' Defence Association, they say they will not proceed to enforce the Act in this respect until after September 30 next.

A notion exists in some quarters that the influenza pastilles case was brought about through the fight over the ammoniated quinine. This is, of course, a mistake. The summons in the pastilles case was issued before Mr. Glyn-Jones first communicated with Somerset House in reference to his claim to the "chemists' privilege," and the summons in his case was not issued until after the pastilles case had been decided in the police court.

Before the quinine case, a recommendation for the prevention, cure or relief of an ailment was held to render any article so labelled, and by whomsoever sold, liable to duty. The victory in that case has established that, unless an article has been rendered liable by the original or first vendor, it is not liable when sold by a chemist "who hath served a regular apprenticeship," even though he recommends it by label or advertisement, provided its properties, qualities, virtues, etc., are well known and admitted, and he does not claim any proprietary rights in it. The combined results of the two cases only affect the question of liability by holding out or recommending. All the other grounds of liability remain untouched.

Medicines which are not pure drugs, which are the subject of a patent, or in which proprietary rights are claimed, remain as before, liable by whomsoever sold.

The authorities now interpret the law as to recommendation as follows:—

(1) That all medicines (not pure drugs), however held out or recommended by label, public handbill or advertisement, for the prevention, cure, or relief of an ailment, are liable when sold by the unqualified dealer, which term includes limited companies, however constituted.

(2) That to designate by label a medicine by the name of a disease or organ of the body—*e.g.*, "cough mixture"—is a holding out for the prevention, cure, or relief of an ailment.

(3) That if the medicine is not liable upon any other grounds, and is one, the properties, etc., of which are well known and approved, the chemist who has served a regular apprenticeship may recommend and sell it without stamping it.

(4) That B.P. articles coming within the chemists' exemption will not at present be questioned.

The practical effect of all this will be that, legally, the penny trade in antibilious pills, cough pills, corn plaster, toothache tincture, so labelled, cannot be carried on under any conditions by limited companies or small shopkeepers who are not chemists. Articles so labelled and sold by such vendors, in whatever quantities, cannot escape duty.

On the other hand, chemists can sell and recommend these articles, unstamped, provided that:—

(1) They have not been the subject of a patent.

(2) No secret or proprietary rights are claimed at the time of sale or at any time before.

(3) They were not recommended by label, public notice, or advertisement, by the person who first put them on the market.

(4) The properties, virtues, and efficacies are well known.

The following are instances of labels which the chemist can use without incurring liability to stamp duty:—

ANTIBILIOUS PILLS.
(Pil. Colocynth. Co. B.P.)
......
Blank, Chemist, London.

UNIVERSAL LINIMENT.
(Lin. Terebinth. B.P.)
For Rheumatism, Sprains, etc.
......
Blank, Chemist, London.

ANTISEPTIC HEALING OINTMENT.
(Ung. Acid. Borici. B.P.)
For Wounds, Abrasions, Chilblains, etc.
......
Blank, Chemist, London.

Chemists will be inconvenienced for a time by the change in the reading of the law. Traders who are not chemists will be seriously handicapped. The position created is one which must receive the careful consideration of chemists and their associations, but we strongly incline to the view that they should leave any agitation for alteration of the law to those who do not come under "the chemists' privilege." The stricter the administration of the Act, the more valuable will that privilege be to those who have the legal and moral right to it.

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* Reprinted from the *Anti-Cutting Record.*

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

MEETING OF THE COUNCIL.

At the meeting of the Council held on Wednesday last, July 1, the President, Mr. S. R. Atkins, took the chair. Other members present were the Vice-President, Mr. C. B. Allen; the Treasurer, Mr. Walter Hills, and Messrs. Carteighe, Cooper, Corder, Cross, Gifford, Glyn-Jones, Harrington, Newsholme, Park, Robinson, Symes, and Wootton.

The Secretary read the minutes of the June meeting, which were confirmed.

Election of Members.

The following persons having tendered their subscriptions for the current year, were elected members of the Society:—

Cattell, Charles; East Dereham
Clarkson, Thos.; West Hartlepool
Colebrook, Donald; Shooter's Hill
Dale, John George; Northallerton
Farrow, Albert E.; Old Brompton
French, Montague R.; Gosport
Johnston, Thomas H.; Rutherglen
Manning, Henry R.; Kensington
Neill, Ernest Alfred; Cheadle Hulme

Election of Student-Associates.

The following persons having tendered their subscriptions for the current year, were elected student-associates of the Society:—

Chadwick, George E.; Macclesfield
Falconer, Adah; New Barnet
Harrison, Wm. Thomas; Lincoln
Keene, Hedley H.; Bournemouth
Murray, David; Portobello
Saunders, Stanley I.; Streatley
Sawyer, Albert Ernest; Wrentham
Williams, Owen Stanley; Narberth.

Restorations to Register.

The names of the following persons, who have made the required declarations and paid the restoration fee of one guinea, were restored to the Register of Chemists and Druggists:—

Wesley Barritt; 164, Charing Cross Road, W.C.
James Spencer Kay; 6, Brook Street, Ashton-in-Makerfield.
Samuel Moore; 20, Longland Road, Liscard, Cheshire.
John Pearse; Cavendish House, St. Albans.
Frank Henry Walter; 38, Market Place, Penzance.
Frederic Wm. Wooler; 25, Benedict Road, Brixton, S.W.

Several persons were restored to the Society upon payment of the current year's subscription.

Letters from Absent Members.

The President said he had received a letter from Mr. Harrison expressing regret at not being able to attend that day, and he had also received, a few days ago, a letter from Mr. Rymer Young, who feared that he might not be able to attend the Council meeting, and Mr. Taylor had written to say that he would not be able to be present.

Finance Committee.

The following report was presented by this Committee:—

June 24, 1903.

Present: Messrs. Carteighe, Cooper, Harrington, and Robinson.

1. The Committee appointed Mr. Robinson Chairman.

2. The Secretary submitted the following statement of the accounts:—

General Fund:—				£	s.	d.
Balance June 1, 1903				4,367	5	7
Receipts during June—						
Penalties and costs	£70	9	9			
Subscriptions	63	10	6			
Examination and Registration Fees	2,871	15	0			
				3,005	15	3
				7,373	0	10
Payments ordered at the last meeting of the Council				1,015	12	8
Balance				£6,357	8	2

Amounts Recommended for Payment:—	£	s.	d.
On behalf of the Journal	372	9	10
School examinations and Library	68	2	7
House	28	2	0
Medals	15	13	6
Stationery, printing, etc.	50	2	3
Current expenses	300	0	0
Monthly salaries	163	9	10
	£998	0	0

Benevolent Fund (Current Account):—			
Balance June 1, 1903	750	19	4
Receipts — Subscriptions and ground rents	16	0	8
	767	0	0
Payments—Grants	58	0	0
Balance on the Current Account	£709	0	0
Balance on the Donation Account	£19	13	6

3. The Committee examined the accounts and found them to be correct, and in accordance with the foregoing statement.

Recommended that the Treasurer be requested to pay the amounts indicated.

R. A. Robinson, Chairman.

Mr. Robinson, as Chairman of the Finance Committee, moved that the report and recommendations of the Committee be received and adopted. But before that was put to the vote there was a matter to which he wished to refer. The present Finance Committee had come into being at a favourable time, and the balance in hand was somewhat large; therefore, it seemed to him, as that balance was more than sufficient to meet the expenditure of the next two or three months, that some of the money could be deposited and be earning something. The balance, after paying the current expenses, would be over £5,000, and he would suggest that the Chairman of the Finance Committee and the Treasurer be empowered to put two or three thousand pounds on deposit for a few months. He thought that would be an action which would commend itself to the Council. He would move first, however, that the report of the Committee be received and adopted.

This was agreed to.

Mr. Robinson then moved the following:—

> That the Chairman of the Finance Committee and the Treasurer have authority to place such sums on deposit account as they may think desirable, reporting their action to the next meeting of the Finance Committee.

Mr. Harrington said he had great pleasure in seconding that motion. He thought it was very desirable that any spare money should be earning a little for the Society.

The President: I have much pleasure in supporting the motion.

Mr. Newsholme asked how long it was suggested that the money should be deposited.

Mr. Robinson: I do not wish to fix any particular time, but for as long as it may be desirable.

The motion was then carried unanimously.

Benevolent Fund Committee.

The report of this Committee included the recommendation of grants to the amount of £28 in the following cases:—

> Widow of a registered chemist and druggist. 78. Darlaston. Had a grant of £13 in July, 1902. Applicant's position is much the same as it was at the time of the last application. She is in feeble health, and dependent upon her two daughters and the grant from the Fund. She is in debt £2 for medical attendance.
>
> Registered chemist and druggist. 67. Walthamstow. Had two grants of £13 each, the last in July, 1902. Applicant has no regular employment, and his health will not permit of his doing any. He has six children, who are unable to give adequate assistance. His wife is unable to do anything but ordinary house work. Applicant appeals for a larger grant than that hitherto made.

The Vice-President, as Chairman of the Benevolent Fund Committee, read the foregoing report, and moved that it be received and adopted. There was another matter, however, which had been considered by the Committee, and to which reference should be made; that was in connection with the cards issued by candidates who are on the provisional list for annuitants. The Committee thought it would be advisable to have a regular card adopted by the Society, as had been done by other similar charities, so that the Secretary might have some control over the cards issued by candidates. It was thought very necessary that the Secretary should know whether all statements on the cards were correct, and with that object in view the Committee made the following recommendation:—

> The Committee recommends that the canvassing cards used by candidates for an annuity be in future submitted to the Secretary, and that an approved statement respecting the Fund be placed at the top of each card issued by or on behalf of candidates.

The report and recommendations were adopted unanimously.

Library, Museum, School, and House Committee.

The following report was presented by this Committee:—

June 10, 1903.

Present: Messrs. Allen, Carteighe, Harrington, Hills, and Newsholme.

1. The President was appointed Chairman.
2. The Committee received the usual monthly statements respecting the Society's Libraries and Museums in London and in Edinburgh, and particulars of these are published in the *Pharmaceutical Journal* for June 13, 1903.

   Recommended that the Library and Museum be closed at 5 p.m. during July, August, and September, and closed entirely during the first fourteen days in September.
3. The Curator presented his report on additions to the Museum during the past seven years, and it was referred to the Chairman for consideration.
4. The Curator applied for permission to attend the annual meeting of the Museum Associations in July.

   Recommended that the request be acceded to and that a grant of £10 be made to him for expenses.
5. Ordered that a copy of the *Pharmaceutical Journal* be sent regularly to the Exposition Board in Manila in exchange for official publications relating to the permanent Museum recently established by the Government of the Philippine Archipelago.
6. The School Staff attended and orally reported on the respective classes in the School of Pharmacy.
   - (*a*) The date of the prize distribution was fixed for June 26, at 3 p.m., on which date the Committee ordered the School to be officially closed for the session.
   - (*b*) On consideration of a new edition of the School prospectus the Committee appointed the President, Vice-President, and the School Staff to revise the prospectus and prepare it for press.

     Recommended that the usual issue of the prospectus be made during July to members and student-associates of the Society.

     Mem.: This involves printing about 7,000 copies
   - (*c*) On the recommendation of the School Staff the Committee ordered the regular insertion of an advertisement of the School, throughout the year, in certain journals.
   - (*d*) The Committee authorised the School Visitor to arrange for the disposal of the obsolete apparatus and appliances in the Lecture Preparation Room.
7. The Vice-President reported that the present arrangements for dealing with possible outbreaks of fire on the Society's premises are adequate, inasmuch as the National Telephone Company has provided for direct communication between the house and the fire brigade.

   The Vice-President further reported that it was desirable that the office telephone should be enclosed in a sound-proof cabinet.

   Recommended, on the foregoing report, that the telephone cabinet be provided.
8. The question of the nomination of a Salter's Research Fellowship was considered. One application was submitted.

   Recommended that Mr. James Stuart Hills be nominated for the Fellowship.
9. Attention having been directed to the condition of the stone staircase and passage leading to the Library, Messrs. Parkinson and Son had been instructed to inspect the same, and report thereon, as well as to furnish an estimate for the necessary renovation. The report of Messrs. Parkinson was to the effect that the staircase and passage had become so worn as to be unsafe, and estimating the cost of wholly replacing the defective material at £65 12s. An alternative estimate of £31 15s. for replacing a portion of the old stone was also submitted.

   Recommended, after consideration, that the estimate for £65 12s. be accepted and the work put in hand forthwith.
10. Professors Greenish and Wynne reported that the work in the Research Laboratory was proceeding satisfactorily.
11. A letter from Mr. Butt intimating that he contemplated the withdrawal of the E. Northway Butt Scholarships was considered.

    Recommended that no further nomination for a Butt Scholarship be made.

The report and recommendations of this Committee were adopted without comment.

The Medicine Stamp Difficulty.

Mr. Wootton, having previously given notice of motion, proposed the following:—

> That the Board of Inland Revenue be asked to receive a deputation from this Council on the subject of the designation of medicines.

He earnestly hoped that the Council would realise that the disaster which was threatened to the trade furnished an opportunity for the Council to render a great service to the trade—an unusual opportunity which he hoped the Council would take advantage of. He was not sure that anybody could do a great amount of good now, but he was sure that nobody but the Council could properly represent the case to the Board of Inland Revenue, and if the Council could not do it, no one could. He did not wish to take up any more time than was necessary, and he did not propose to relate the circumstances which led up to the present position; but, if the Council would allow him, he would like to make clear one or two points. Mr. Sanguinetti, a chemist in the West of London, sold a box of pastilles, the label of which bore the word "Influenza." There was no specific recommendation of any ailment, and there was no claim to proprietary right which involved liability to stamp duty; but the Board of Inland Revenue held that the word "influenza" was "holding out" within the meaning of the Act. He should at this point like to say that he thought the Chemists' Defence Association was perfectly justified in contesting that case under the regulations which up to that time had prevailed. The case was won before the magistrates, but the

Board of Inland Revenue appealed, and the Drug-Trade Appeal Fund very properly maintained the defence. He must say, however, that the defence was very poorly presented, and the High Court, without a moment's hesitation, supported the Board of Inland Revenue. About the same time the case known as the Ammoniated Tincture of Quinine Case, which Mr. Glyn-Jones defended, was decided. He mentioned that case because, while Mr. Glyn-Jones won and everybody congratulated him, as he (Mr. Wootton) now congratulated him, there was no doubt that the Board of Inland Revenue took the decision in that case into consideration in framing their present policy. He was inclined to think that when the Sanguinetti case was decided the Board of Inland Revenue at that time had no particular intention to reverse the policy which they had adopted for many years—in fact, the policy which had been adopted ever since the Medicine Stamp Duty Acts had been in force. For the last twenty years the Board had explicitly stated in the printed instructions to their officers the following:—

> The Board recognise the necessity that exists for giving to a preparation such a designation or name as shall distinguish it from other medicines, and they do not attribute any further meaning to such words as cough mixture, liver pills, lip salve, teething powders, corn paint, etc., etc. Labels, etc., so worded, must, however, contain no reference to an ailment if it is desired to avoid liability. The use of names of organs of the body in connection with any medicines is held to mean and include the diseases to which such organs are subject.

Under that sanction, which was supposed to be almost as permanent as an Act of Parliament itself, every chemist, he supposed, had built up some little trade—there were thousands of such little trades all over the country—not in proprietary medicines, because there was no claim to proprietorship, but these preparations had simply been given such a designation as was necessary to distinguish them from others, and now, upon one judgment, the Board of Inland Revenue, in effect proposed to practically ruin that trade. Of course, the Board had not formally intimated that they should prosecute in cases where pennyworths were sold, but the penny trade existed everywhere, and he did not see how the Board was going to draw the line between 1d. articles and 1s. articles—they could not draw the line. He had no doubt that since the judgments in the Sanguinetti and the Glyn-Jones cases had been delivered the Board of Inland Revenue had been bombarded with inquiries about labels, and it was, therefore, inevitable that there must be some discussion, and the Board had no choice but to reply that, having regard to those judgments, they were bound to hold that many of the labels were liable. Had it not been for those inquiries, he believed the matter would have been allowed to drop, and the whole thing would have blown over. As it was, the Board had written a letter in which they stated that it was not their intention to press for payment of medicine stamp duty in cases where an article was sold by a duly-qualified chemist or druggist under such designation as "cough mixture," provided that the composition of the article was fully disclosed in the label, or that the article was prepared in accordance with a formula in the British Pharmacopœia or other well-known book of reference, and that a statement to that effect was included in the label; but that where such words as "cough mixture" were used without a statement of the ingredients from which the article was prepared, the Board felt that liability to duty was incurred. He was aware that there were a few people who were of opinion that it did not matter, as they could publish the formula of their preparations, but he should be very much surprised if that was the general feeling throughout the country. The revenue from "patent" medicine stamps had gone up considerably, but he did not think the Board of Inland Revenue should expect to draw millions from such an insignificant source. He had had some experience of the Board of Inland Revenue, and he had known something of their policy, as did also Mr. Carteighe and Mr. Glyn-Jones, and their experience had been that the Board had always tried to work harmoniously with the trade. The Board recognised the difficulties of the trade, and they had tried to make it as easy and smooth as possible, and he believed 99 per cent. of the trade had fairly acquiesced in the ruling of the Board. He did not wish to go into details as to what line of policy should be adopted if his motion was agreed to, but he would suggest that a small committee be appointed, and that the committee should discuss the matter in committee, and then appoint a deputation to go and hear what the Board of Inland Revenue have to say, and to discuss the matter with the Board. It was rather urgent that the matter should be attended to as soon as possible, because the last thing that had occurred was that Mr. Glyn-Jones, as secretary of one of his associations, had written to the Board asking how long they proposed to allow for the exhaustion of old labels, and the Board had given till September 30. He thought it would be very unwise to lose any time in approaching the Board, because if nothing was done until the old labels were replaced it would rather "nail the lid down on the coffin." He did not wish it to be thought that he desired the Council to take an active part in outside work generally, but this was a crisis which meant, comparatively, a lot of money to a large number of members of the Society. He thought the system on which the Board of Inland Revenue worked was a very reasonable one, and was satisfactory to both parties, for chemists, he believed, did stamp a great deal many preparations, but there were others, such as corn-paints etc., that were not stamped, and he did not think it was necessary that they should be, as it would be a great tax upon chemists. The chemist did not always wish to adopt the British Pharmacopœia for his pills, because he had reason to think, sometimes, that he could make a rather better pill—at any rate, something that suited his customers. It was quite clear that if the trade was to talk to the Board of Inland Revenue at all, it could be done best by the Council of the Pharmaceutical Society, because he was sure, from his knowledge of the Board in the past, that they would appreciate much more a deputation from the Council than from any other body. He was glad that Dr. Symes had given notice of a motion on similar lines to his own, and he understood that he was prepared to second his (Mr. Wootton's) motion.

Dr. Symes seconded the motion. He did not know that it was a strange coincidence that Mr. Wootton and he should have given notice of motion of the same character, though worded somewhat differently, and if the Council would accept Mr. Wootton's motion he should be willing to withdraw his own motion. He quite agreed that the Council was better able to approach the Board of Inland Revenue than any other body. He had on many occasions expressed the opinion that the Council should not take up work which he believed would be better done by somebody outside the Council; but in the present circumstances he thought it was certainly an occasion when the Council might very well take action. He could only say from what he had heard since the Board of Inland Revenue's proposals had been published that the incidence of the tax was likely to become a serious grievance to chemists. He should be the last person to advocate the free sale of quack nostrums, but there were many members of the craft throughout the country who prepared domestic remedies, which in no way interfered with medical practice, and were a convenience to the public, and the preparation of these remedies gave chemists an opportunity of displaying their skill in pharmacy. He knew it was possible to stamp medicines without that fact immediately classing them among quack nostrums, but it was a serious matter to be compelled to place a 1½d. stamp on a 1s. article, as it was placing a tax of about 12¼ per cent. on their gross earnings. He thought the Council could, without any loss of dignity, avail itself of the opportunity of showing that it was alive to the interests of the members of the Society as well as those outside. The Board of Inland Revenue had always been very reasonable in dealing with these matters, and he believed they would be inclined to listen to a deputation from such a body as the Pharmaceutical Society.

The President asked whether the members of the Council would prefer to discuss the motion in open Council or in committee. There was also some correspondence on the matter which could be read in committee.

Mr. Glyn-Jones said with regard to the question whether the matter should be taken in open Council or in committee, he thought that irrespective of the correspondence which had been received on the subject, the matter was one which could only be discussed by a body such as the Council, in open Council, in kid gloves. It was a question which should be considered very carefully, and he was not sure whether if it were taken in open Council it was possible that members might not be so sincere in their remarks as they would be in committee. He did not mean to imply that members who had already spoken had been insincere, but he believed it would be better to discuss the matter in committee. He therefore moved that it be taken in committee.

Mr. Cooper seconded.

Mr. Robinson said he thought the matter might be decided at once by referring it to a committee, particularly as Mr. Wootton had suggested that a small committee be appointed to deal with the matter.

Mr. Cross said he had a distinct objection to letting Mr. Wootton's motion pass, as he did not believe in the Council tying its hands without the matter receiving further consideration. He should therefore move as an amendment——

Mr. Carteighe here interposed on a point of order that there was already an amendment before the meeting, proposed by Mr. Glyn-Jones.

Mr. Hills asked whether the correspondence to which reference had been made was of an official character.

The Secretary: I have only one letter of an official character, and that is from the North British Branch.

The Council then decided to discuss the matter in committee, and, after a long discussion,

The President said a motion was before the meeting, proposed by Mr. Wootton, and seconded by Dr. Symes, and to that there was, he believed, an amendment.

Mr. Glyn-Jones said the amendment was as follows:—

> That the General Purposes Committee be requested to consider the advisability or otherwise of asking the Board of Inland Revenue to receive a deputation from this Council on the subject of the designation of medicines, and that the Committee be hereby authorised to take such steps as may seem necessary or desirable.

In moving that amendment he only wished to say that he thought every member of the Council realised that this subject was of importance to the whole trade. Personally, he was not quite prepared to go so far as Mr. Wootton in stating that the trade was threatened with disaster. While he recognised that it was a matter of great importance, it was a matter of very great difficulty and required delicacy in handling, and he thought that before a deputation was sent from the Council it would be better to submit the matter to the General Purposes Committee to go into the whole matter in all its bearings. If it was then thought desirable to send a deputation to the Board of Inland Revenue, he, for one, should be very pleased indeed; but if it were so decided it would be out of place for him to go into the subject more fully at that time. He could not help saying, however, that there was a good deal of commotion in connection with the recent decision of the Board of Inland Revenue, and in some quarters an indication of rather too precipitate action. He could not help thinking that such decisions as they had had in the two cases mentioned by Mr. Wootton were decisions which must for a little time unhinge things, but if the trade acted with discretion—and he hoped that it would do so—he believed chemists would be in a more satisfactory position than they had been in the past.

Mr. Cross seconded the amendment. He did not think he need say any more than that he did object to tying the hands of the Council to any particular course without it being first thoroughly discussed. He thought the Council should have as free a hand as possible, and while it might be necessary—and probably would be necessary—to send a deputation to the Board of Inland Revenue, he did not wish that course to be definitely marked out until the matter had received the fullest consideration. Though there had been mistakes made by going into the matter in rather a haphazard fashion, he thought there were features of the present position which were more advantageous than otherwise to registered chemists.

Mr. Carteighe said he should like to put down a paragraph or two on the subject for the consideration of the Committee and for the consideration of some of the brethren outside. When he was President, and since, he had had a good deal to do with the authorities, and he knew some of the difficulties that Mr. Wootton had referred to, and he sympathised with him warmly in the matter. But he wished merely to say this, "Don't you chemists and druggists be in a blue funk and frantically apply to the wholesale houses for relief." To act in a panic-stricken manner, as some seemed inclined to do, would be most humiliating. They could apply to the Council if they liked. In regard to Mr. Wootton's motion, whatever the original intention of the Medicine Stamp Duty Act was, or was not, in practice it had aimed for and been a trade benefit for the chemist and druggist, and when people wrote to the trade journals that the Act should be abolished as being antiquated it was a mistake. If it were done, they would soon find that they had made a great mistake, and there was reason for the Council not being too precipitate in the matter. He thought such a deputation as that suggested would not find him in it, but if it was possible that some future Council went down to Somerset House, he thought it would be hopeless to ask the Government for an amendment of the law relating to revenue. When he was a very young man—a little younger than Mr. Glyn-Jones, and somewhat as impulsive—he had sat at that table, before the days when reporters were admitted, and proposed that the Council should approach Somerset House and ask the authorities to abolish the Stamp Duty Act. The proposal was seconded by Mr. Brady, although it was greatly against the wishes of the then President, Mr. Sandford. Poor Brady! we have learned since then the value of doing nothing, or, in other words, in letting sleeping dogs lie. But at that time, as two young men, they were very enthusiastic, and they carried the proposition on purely ethical grounds. They set to work that very afternoon, and Mr. Wootton would probably be interested to know that Mr. Brough, who was then the editor of the *Chemist and Druggist*, also thought that the Act should be repealed. He heard of the matter and asked him (Mr. Carteighe) to write an article on the subject, but he had to write and tell him that, after going into the matter, he was intending to write an article in the very opposite direction that he had suggested. That only showed the value of looking into matters before being too precipitate.

The amendment was then put and declared carried by a large majority, Mr. Wootton being the only person who voted against it.

Mr. Wootton: Can you suggest a day for the General Purposes Committee to meet?

The President: I would suggest that we meet next Wednesday at three o'clock.

Mr. Carteighe said he thought he was down for two committees next week, and he doubted whether it would be convenient for several other members, and if they were to adopt Mr. Wootton's suggestion to get opinions from the country, he thought a fortnight would be none too much.

The President: I am open for any date. I only want you to feel that this matter presses.

Mr. Glyn-Jones said Wednesday would not be suitable for him.

Mr. Hills: When you get the opinion of the country, what are you going to do with it? I think we shall have a number of opinions, and it will require six months to consider the matter.

Mr. Carteighe suggested that it be an all-day sitting.

Mr. Cross: Let us face the matter.

Eventually it was decided that the meeting be held on Thursday, July 16, at twelve o'clock.

Resolution from the North British Branch.

The Secretary then read a letter received from Mr. J. Rutherford Hill, intimating that at a recent meeting of the North British Branch Executive the following resolution had been passed:—

> That in the interests of public safety, the Council be respectfully asked to take into consideration the present action of the Revenue Department with reference to the labelling of domestic remedies and their liability to stamp duty.

This and other letters which had been received on the same subject were referred to the General Purposes Committee.

The following report was then presented from the

General Purposes Committee.

> June 30, 1903.
>
> Present: Messrs. Allen, Atkins, Carteighe, Corder, Cross, Gifford, Glyn-Jones, Harrington, Park, and Wootton.
>
> The President was appointed Chairman.
>
> The Sub-Committee on the question of Food and Drug Standards was appointed to meet on Wednesday, July 1, at 2.30 p.m.
>
> On consideration of the remit from the Council respecting the appointment of a second representative on the Pharmacopœia Conference, recommended that Mr. Walter Hills be appointed to succeed Mr. Ekin on the Pharmacopœia Conference.
>
> S. R. Atkins, Chairman.

The President said he had great pleasure in moving that the report and recommendations of the Committee be received and adopted. He said great pleasure because he felt that they would be most efficiently represented by Mr. Hills at the Pharmacopœia Conference, and a great advantage would be that they had a representative who was in touch with the Council.

Mr. Carteighe seconded. He thought it was a very wise decision to appoint Mr. Hills, and he had no doubt that it would be accepted by him in the same spirit he had shown towards the Society in the past.

The report and recommendations of the Committee were agreed to.

Co-option of Mr. Currie.

The Secretary reported the vacancy caused by the resignation of Mr. A. L. Savory.

Mr. Carteighe moved that Mr. W. L. Currie be co-opted to the seat on the Council. There had been occasions in the past when it was doubtful whether it was desirable to co-opt anyone from the list of unsuccessful candidates at the Council election. But on the present occasion he thought it was desirable, as it enabled the Council to do what there was a general feeling should be done, and that was to appoint a second representative for Scotland. While he did not attach the slightest importance to territorial representation, he did think it was of the greatest importance that there should be representatives from the extremities of the country, and if Mr. Currie were co-opted, Scotland would be represented in the East and in the West. Mr. Currie had been an active member of the Pharmaceutical Society for a good many years. He was in touch with the Federation of Local Pharmaceutical Associations, and was a live man, who took an active interest in pharmaceutical affairs, and he believed if Mr. Currie were added to the Council it would be an advantage to the Society generally. He was not aware when he first thought of bringing this matter forward that any representation would be made elsewhere, but he believed it had been stated in the Press that such a representation had been made. But, quite apart from that, he had thought, and still thought, that it was desirable that the Council should co-opt Mr. Currie, and he hoped he would be able to continue the consistent course of zeal that he had always shown towards the Society.

Mr. Newsholme had much pleasure in seconding the motion to co-opt Mr. Currie to a seat on the Council. There was one point that Mr. Carteighe had overlooked, viz., that Mr. Currie was at one time Vice-Chairman of the North British Branch Executive, and did very good work in that position, which required no words of his (Mr. Newsholme's) to emphasise.

The Secretary then read a letter which had been received from Mr. Peter Boa, who wrote on behalf of certain members of the Society in Scotland, expressing the hope that the Council would see its way to co-opt Mr. Currie to the vacant seat on the Council.

Mr. Carteighe said it was a source of great satisfaction to him, and he had no doubt it would be a great satisfaction to Mr. Boa, to know that some of the members of Council in the south had been fortunate enough to make a proposition that they in the north thought so desirable.

The President heartily supported the motion, which was carried unanimously.

Jacob Bell and Manchester Scholarships.

The Secretary announced that the Examiners appointed to conduct the examination for the Jacob Bell Scholarships, had reported that twenty-six candidates had competed for the scholarships at the following centres:—London, 20; Manchester, 3; Edinburgh, 3. The envelopes bearing the mottoes of the successful candidates having been opened by the Committee appointed to make the award, had been found to contain the following names:—

The Committee had awarded the Scholarships to Joseph Maurice Treneer and George Marie Joseph Cole, subject to the approval of the Council.

The competitors who adopted the following mottoes had obtained upwards of two-thirds of the maximum number of marks (which is the minimum for the award of a Bell Scholarship). The arrangement is in order of merit:—

3 Silex
4 Usque Conabor
5 Finis Laborum
6 En Avant
7 Salicine
8 Avance Sans Peur
9 Labor Omnia Vincit
10 Maestus
11 { Fiat Lux
Labor Omnia Vincit

The Committee also reported that one candidate had competed for the Manchester Pharmaceutical Association Scholarship, and that he had reached the standard of marks entitling him to the award of the scholarship. The envelope bearing the motto of the successful candidate was opened by the Committee appointed to make the award, and had been found to contain the name of George Naylor, to whom the Scholarship had been awarded, subject to the approval of the Council.

The report and recommendations of the Committee were adopted and on the motion of the **President**, the best thanks of the Council were accorded to Messrs. Pinches and White for having conducted the Jacob Bell and Manchester Scholarships examinations.

The Bell Scholarships Examination.

The **Vice-President** having briefly referred to the recent examination for the Jacob Bell and Manchester Scholarships and to the gratifying fact that out of twenty-six candidates no less than twelve gained the qualifying number of marks for the Bell Scholarships, said he had taken a great interest in these scholarships for some time, and he had come to the conclusion that it was time certain alterations were made in the regulations governing the examination, in order to bring the examination more into line with recent advances in education. He did not propose to move a resolution at that meeting but he had brought the matter forward, so that it might be considered in the near future.

The **President** said he was glad that the Vice-President had brought the matter forward, as it required consideration.

Application for a Cheque.

The **Secretary** stated that a letter had been received that morning which involved an extra cheque being drawn. The letter was from Mr. Hill, who wrote to say that the Chairman of the Executive required a cheque for £300 to meet current expenses.

Mr. **Newsholme** proposed that the Treasurer be authorised to sign the cheque required.

Mr. **Robinson**, as Chairman of the Finance Committee, protested against applications for money being sent in after the Finance Committee had passed the accounts, and said he hoped the officials connected with the North British Branch would remember that the Committee now meets on the Wednesday preceding the Council meeting, and that they would in future send in their applications before the Committee meeting. It was not quite fair to the Council or the officers that such a cheque should be asked for that day. It would involve a special resolution of the Council being passed, authorising the Treasurer to sign the cheque. He did hope that the officers concerned would get into the way of sending their applications in time. He now had pleasure in seconding the motion.

This was then put and carried.

Appointment of the School Staff.

Chair of Botany	J. R. Green, F.R.S.
Chair of Chemistry	W. Palmer Wynne, F.R.S.
Chair of Pharmaceutics	H. G. Greenish, F.L.S.
Assistant Lecturer in Physics	T. E. Wallis, B.Sc.

Correspondence.

The **Secretary** stated that a letter had been received from Mr. Savory thanking the Council for their kind letter to him, and expressing the hope that he might at some future time be able again to take a seat on the Council.

Letters of thanks had also been received from the various officers appointed at the June meeting of the Council, and a letter was read from Mr. J. R. Hill announcing that Mr. David Brown Dott (Edinburgh) had been elected Chairman of the North British Branch Executive, and Mr. Thomas Dunlop (Glasgow) Vice-Chairman.

This concluded the public business.

Journal Committee.

Subsequently the report of the Journal Committee was considered and, on the recommendation of the Committee, Mr. John Humphrey was appointed Editor of the *Pharmaceutical Journal* for the ensuing year.

SCHOOL OF PHARMACY.

DISTRIBUTION OF PRIZES.

On Friday, June 26, 1903, in the Lecture Theatre at 17, Bloomsbury Square, London, at 3 p.m., the **President**, Mr. S. R. Atkins, in the chair, supported by the Vice-President (Mr. C. B. Allen), Mr. Michael Carteighe, Mr. Walter Hills, Mr. Glyn-Jones, and members of the School staff.

The **President**, in opening the proceedings, explained why the School prizes were being distributed that day rather than in October, as had been the case for many years. He said it had been found that during the three months which elapsed between the close of the session and the inaugural meeting in October, the students were scattered all over the country, and in some cases had gone to distant parts of the world. Consequently, when the prizes were distributed many of the old students were unable to attend, and when the name of a student was called as a prize-winner it was somewhat painful to find that he was conspicuous by his absence, and that absence was due to no lack of interest in the reception of the prize. If he (the President) thought so he should very probably think that the prize had been improperly awarded; but he knew, on the contrary, that it was often very inconvenient for students, scattered all over the country and holding responsible positions in various places, to come up to London for the distribution of the School prizes. Therefore it had been thought better that the prizes should be distributed at the end of the session—viz., on the "breaking-up day." The President then expressed regret at the absence of Professor J. Reynolds Green, who wrote to say that the University of Birmingham, of which he is an examiner in botany, was holding its practical examination that day, and he regretted that on that account he would not be able to support the Dean of the School on the present special occasion. A very kind letter had also been received from his predecessor in the chair, Mr. Newsholme, of Sheffield, who had fully intended to be present, but owing to an important engagement in Sheffield that day he was unable to attend.

Professor H. G. **Greenish**, Dean of the School, then read the following

Report on the Session 1902-3.

> As Dean of the School of Pharmacy I have to report that the session which is now terminating has been a favourable one for the School. The number of entries, while slightly below that of last year, is in advance of that of the previous year. Throughout the entire session the attendance has been excellent, and the work has been well maintained by both elementary and advanced classes. As evidence of the diligence with which the students apply themselves to their studies and also of the advantage they derive therefrom, I may allude to the success they attain in the somewhat severe test of the Society's examination. At the Minor Examination held in July last year 72 per cent. of the students of the School of Pharmacy who presented themselves were successful, whereas of the total number of candidates only 28 per cent. passed. At the Major Examination held in April last, at which the advanced students of the present session presented themselves, 75 per cent. passed. These results vouch for the satisfactory nature of the teaching in the Society's School, and for the satisfactory manner in which the students profit by it. The Staff trusts that those who have just passed through the elementary course and are about to present themselves for examination will maintain this high standard. In connection with the successes attained by our students, I may observe here that the Pereira Medal has this year, as on many former occasions, been gained by a student of the School of Pharmacy. This medal, however, not being a School prize, will not be presented to-day.
>
> The usual prize examinations have been held in due course in both elementary and advanced classes. In the former

especially the competition was keen, nearly the whole class presenting itself for examination. It is very gratifying to note that four of the certificates have been awarded to ladies.

The medals and certificates have been awarded as follows:—

Elementary Course.

Practical Chemistry	Bronze Medal	Joseph Richardson
" "	Certificate of Honour .	Alfred Wade
" "	Certificate of Honour .	Georgina E. Barltrop
Chemistry & Physics	Bronze Medal	F. G. C. Walker
" " "	Certificate of Honour .	May Burt
" " "	Certificate of Honour	Hilda B. B. Caws
Botany	Bronze Medal	F. G. C. Walker
"	Certificate of Honour .	J. W. Privett
"	Certificate of Honour .	Thos. Ough
Materia Medica......	Bronze Medal	J. W. Privett
" "	Certificate of Honour .	F. G. C. Walker
" "	Certificate of Honour .	G. W. Tunnicliff
Pharmacy	Silver Medal	F. G. C. Walker

Advanced Course.

Botany	Silver Medal	A. Trentham Maw	
"	Certificates of Honour	Nora Renouf A. Norman Hirst Bernard Collitt	Equal
Chemistry	Silver Medal..........	Bernard Collitt	
"	Certificates of Honour	J. Trevor Cart A. Norman Hirst	
Practical Chemistry	Silver Medal..........	Thomas Llewelyn	
" "	Certificates of Honour	F. Howard Moore Nora Renouf	
Materia Medica	Silver Medal..........	A. Norman Hirst	
" " ..	Certificates of Honour	Thos. Llewelyn S. E. Walmsley	

During the session several changes have been made, to which I must briefly allude. The distribution of the prizes at the end of session in which they are won, as is now about to be done, instead of at the beginning of the succeeding session is a change that meets with the entire approval of the Staff and, I venture to think, of the students also. Not only has every prize-winner the privilege of receiving his prize from the hands of the President of the Society, but he receives it whilst his success is still fresh in his mind.

As far as the personnel of the staff is concerned, there has been but little change since my last report in October, 1902, Mr. J. T. Cart, one of our Bell Scholars, having been appointed junior demonstrator in the Chemical Laboratory. A new series of lectures, delivered by Mr. Deane, on the theory of the work in practical chemistry supplies a course that without doubt has for some time been a pressing need in our educational system.

A greater visible change will, however, be conspicuous in the Lecture Theatre, and particularly at the lecture table at which I am speaking. The Council of the Society, always solicitous for the education and comfort of the students, has, at the representation of the Staff, remodelled the equipment of the Theatre and adapted it to modern requirements.

Passing to the relations of the School to other educational bodies, the Staff of the School has always been convinced of the desirability of a closer union between pharmacists and the reconstituted University of London. Their efforts in this direction resulted a short time ago in the recognition of the professors as teachers of the University. The Principal of the University, Professor Rücker, in recently expressing the desire felt by the University of entering into closer relationship with other educational bodies, mentioned the Pharmaceutical Society as one of such.

That the students, after leaving the School, do not lose their interest in the scientific work they have commenced is evidenced by the number of valuable memoirs that have been published in the *Pharmaceutical Journal* and elsewhere by men who have received part, at least, of their training in the School of Pharmacy.

Turning to the social life of the student in the Society's School, I should like to allude to the good work done by the Students' Association and to the very instructive visits paid by the members to various institutions. Last session the students were particularly fortunate in the invitation extended to them by Mr. Edmund White, a former Bell Scholar, to visit the pharmacy department at St. Thomas's Hospital, a visit that was made particularly instructive by the explanations that were given by Mr. White. The Pharmaceutical Football Club, which has also been instrumental in promoting social intercourse amongst the students, has this year, under the captaincy of Mr. Collitt, one of the past Bell Scholars, carried off the Inter-Pharmacy Silver Cup for the second time in succession.

As I remarked at the outset, the past session has been, both from the educational and social standpoint, in every way a successful one.

The President said the report of the Dean was a most excellent one, full of acknowledgment of good work done, and full of promise of good work yet to come. There were several points in it of deep interest, but he did not propose to comment upon them at that moment, but would take the opportunity of doing so on another occasion.

Presentation of the Prizes.

Advanced Course.

The President then presented the prizes to the successful students, addressing to each a few congratulatory words. On presenting Mr. A. Trentham Maw with the silver medal for botany, the President expressed the special pleasure it gave him to hand the medal to the son of a very old friend of his own. The name of Maw was a very old and honoured name in pharmacy, and the Society was very much obliged to Mr. Maw, sen., for the help he had given to the Benevolent Fund, and he (the President) was extremely proud that his son was worthily following in his father's footsteps. Miss Nora Renouf, of Jersey, was the next to come forward to receive certificates of honour in botany and practical chemistry, and the President remarked that though there had previously been distinguished pupils from the Channel Islands, he thought Miss Renouf was the first lady from those islands who had distinguished herself in the School of Pharmacy. Referring to the entrance of ladies at competitive examinations, the President said he thought that if he found himself competing against a lady in an examination, he should feel inclined to withdraw from the contest, because "If she will, she will, and there's an end on 't." Mr. Bernard Collitt, who received the silver medal for chemistry and a certificate of honour in botany, and Mr. A. Norman Hirst, who received the silver medal for materia medica and certificates of honour in botany and chemistry, were both warmly congratulated by the President, who said he was sure they would regard the awards as incentives to further work. Referring to Mr. Hirst, he said: "You have done so extremely well that I feel sure you will do even greater things in the future."

Elementary Course.

In presenting the medals and certificates to the successful students in the elementary course, the President said he could not say pretty things to everybody, and he could not coin adjectives, but he could heartily congratulate each on the success they had achieved. Referring to Mr. Wade, who had gained a certificate of honour in practical chemistry, the President said he hoped he would go on to the advanced course, and he was sure that if he did he would do well. Presenting Mr. Thomas Ough with a certificate of honour in botany, he said: "I congratulate you on having won that certificate. Your brother, I think, was a very distinguished student in this School some time ago, and I hope you will follow your brother's example." When Mr. F. G. C. Walker came forward to receive the bronze medal for chemistry and physics, the bronze medal for botany, a certificate of honour in materia medica, and the silver medal for pharmacy, the President exclaimed: "Mr. Walker, you are a pluralist!" and he went on to say that pluralists in livings—ecclesiastical—and other things were sometimes condemned, but the present case was rather to be commended. He felt sure it would be a very happy home-going for the recipient of so many awards; and in handing the medals and certificate to Mr. Walker he said: "I congratulate not only you, but also your friends, that you are taking away these three medals."

The Hanbury Awards.

The President then handed copies of 'Pharmacographia' and 'Science Papers,' presented by Mr. Thomas Hanbury, in memory of the late Mr. Daniel Hanbury, to Mr. Collitt and Mr. A. Trentham Maw, and 'Science Papers' to Mr. A. Norman Hirst and Mr. F. G. C. Walker.

The President said that portion of the proceedings dealing with the distribution of the prizes being completed, he believed his friend Mr. Lescher, an old student and Pereira Medallist, had a few words to say.

The School and the New President.

Mr. F. H. Lescher said it had given him such pleasure to meet the students that afternoon that he had requested the President to let him say a few words. A meeting of that kind carried him back to the days a long time ago, but there was a slight difference between the meetings in the old days and the present, in that they were nowadays enlivened by the presence of ladies, whereas in his day they had not that pleasure. He had no doubt that the fighting, as it were, with the ladies in these days made the gentlemen work harder, but he was sure they would all welcome the presence of the ladies in the School of Pharmacy, just as they were welcomed as competitors in the business world. Mr. Lescher then went on to congratulate those who had won medals or certificates, and said he believed students were obliged to work a great deal harder now than in his day—certainly the expanse of subjects was wider. There was present in that room the second man to win the Pereira Medal, and he believed that gentleman would agree with him when he stated that though the students of the old days worked hard, it was necessary for the students of to-day to work even harder. And now he would like to say a few words of welcome to the new President—Mr. Atkins. He believed this was the first time that he had presided at a public function of the Society, and they all welcomed him amongst them. They were proud to have known him and honoured him for so many years, and they were now proud to see him in the Presidential chair. A good many of those present had known Mr. Atkins for a great number of years; they had admired his power of eloquence and his work for pharmacy, and he had no doubt that if the members of the Society in the City could know anything of the secrets of the committees and the Council meetings, they would find that he was esteemed there as much for his wisdom in council as those outside esteemed him. There was an old Latin saying that he thought was particularly applicable to Mr. Atkins—viz., *Neque semper arcum tendit Apollo.* But it was not in those serious duties and work that they saw the best side of Mr. Atkins; it was when he threw off his mantle of work and took part in those pleasant meetings like the British Pharmaceutical Conference, that he showed the best side of his character, and it was that side that made men love him best. Therefore he was proud to have had the opportunity and the permission to say a few words of welcome to the new President. A few days ago, while reading one of his favourite authors—Tennyson—he came across a passage which he thought aptly described Mr. Atkins. The lines, with which he would conclude, were these:—

> Not only to keep down the base in man,
> But teach high thought and amiable words,
> And courtliness, and the desire of fame,
> And love of truth, and all that makes a man.

The President said he would reserve any acknowledgment of Mr. Lescher's kindly words till a later period. It had been suggested to him that it would not be inopportune that on the present occasion he should make a few observations. He had not written his remarks because, while it might sacrifice exactitude, he preferred to just give a few simple homely words of congratulation and comment on what had transpired that day. He was going to make a big demand on those present, viz., to ask for their enthusiastic support of the Pharmaceutical Society, and to ask that they should be propagandists for the Society in future days. He wished to excite an interest in the minds of the students for Bloomsbury Square. Having during the last thirty years constantly walked through it and continually turned over in memory what he had read and heard about it, he had come to feel an intense interest in the history of "The Square," and he would like to create a similar interest in the minds of the students of the School. Evelyn, in his diary of February 9, 1665, stated that he had dined that day at the house of the Lord Treasurer, the Earl of Southampton, in Bloomsbury, where he was building a noble square. Southampton House, Evelyn considered, stood too low, but had some good rooms, a pretty cedar chapel, a naked garden to the north, and good air. Afterwards this house was called Bedford House and the square Southampton Square, the house becoming the town residence of the Russell family, who erected many handsome houses in the districts now known as Russell Square and Bedford Square. In Queen Anne's reign every house in "The Square" was occupied by some aristocratic family, and Pope spoke of it as a place of fashionable resort, while Pepys, the celebrated diarist, frequently referred to Bloomsbury Square. In the north-east corner of the square stood Lord Mansfield's house, which was sacked by the "No Popery" rioters during the Gordon riots of 1780, and the house was burnt, Lord and Lady Mansfield narrowly escaping. Lord Mansfield had offended the Protestant party of that day because of certain decisions in the Courts which were unpopular, and the pity of it was that not only were Lord and Lady Mansfield maltreated, but a valuable library and a collection of most important papers and legal decisions were lost. "The Square" had also been the residence of many distinguished men, notably Sir Richard Steele, the essayist and friend of Addison, the editor of the *Tatler*, the *Spectator*, and the *Guardian;* Mr. Richard Baxter, the divine; Arkenside, the poet; Sir Hans Sloane, the physician. And in later days (1818) the elder D'Israeli came to live at No. 6, when his son Benjamin was a boy of fourteen years of age. The most interesting thing in regard to No. 6 was the fact that that charming book, 'The Curiosities of Literature,' was written there. Indeed, there was not a single house in Bloomsbury Square that had not been tenanted by distinguished men in the past, and he (the President) would urge upon all who took an interest in "The Square" to think of the great and good and wise men who had lived there, and he hoped that their spirit might in some measure rest upon them. And now he wished to ask the students who were about the leave the School to go to various parts of the country to be loyal supporters of the Pharmaceutical Society, and to become enthusiastic propagandists in its behalf. Why? He could not promise them wealth. He did not think that at any one period of its history pharmacy was a calling that made largely for wealth—there had been wealthy pharmacists, but they were exceptions to the rule—but having chosen pharmacy, he would urge them to prosecute it with energy, make the most of it, and though he could not promise wealth, if they loved their calling, he could promise that they would derive pleasure from their business, an honourable reputation, and a career of usefulness. The old mixed business of a chemist and druggist was gradually losing its mixed character, and was tending more to the scientific and cultured side of pharmacy, and he was sure that those who showed enthusiastic devotion to their calling—he was speaking as an old man—if they could not command wealth, they could, and would, get consideration, honour, and recognition as cultured, intelligent men. He was quite aware that someone would probably say, and perhaps write to him, that it was all very well talking about culture and the higher side of pharmacy, but that the calling had its difficulties—difficulties which required consideration. He was not blind to that fact, but he was sure of this. that the more the pharmacist devoted time and thought to the best and highest interests of pharmacy, the more protected he would be against competition. Competition on the commercial side would ever be present, hence he would commend to the consideration of the students the desirability of cultivating the scientific side of pharmacy. The President then exhorted those present also to cultivate the habit of observation, not only in the pharmacy, but in the world outside, and to reflect upon what they observed. He did not wish to speak sarcastically, but he said it deliberately, that at the present time very few people thought for themselves. Their thinking was done for them, and they accepted their opinions ready made from the papers, not only political opinions, but also their religion, too. He asked, therefore, that those who were about to enter upon their careers would cultivate the habit of observation, and having observed a thing, to patiently reflect upon its meaning, and in that connection he strongly recommended each person to carry and make use of a note-book. He would conclude his remarks by this quotation:—

> "He most lives who thinks most, feels the noblest, acts the best."

And what could he well say further than to finish, as Mr. Lescher had done, with a few lines of poetry? Lowell wrote:—

> There is no wind but soweth seeds
> Of a more true and open life,
> Which burst unlooked for into high soul'd deeds,
> With wayside beauty rife.

Vote of Thanks.

Mr. **Lescher** moved that a hearty vote of thanks be accorded to the President for his able conduct in the chair.

Mr. **Carteighe**, as School Visitor, seconded the motion of his friend and fellow student, Mr. Lescher. He commented on the fact that so few students whose bread and butter depended on their early training retained a warm spot in their hearts for the place where they received that training, but in Mr. Lescher they certainly had one of the few who had retained a great interest in the educational work of the School of Pharmacy. Having referred to Mr. Lescher as one of those gentlemen who, even in his student days, went "On 'Change," Mr. Carteighe congratulated Mr. Atkins on being elected President of the Society and also on the charming way in which he had addressed the meeting that day. He (Mr. Carteighe) had a vivid recollection of addresses of all kinds, but he believed this was the first time that the meeting for the distribution of prizes had taken the form of a pleasant family gathering, so to speak. Mr. Carteighe then made a few genial remarks concerning the proper time for the use of the note-book referred to by the President, and went on to say that it was very gratifying that they had present with them one who, having been a pupil in the School many years ago, retained that pleasure and interest in associating with the younger generation, without which life would not be worth living. He emphasised all that the President had said in regard to loyalty to the Society, and by loyalty to the Society he did not mean loyalty to any particular set of men, but to the symbolical thing that stands for education in pharmacy, that representative of the work that was begun by a number of men in 1841 and 1842, when they founded the Pharmaceutical Society. It was very significant that the first thing they did on founding the Society was to use the Society to educate their apprentices. That was a noble thing to do, and in the process of time the tendency was to make each of the students capable pharmacists, and they, being spread throughout the country, would individually take the place of the so-called historic house and the so-called rich pharmacist, if ever there was one, as the true symbol of pharmacy.

The vote of thanks was accorded with enthusiasm, and the **President** having replied, the proceedings terminated.

NORTH BRITISH BRANCH EXECUTIVE.

Friday, June 26, 1903, in the Society's House, 36, York Place, Edinburgh, Mr. **Peter Boa** in the chair.

Present: Messrs. Boa, Cowie, Cummings, Doig, Dott, Dunlop, Fisher, Giles, Gilmour, Kerr, Mitchell, Naysmith, Storrar, Strachan, and Tocher.

Apologies for absence were intimated from Messrs. Maben, Nesbit, and Spence.

The minute of the general meeting appointing the Executive was read.

The minute of the last meeting of the Executive was read.

The **Chairman** read a statement explanatory of the usual procedure in conducting the business of the Executive.

Election of Chairman.

The **Chairman** said they were already aware that he had expressed a definite desire to retire from the position of Chairman on the present occasion. He had much pleasure in proposing for the office Mr. David Brown Dott (Messrs. J. F. Macfarlan and Co.), F.I.C., F.C.S., F.R.S.E. Mr. Dott had already had experience of a chairman's duties. He had the further advantage of being an Edinburgh man, and had received an expression of the confidence of the electors in the recent election. Another useful qualification was that he was conversant with educational matters, and he was not only a good pharmacist, but also a scientist. He was also thoroughly conversant with the work of the Pharmaceutical Society, and had been for some years a member of the Board of Examiners.

Mr. **Doig**, in seconding the motion, said he regretted that Mr. Boa was retiring. It was very desirable that the Chairman should be resident in Edinburgh, so that he might have a thorough grip of the work. In Mr. Dott they had one who had their unanimous good wishes.

The motion was unanimously agreed to.

Mr. **Storrar** said they should thank Mr. Boa for the manner in which he had conducted the business of the Executive. It was a somewhat nebulous body, but at the same time he regarded it as highly important and useful. Much depended on the tact and wisdom of the Chairman, and he had performed his duties with dignity and success, and had worthily represented them on many occasions. He was glad that, though retiring from the chairmanship, they were still to have him as a colleague on the Executive.

Mr. **Kerr** said he had great pleasure in supporting all that Mr. Storrar had said.

Mr. **Boa** thanked them for their kind expressions and for all the consideration they had shown to him. He had now pleasure in vacating the chair in favour of Mr. Dott.

Mr. **Dott**, in taking the chair, said he accepted it with diffidence, and did not feel sure that he was fitted to discharge the duties. He would have preferred someone more directly engaged in retail pharmacy. He had to thank them for this mark of confidence, and would accept for one term the office to which they had so unanimously appointed him.

Election of Vice-Chairman.

Mr. **Strachan** proposed that Mr. Thomas Dunlop, pharmaceutical chemist, Glasgow, be elected Vice-Chairman. He thought it was desirable to have a Glasgow man, and he did not think there was one more suitable than Mr. Dunlop.

Mr. Doig said he had great pleasure in seconding that proposal and vacating the chair in favour of Mr. Dunlop.

The motion was unanimously agreed to, and Mr. Dunlop accepted and said he hoped he would be able to discharge the duties to their satisfaction.

Welcome to New Member.

The Chairman said he had now the pleasant duty of giving a cordial welcome to the new member, Mr. Giles, who was the President of the oldest pharmaceutical association in the kingdom—that of Aberdeen.

Mr. Giles thanked the Executive for their cordial welcome, and expressed his disappointment that Mr. C. F. Henry had not seen his way to accept nomination for another year.

Thanks to Mr. C. F. Henry.

The Chairman said he regretted the retirement of Mr. C. F. Henry, than whom there was no member with whom he was better acquainted. He had not only taken a large share in all matters which had engaged the attention of the Executive, but in many other things besides the ordinary work of the Executive. He was sure they all thanked him sincerely for his services, and hoped he might be able to come back again.

Appointment of Committees.

It was agreed that:—

> The Chairman and Vice-Chairman, the resident members of Executive, and Messrs. Fisher, Spence, and Storrar be appointed a General Purposes Committee to attend to any business arising between meetings of Executive or remitted to them by the Executive.

It was agreed that:—

> The Chairman, Vice-Chairman, and Messrs. Boa, Kerr, Storrar, Strachan, and Tocher be appointed a Committee for Nomination of Examiners, and to consider any names that may be submitted to them, and to report to a meeting of Executive to be held prior to the meeting of Council in November.

Scientific Meetings.

It was remitted to the General Purposes Committee to arrange for holding scientific meetings in Edinburgh on the third Wednesday of each month, from November to April, inclusive, as in former sesions.

Other Remits.

It was also remitted to the General Purposes Committee to co-operate with the Council and Divisional Secretaries in any steps requiring to be taken regarding the Sale of Poisons or the Pharmacy Bill. The Committee was also instructed to continue the negotiations with the Scottish Universities regarding the education of pharmaceutical students along with the Committee of the Board of Examiners for Scotland.

Delegates to the B.P. Conference.

The Chairman and Vice-Chairman, and Messrs. Cowie, Cummings, Giles, Kerr and Naysmith were appointed delegates to attend the Bristol meeting of the British Pharmaceutical Conference.

The Stamp Acts and Domestic Remedies.

Mr. Doig said there was a matter of considerable importance at the present time, which he thought was worthy of some attention on the part of the Executive. He referred to the action of the Inland Revenue authorities, consequent on the case raised by Mr. Glyn-Jones, in resuscitating certain powers which for a long time had been allowed to lie dormant. He did not look at the matter from a commercial or trade point of view, but from that of public safety. How about cough syrups, cough mixtures, diarrhœa mixture, antibilious pills, and the thousand and one home remedies that were to be found in every household? If an article was merely labelled "The Mixture," without any indication of the purpose for which it was intended, there would be serious danger that in some case a mixture intended for an adult would be taken from the shelf in some press or cupboard and given to a child, in the mistaken belief that it was the child's cough mixture He thought they should take some steps to point out that there would be public danger if this latest policy of the Board of Inland Revenue was carried out.

Mr. Boa said the public would probably complain if they were made aware that they would not be allowed to put such a label on a mixture as would distinguish one from another. Some well-considered questions in Parliament might have an important effect.

Mr. Cummings said the difficulty was that the law had been laid down by the judges, and the Revenue Department said they had now no choice or discretion but to abide by it.

Mr. Giles said he was not sure that his Association would agree with all that had been said by Mr. Doig. There had been some expressions of opinion to the effect that in the long run the enforcement of the latest view of the law might be to the advantage of chemists.

After further discussion, in which there was a general agreement with the view stated by Mr. Doig, he moved:—

> That in the interests of public safety, the Council be respectfully asked to take into consideration the present action of the Revenue Department with reference to the labelling of domestic remedies and their liability to stamp duty.

This was seconded by Mr. Tocher, and unanimously agreed to.

This was all the public business.

MAJOR EXAMINATION QUESTIONS (LONDON).

CHEMISTRY.

Time allowed, Three Hours.

Six Questions only are to be attempted, and of these, at least two must be taken from Part II.

PART I.

1. 0·940 Gm. of a mixture of the chlorides of potassium and sodium when treated with sulphuric acid yielded 296 C.c. of gas measured at 0° C. and 760 Mm. bar. Calculate the relative numbers of molecules of the two chlorides present in the mixture (K 39·1, Na 23, Cl 35·4).

2. State what you know of the chemistry of the changes that take place during the exposure, development, and fixing of an ordinary photographic negative.

3. Describe the methods which are used for the manufacture of potassium cyanide. What impurities are to be expected in this salt and how are they detected? How would you prepare pure potassium cyanide? By what steps would you prepare cyanogen from potassium cyanide?

4. Starting from quartz how would you prepare silicon, sodium silicate, a solution of silicic acid, silicon chloride, ordinary glass? Describe the properties of the first four of these products.

5. Explain how each of the following reagents is prepared:—Fehling's solution, ammonio-nitrate of silver, Nessler's reagent, ammonium sulphide, microcosmic salt. Explain the reactions involved in the preparation and use of these reagents.

6. Explain the process you would employ for preparing any four of the following substances:—Sodium nitrite, sodium metaphosphate, barium sulphide, cuprous iodide, stannic chloride, potassium persulphate.

PART II.

7. How is isomerism to be explained in the following cases:—(*a*) the four monochlor substitution compounds of toluene, (*b*) glucose (dextrose) and fructose (levulose), (*c*) the two naphthols, (*d*) methyl cyanide and isocyanide? By what reactions would you distinguish between the isomers in each case?

8. Give *working details* for the laboratory preparation of aniline. Starting from aniline how would you prepare acetanilide, methyl aniline phenol, quinone, diazobenzene chloride?

9. The following terms are met with:—(*a*) glycerine, glycerol, glyceryl, (*b*) quinol, quinone, quinine, (*c*) amide, amine, (*d*) benzene, benzine, benzyl, (*e*) ethylene, ethylidene. Explain clearly the significance of the different terminations in each of the cases.

10. State *in outline* what is known regarding the chemical structure of the alkaloids, and describe in particular the synthesis of conine.

PHYSICS.

Time allowed, Three Hours.

Only Six Questions to be attempted

1. Describe the construction of a delicate balance, explaining the conditions necessary for sensibility and accuracy. How would you find the weight

of a body if you had to work with a balance having unequal arms, the beam being horizontal, however, when both pans are empty?

2. Two hollow cubical vessels, having edges 10 Cm. and 4 Cm. respectively, are filled with air at 760 Mm. pressure. If all the air from the larger vessel were pumped into the smaller one, what would be the increase of internal pressure upon one side of the smaller cube?

3. Give a short description of the experiment you would make to ascertain the latent heat of steam, and explain what the number 537 which is given for this value means. How many grammes of steam at 100° C. would be required to raise the temperature of 1,200 Gm. of water from 15° C. to 90° C.?

4. If a thick plate of glass be placed obliquely between an object and the eye of the observer, will the apparent place of the object be altered by the glass? Draw a diagram to illustrate your answer.

5. A solid body has a volume of 80 C.c. Immersed in a fluid of specific gravity 0·8 it weighs 170 Gm. Find the specific gravity and the weight of the body.

6. How do you explain the fact that, when once the process of rusting has started, a tinned iron vessel rusts much more rapidly than a similar one of iron galvanised with zinc?

7. If you wish to charge a six-cell secondary battery with a current not exceeding 5 ampères, what arrangements would you have to make if the source of current were the electric mains with unmarked poles and a pressure of 100 volts? Assume the mean voltage of each cell during the experiment to be 1·8 volts.

8. Give a general account of the principles of wireless telegraphy and describe the apparatus required.

BOTANY (Theoretical).—A Paper.

Time allowed, Two Hours.

Not more than five questions are to be attempted.

1. Describe the development and give an account of the physiological importance of intercellular spaces in plants.

2. Explain clearly what is meant by a parasite and a saprophyte. Describe the action of the former upon a plant cell, and illustrate your answer by a special consideration of either *Botrytis* or *Pythium*.

3. Explain the floral mechanism to ensure pollination found in two of the Orders:—Compositæ, Leguminosæ, Violaceæ, or Iridaceæ.

4. Describe carefully the structure of a bud in a Dicotyledon, and explain the changes it undergoes in the course of transformation into a shoot.

5. Compare the strobilus (or cone) of one of the Lycopodinæ with a typical flower. Upon what grounds are the structures considered homologous?

6. Give an account of the chief excretory products in plants, and explain briefly how the plant gets rid of them.

BOTANY (Theoretical).—B Paper.

1. Describe the structure and development of an archegonium, and compare the structures which correspond with it in a Gymnosperm and an Angiosperm.

2. What methods would you adopt to prove the statement that Respiration in the Plant and in the Animal are substantially identical?

3. Give a general account of the adaptations seen in plants which adopt a climbing habit.

4. Explain the conditions necessary for growth, and draw a diagram of a plant to show the regions in which growth is taking place.

5. Discuss the structural peculiarities found in Aquatic plants, giving some account of their physiological significance.

6. Describe the structure of the gynæcium in two of the Orders Solanaceæ, Umbelliferæ, Papaveraceæ, Primulaceæ.

MATERIA MEDICA.—A Paper.

Time allowed, One Hour.

Two questions only to be answered.

1. Describe the methods of collection and characters of the different varieties of Opium. What tests would you apply in order to determine their freedom from adulteration, and what are the relative values of the varieties you mention?

2. Mention the principal constituents of the following oils:—Clove Peppermint, Eucalyptus, and Lemon. Give general methods by means of which they may be quantitatively determined.

3. Name the active principles of any Solanaceous drugs with which you are familiar. State which drug you would select for the preparation of each of the official principles you mention, and outline a process which might be used for the extraction of any one of them in a state of purity.

MATERIA MEDICA.—B Paper.

1. Summarise your knowledge of the active constituents of the following drugs:—Rhubarb, Cascara Sagrada, Senna, and Aloes.

2. Give a short account of the principal Cinchona barks met with in commerce, and show how they may be distinguished from each other. Mention their active principles and broadly indicate the difference in composition of the total alkaloid obtained from each.

3. What do you know of the composition of the official fixed oils? Describe the chief tests employed in their examination.

PRACTICAL BOTANY.

Time allowed, One Hour and a Half.

1. Prepare and mount one transverse section through the petiole of A. Leave your section together with a lettered drawing.

2. Write a short account of the structure of B and C.

3. Identify the microscopic preparations D, E, and F.

PRACTICAL MATERIA MEDICA.

Time allowed, One Hour and a Half.

1. Identify the drugs provided. Carefully state on what features you base the identification in each case.

2. Prepare (and leave for inspection) two sections showing the structure of the drug provided. Illustrate your remarks by means of a lettered sketch. Identify any cell contents present, and state the methods you employed for their identification.

MARTINDALE MEMORIAL COMMITTEE.

Thursday, June 25, 1903, at 16, Bloomsbury Square, W.C., Mr. Michael Carteighe in the chair. Present: Mr. Gulliver and Mr. G. S. Taylor.

The minutes of the previous meeting were read and confirmed.

Several letters of apology for non-attendance were received.

The Treasurer reported that after having paid Mr. Taubman for the bust and for the die for the proposed pharmacy medal and certain incidental expenses, there was a balance of a little over £60.

The committee resolved,

> 1. That the Treasurer be authorised to arrange with Mr. Taubman for providing a suitable pedestal for the bust.
>
> 2. That the Council of the Pharmaceutical Society be asked to accept the Martindale Medal, and to award it as a silver medal in pharmacy in connection with the pharmacy course of the Society's School of Pharmacy. Further, that the Council be asked to accept the balance of the fund in trust, with a view to ensure the annual award of the medal in perpetuity.
>
> 3. That, subject to the approval of the Council, the bust should be unveiled and formally presented, with the medal die, to the Council, through its President, at the inaugural sessional meeting on October 1, 1903.

NORTHAMPTON CHEMISTS' ASSOCIATION.

MONTHLY MEETING.

Friday, June 26, 1903, at the Black Boy Hotel, Wood Hill, Northampton, Mr. Evan C. Ashford, Vice-President, in the chair.

After a short discussion, the meeting decided that the meetings of the Association should be discontinued during the summer months, but the hope was expressed that an excursion might be arranged.

It was decided to place the views of the Chemists' Association upon the matter before several influential members of the Northampton Chamber in case the subject of the sale of poisons was brought forward.

Medicine Stamp Duty.

Councillor Fred Ashford moved the following resolution:—

> That this meeting of the Northampton and District Chemists' Association urges the Pharmaceutical Society to do all in its power to influence opinion in Parliament to secure the removal of such a serious inconvenience and irksome restriction as the imposition of the Stamp Duty upon small quantities of familiar household remedies, such as penny boxes of liver pills, antibilious pills, etc., which have been universally sold, without payment of duty, by chemists for more than a hundred years; this meeting believes, further, that the recent decision will constitute a very great disadvantage to the poorer classes of the community, who will in future have to pay 2½d. for a 1d. article.

The resolution was carried unanimously.

Congratulations to Councillor Ashford.

Mr. W. McKinnell and other members tendered congratulations to Mr. Fred C. Ashford upon his election to the Northampton Town Council during the month.

The vote was carried with much heartiness.

Councillor Ashford, who was enthusiastically applauded, gracefully replied to the vote.

EDINBURGH DISTRICT CHEMISTS' TRADE ASSOCIATION.

ANNUAL MEETING.

Friday, June 26, 1903, in the Pharmaceutical Society's House, 36, York Place, Edinburgh, Mr. W. S. Glass in the chair.

Messrs. A. J. Clark and Thomas Stephenson, Edinburgh, were elected members.

Report of the Committee on Poisons.

The Secretary reported that he had received an acknowledgment from Mr. Richard Bremridge, of the resolution anent the Report of the Committee on Poisons.

A letter from the Federation of Local Associations was read in which were suggested certain lines of action on the same subject, including the sending of a memorial to members of Parliament, so as to pave the way for correspondence or personal interview. It was also suggested that a local Watch Committee might be appointed. Another point, touching suggestions for enhancing the value of the Federation, was remitted to the Committee.

The Chairman said the idea of sending a letter to M.P.'s was a good one, and they might have joint letters to each of the members for the four Edinburgh Divisions.

Mr. Boa said the Bill they had been anticipating was evidently to be introduced shortly in the House of Lords, and perhaps they might have to take some steps shortly, but not immediately. It would be better to wait, as sending anything just now might be confusing, and it was inadvisable to send too much literature to M.P.'s.

Mr. Macpherson said it might just irritate M.P.'s to send them any communication just now. He did not think there was any chance of a Bill in the House of Commons this year.

The Chairman said it might not be possible to do anything in regard to the Poison Committee's report, and that was the only matter dealt with in the letter. Had it been the Pharmacy Bill they might have done something in educating M.P.'s. He thought they had been far to long in doing anything. They had been waiting anxiously for advice from headquarters as to what was to be done, but he was afraid they would wait a long time before they got any advice from them.

It was agreed that no action should be taken meantime.

Annual Report.

The Honorary Secretary, Mr. C. F. Henry, read the annual report, which indicated that there was an increase of four in membership, and summarised the matters which had occupied the attention of the Association during the year.

The Chairman, in moving the adoption of the report, said the most important question which had occupied their attention during the year was that of territorial representation on the Council of the Pharmaceutical Society, while in the department of trade politics they had considered the important question of how to mitigate the evils of over-competition.

Mr. Boa seconded the motion, which was unanimously agreed to.

The Honorary Treasurer, Mr. R. L. Hendry, submitted the financial statement, which indicated a balance in hand of £39 11s. 3d.

On the motion of the Chairman the statement was adopted.

The P.A.T.A.

The Secretary read a letter from the Secretary of the P.A.T.A. asking the Association to undertake to canvass those who were not members of the P.A.T.A., and also to collect overdue subscriptions.

It was the unanimous opinion of the meeting that it would not be advisable to accede to the suggestion of the P.A.T.A.

Medicine Stamp Duty.

Mr. C. F. Henry said he had received a great many communications from members regarding what was to be done in view of the recent decision regarding liability to stamp duty of common articles which had hitherto been exempt. There was still a good deal to be decided in the matter of labels and liability. One chemist, who had at once sent up several labels to see which were liable, had found that while "Worm Powders" and "Chilblain Liniment" were liable, "Nature's Liniment" was not liable. "Wee Worm Lozenges" were also liable. "The Mixture (special)" was marked liable to duty. "Bronchial Cough Mixture" was liable, but "The Blood Mixture" was not. One report stated that "Liver Pills" was not liable, but the latest decision was that it is. One curious case was that of the following label, "Chemical Food or Compound Syrup of the Phosphates of Lime, Iron, Sodium, and Potassium—this valuable preparation has been so successfully used as a general tonic that it has received the name of Chemical Food." That was marked liable to duty. Merely giving the ingredients as in the label quoted above was not enough, they must have a reference to a published work in which the formula occurred.

Mr. Macpherson said it was enough if the formula was distinctly stated.

Mr. Henry said the department would not pass such a label as "Ammoniated Liniment of Opium (Dr. Bow)," although it was passed five or six years ago. "Chilblain Liniment," "Neuralgic Application," "Application for Corns," "Antibilious Pills (Thomson)," and "Aperient Pills (Hamilton)," were marked liable. "Chemical Food according to Dr. Parrish's Receipt," was marked not liable. He had asked the Inland Revenue a question, in the interests of poor customers as well as in the interests of chemists, as to how they could sell a pennyworth of such duty-liable pills as Hamilton's or Thomson's. He had pointed out that it would be impracticable to publish the formula on the label, and it would be very hard if the public had to pay twopence-halfpenny for a penny box of pills. The department did not answer the question, but said, "I am to explain that in practice the Board do not object to a licensed vendor breaking open a duly stamped packet of pills and powders and retailing them without additional duty, provided they are sold merely wrapped up in a paper which is not sealed, gummed, or tied with string, or fastened in any other way." He thought that if such an answer as that was read out in Parliament it would show the absurdity of the whole affair They should make an effort to have the law amended so that it would be carried out in the interests of the public as well as in the interests of the Revenue.

Mr. Boa said he did not think they should do anything precipitately. It was possible the present confusion might ultimately work out to their advantage if they could adapt themselves to it without getting into loggerheads with the public. Of course, the pennyworths of pills question was chiefly for the public to consider rather than the sellers. If the public had to pay for a three-halfpenny stamp on a penny box of pills they might get a question put in Parliament and elicit some information as to the powers of the Inland Revenue. He would not at present take any steps to get the old order of things continued, because in many ways it might be to their advantage to let the thing go. With regard to "Hamilton's Pills," "Gregory's Pills," "Christison's Pills," he thought such a description was quite in keeping with the requirements of the Inland Revenue if they indicated the formula which was known to everyone in the trade, and was to be found in all books of reference on the subject. He did not believe any Court would for a moment listen to any other view.

Mr. Rowland remarked that he did not think there was a formula for Gregory's Pill, but Mr. Boa replied that it was now in the B.P.

Mr. R. L. Hendry said it was desirable that they should follow some uniform plan in quoting the authorities for formulæ on their labels, or they would have customers refusing to take a preparation which was stated as "Squire" on the ground that they wanted the "B.P." kind, although both formulæ might be identical.

The Chairman said they might utilise the stocks of labels they had by using a rubber stamp to put on them the authority for the formula.

Mr. Stephenson said they might get strip labels printed to put on along with their present labels, but it was suggested that this would not be permissible, as the Revenue said the formula or authority must be stated in the label.

The Chairman said he was inclined to think that the change in tactics by the Inland Revenue would ultimately be to their advantage. Companies who were not qualified chemists would not be allowed to sell these preparations at all without a stamp, and he did not think they would do so. He thought they should therefore put themselves in the position of supplying them as formerly without any stamp. They could then easily supply penny boxes of Gregory's or Antibilious Pills by following some known formula, and the companies would not do that. In that way he thought it would be an advantage to chemists and also to the public.

The subject was then allowed to drop.

Election of Officers.

The following were elected office-bearers for the ensuing year:—W. S. Glass, Chairman; J. H. Forret, Vice-Chairman; Secretary, G. H. C. Rowland, 117, Princes Street, Edinburgh: Treasurer, R. L. Hendry; Assistant Secretary, E. Brindle; and as members of Committee, Messrs. Blenkiron, Boa, Bowman, Henry, Lunan, McBain, D. McGlashan, McLaren, James Nesbit, and Storrar.

On the motion of Mr. Boa, a very cordial vote of thanks was awarded to Mr. C. F. Henry, who retired from the office of Secretary, after eleven years' service.

Mr. Henry, in thanking the meeting, said he had greatly enjoyed the work, and made many friendships which would be life-long. In the meantime he had been medically advised to avoid outside work.

On the motion of Mr. Henry, a vote of thanks was awarded to the Pharmaceutical Society for the privilege of meeting in the Society's House.

HALIFAX AND DISTRICT CHEMISTS AND DRUGGISTS' ASSOCIATION.

SPECIAL MEETING.

Monday, June 29, 1903, at the Old Cock Hotel, Halifax, Mr. J. Briggs, President, in the chair.

The President stated they were met simply to talk over the provisions of the Stamp Act, which came into operation on September 30.

A somewhat lengthy discussion ensued, in which Messrs. Tiffany, Black, Hebden, Hodgson, and others took part. The meeting was eventually adjourned without any definite conclusion being come to, but it was decided to obtain, if possible, before the next meeting, a satisfactory solution of the doubtful points that had been raised.

POISONING CASES AND INQUESTS.

The deaths from poisoning reported during the seven days ended Wednesday, July 1, 1903, numbered seventeen, thus:—

Poison.	Accident.	Suicide.
Alcohol	1	—
Belladonna Liniment	1	—
Carbolic Acid	—	1
Chloroform	2	—
Coal Gas	—	1
Headache Powders	1	—
Hydrochloric Acid	—	2
Hydrocyanic Acid	—	1
Laudanum	1	1
Ptomaine	1	—
Strychnine	1	1
Yew Leaves	1	—
Kind not stated	—	1
Total	9	8

Alcohol.—Excessive drinking caused the death, from syncope, of a Cheltenham woman.

Belladonna Liniment.—A girl at Stourbridge died from drinking a quantity of belladonna liniment in mistake for medicine.

Carbolic Acid.—This was the poison chosen by a woman at Cilfynydd who committed suicide.

Chloroform.—This anæsthetic caused the deaths of a woman at Lambeth and a man at Northampton.

Coal Gas.—A Leith cooper poisoned himself by closing all the windows and door of a room and turning on the gas.

Headache Powders.—A woman died at Leeds from gradual poisoning, caused by the prolonged and frequent use of "headache powders."

Hydrochloric Acid.—A woman at South Lambeth and a youth at Smithills committed suicide by taking spirit of salt.

Hydrocyanic Acid.—A woman at St. Pancras died from prussic acid poisoning, self-administered.

Laudanum.—A man died at Leicester from an accidental overdose of laudanum, and a Sheffield joiner committed suicide with the same drug.

Ptomaine.—A girl at Normanton died from ptomaine poisoning. The cause was suspected to be "a halfpennyworth of sweets."

Strychnine.—A woman at Ballymena, Ireland, poisoned herself by taking some vermin-killer containing strychnine. At the resumed inquest on Tuesday, on the body of H. Harris, carpet designer, whose death was reported in the *Pharmaceutical Journal* of June 20 ([4], **16**, 846), a verdict of "death from misadventure" was returned. Deceased had been supplied with strychnine in mistake for morphine by J. A. Atkin, a qualified assistant in the employ of Messrs. Vines and Froom, Aldersgate Street, E.C. When the mistake was discovered morphine was promptly supplied as an antidote, but death afterwards resulted. Evidence was given of the good character and general carefulness of Mr. Atkin, and Mr. Froom stated in evidence that this was the first mistake that had occurred in the business, though his family had been in business for three generations—103 years. The coroner and jury expressed sympathy with Messrs. Vines and Froom, and Mr. Atkin.

Yew Leaves.—An inmate at a Northampton lunatic asylum accidentally poisoned himself by eating yew-leaves.

Kind not Stated.—A young woman at Crieff was found dead with a vial, which had contained poison, beside her.

Non-fatal Cases.—The poisons used by attempted suicides were carbolic acid (2), hydrochloric acid (3), laudanum (2), and oxalic acid. In a case of attempted poisoning at Newport, Isle of Wight, it was shown that a working foreman, in the employ of the Corporation, had, on request, poured some carbolic disinfectant into a bottle labelled "cordial." The Mayor commented on the danger of following such a course.

LEGAL INTELLIGENCE.

Medicine Stamp Duty Acts.

A Limited Company Prosecuted.

On Thursday, June 25, 1903, at Marylebone Police Court, before Mr. Denman, Needhams, Limited, were prosecuted by the Board of Inland Revenue for selling unstamped certain preparations liable to duty. The case was briefly reported in the "Inset" to last week's *Pharmaceutical Journal.*

Mr. Denniss prosecuted, and Mr. Bonsey (instructed by Messrs. J. Mote and Son) appeared for the defendant.

Mr. Denniss said there were eleven summonses, but the evidence would be the same in each case. He would, however, discuss each remedy separately. The defendants were a limited company and the articles were sold at 98, High Street, Notting Hill Gate, W. The liability of the preparations to duty arose through the Act of 52 George III., cap. 150. Mr. Denniss then dealt with the Schedule and the general charge of duty in the Act specified. Some of the articles, he continued, were liable because they were said to be "Needham's," and in a price-list issued by the firm medical advice was given wherein all the articles in question were recommended as beneficial for some complaint. "Needham's Blood Purifier" was recommended for pimples and boils.

The Magistrate said the term "Blood Purifier" was a *primâ-facie* statement that the remedy purified the blood, and that, he thought, was a recommendation for the cure or relief of an ailment.

Mr. Denniss said the next preparation was "Needham's Chilblain Liniment." The medical advice held out the liniment as being beneficial for chilblains. "Needham's Chilblain Liniment" was liable on the ground alone of the proprietary right claimed for it. The next article, "Needham's Chlorodyne," was recommended for cholera, and was referred to in the price-list as chlorodyne, "special brand, own make."

In reply to a question by the magistrate, Mr. Denniss said that the general charge of duty was alternative. If the vendor claimed proprietary rights, it was sufficient to render the article liable, even if he did not hold it out. In the case of "Smith *v.* Mason," the defendants were a limited company at Newcastle, who issued a price-list in which Dr. Gregory's Powder was recommended for acidity, etc. The label stated that the preparation was compounded according to the formula of Dr. Gregory, of Edinburgh. The other eight articles in the present case were:—"Needham's Catarrh Salts," recommended for hay fever; "Needham's Cod-Liver Oil Emulsion," recommended for rickets; "Compound Tannin Gargle for Aphonia," "Quinine and Iron Tonic" (useful in treatment of abscesses and epilepsy); "Ammoniated Tincture of Valerian," for hysteria; "Needham's Diarrhœa Mixture" (for diarrhœa and dysentery); and Tincture of Rhubarb (useful in early stages of diarrhœa). All the preparations were held out as beneficial for some ailment, and, therefore, all liable to be stamped. He did not know what the defence was, but if Mr. Bonsey was going to plead the third exemption he would like to say something about it.

Mr. Bonsey replied that, in respect to one or two of the preparations, there was no defence; as to others there was no holding out, and some were within the exemption.

Mr. Denniss then dealt with the third exemption, emphasising the fact that only those chemists who had passed a regular apprenticeship could benefit by it. The defendants were a limited company, and it was impossible for the company to have served a regular apprenticeship, and therefore impossible for them to come within the exemption.

Thomas Jameson, an officer of Inland Revenue, gave formal evidence of the purchase of the preparations on July 24 and February 7 and 14 last.

Mr. Bonsey elicited the following facts in cross-examination: That the Board, for some years, had not insisted upon some things like cough mixture being stamped; that they had recently made more stringent regulations since the case of Farmer *v.* Glyn-Jones. Mr. Bonsey quoted Mr. Stoodley's letter that the new regulations would not be enforced until September 30 next. While this was no defence legally, he said, it was strong evidence in support of mitigation of penalty.

Mr. Denniss said that the Revenue were not proceeding to-day for anything they had not claimed for the last twenty years.

Mr. Bonsey, in opening the case for the defence, said the Act under consideration was 100 years old, and only within the last few years had the Revenue authorities displayed the vigilance they were now showing in its administration. He did not say they were wrong in doing so, but they were now putting a more stringent interpretation on the Acts than they had put upon them in former years. As a result of this many chemists who for years had conducted their business without the slightest objection were now in difficulties because of the different views taken by the authorities. The object of the Acts was to strike at the inventor of a medicine. If the person who launched the medicine claimed a monopoly or a proprietary right, then he had to pay the duty. The main object of the Act was to hit that class of person, and the duty was payable by the original or first vendor. It was clearly never contemplated that a perfectly well-known preparation should become dutiable if the chemist recommended it for some simple ailment, provided the original vendor had never held it out. Hartshorn and oil had been for years a common remedy for sprains. If a chemist sold it there was no liability, because the original vendor never made it a dutiable article. Section 2 of the Act 150 George III. made it an offence to sell a dutiable article. What was a dutiable article? The schedule to the Act gave a list of proprietary articles which were considered dutiable, and then the schedule went on to say "and also all other pills, powders," etc. When once the liability to duty was established, it could only be removed by coming within certain exemptions at the end of the schedule, and in this case he relied upon what was known as the 3rd Exemption. It had been said that the defendants could not come within this exemption because they were a limited liability company. If that were so, no limited company could be summoned under the Acts, and they must summon the actual seller, as under the Pharmacy Act. If that was so, then he would take that objection to the proceedings at once. If that was not so, then he was entitled to the benefit of the exemption. The Act was 100 years old, and the Legislature never contemplated the formation of limited companies, therefore no reference was made to them in the Act. The appeal case of the Pharmaceutical Society *v.* the London and Provincial Supply Association, Limited, had shown that limited companies were entitled to carry on the business of a chemist and druggist. A "person" in the Pharmacy Act did not include a limited company, and a company could not be a qualified chemist. When the Acts were passed the Legislature had in mind the individual, and it would be grossly unfair to say that limited companies were liable under Section 2, but were not entitled to avail themselves of Exemption 3. In the case of Smith *v.* Mason this point was never taken; Exemption 2, not 3, was relied upon, and no evidence was called as to who sold the article. Another point in Smith *v.* Mason was that the company were not licensed to sell patent medicines, but in the present case the Inland Revenue actually licensed Messrs. Needhams to sell these proprietaries. Not only was the managing director (Mr. Thomas Needham) a registered chemist, but the manager of the shop was also a duly qualified chemist and druggist. The articles, therefore, were sold entirely under the control of a chemist and druggist—*i.e.*, a chemist and druggist within the last clause of the exemption.

The Magistrate: But it applies only to a chemist and druggist "who hath served a regular apprenticeship." If a man is an ordinary chemist and druggist I take it he would come within the exemption.

Mr. Bonsey said that if a man had not served a regular apprenticeship he would not be a chemist and druggist. A hundred years ago there was no Pharmacy Act, and therefore the chemist was described as a man who had served, etc. Now his qualification was higher; he served an apprenticeship and afterwards passed an examination. He would show, he continued, that both the managing director and the manager of the shop were duly qualified chemists. The judgment in the case of Farmer *v.* Glyn-Jones showed clearly that if the original or first vendor of a preparation had never recommended it and if it was a well-known preparation, then a chemist could recommend and sell it without liability. They must apply the circumstances to the present time. Dealing with the labels Mr. Bonsey said he was not prepared to defend "Blood Purifier," "Diarrhœa Mixture," "Chilblain Liniment," and "Compound Tannin Gargle." The cases were, however, very trifling, and he thought a small penalty would meet the case.

The Magistrate inquired how much longer Mr. Bonsey would take to conclude his arguments, and upon Mr. Bonsey replying that to go exhaustively into his case would take a good deal of time, the Magistrate intimated that the case could not possibly close that day.

After a short conference between Mr. Denniss and Mr. Bonsey, Mr. Denniss intimated that the defendant was prepared to plead guilty to all the summonses, and suggested a fine of £1 in each case.

Mr. Bonsey said he agreed to this in order to shorten time and spare expense. He could not defend the four labels mentioned, but in regard to the others he was prepared to show either that they were not liable or that they came within the exemption.

The Magistrate said that he was sorry the case had been interrupted, but without prejudging the case he could say that he was against Mr. Bonsey on the company point, and did not think he could get out of his liability. The case was a question of the liability of a company to stamp duty, and was not how far there could be a question of *mens rea.* The people who complained of the duty were the company and not the persons who were selling at each shop. The company were undoubtedly liable and must pay the penalty.

Insufficient Stamping.

On Wednesday, July 1, 1903, at Marlborough Street Police Court, London, Sidney Constance, chemist and druggist, 64, Haymarket, was summoned before Mr. Plowden for selling a bottle of medicine liable to stamp duty insufficiently stamped, and thus incurring a penalty of £10. Mr. Denniss prosecuted on behalf of the Inland Revenue authorities, and Mr. Beck appeared for the defence.

Mr. Denniss said a bottle of "Matico Injection" supplied by Mr. Constance to an Inland Revenue officer, for which 3s. 6d. was charged, bore only a threepenny stamp.

Thomas Jameson, an Inland Revenue officer, bore out Counsel's statement, and said the bottle was purchased on April 4.

Mr. Plowden (looking at the bottle produced) asked, was Matico the same at Rheumatico?

Cross-examined: Witness said that he had no receipt. He did not inform the assistant who he was. The preparation was a perfectly well-known one, selling from about 2s. to 2s. 9d. retail.

Mr. Beck pointed out that the defendant was placed in a difficult position, owing to the length of time elapsing between the date of purchase and the communication from the Inland Revenue, as nothing was said by the officer as to the object of purchase. Nothing was heard of the affair until April 30. The Inland Revenue authorities afterwards suggested that he should pay a compromising penalty. Mr. Constance did not agree with that view, and was consequently before the Court, as he declared he had not committed any breach of the Act, or attempted to do anything of the kind. Mr. Constance had not the slightest intention of charging more than the proper price for which articles were stamped. The check till sheet for the day in question appeared to be in favour of the defendant, as it showed purchases agreeing with his contention. He would ask the magistrate to say that, having seen the till sheet and heard Mr. Constance and his assistant on oath, he would come to the conclusion that he was not satisfied that the article had been sold at 3s. 6d., but at 2s. 6d.

Mr. Constance, in the witness-box, stated that he had been in business since 1867, having previously had an establishment at Charing Cross. He had never varied from the rule of selling Matico Injection, which was always in the same sized bottle, for 2s. 6d. It used to be 2s. 9d., but had been reduced by competition. Higher prices were charged if they were called up after about midnight, but no extra charge would be made as early at 9.30.

Sidney Banks, assistant to the defendant, on oath, said that he never, to his knowledge, sold Matico Injection to anyone at 3s. 6d. He had had eight years' experience in various districts, and prices were different at different places.

After some other evidence, Mr. Plowden said he was disposed to think there was some force in what had been said for the defence. If the officer had disclosed his identity that would have been a reasonable and fair thing to do. After he had "bagged his bird" he might have said who he was, and perhaps this prosecution would never have arisen. However, it had to be decided whether 3s. 6d. or 2s. 6d. was paid, and if the officer was honest—and nothing else was for a moment suggested—it was inconceivable that he could be mistaken. There were the facts stated by him, and the defence amounted to nothing but strong improbability. Mr. Constance, he felt sure, only wished to do all that was right, but he must pay a nominal penalty of 10s.

Sale of Food and Drugs Acts.

Iron Pills.

On Wednesday, July 1, 1903, at the South-Western Police Court, London, before Mr. Garrett, Charles Robinson, chemist and druggist, High Road, Streatham, was summoned for selling iron pills deficient in ferrous carbonate to the extent of 66 per cent.

Mr. Young, for the Wandsworth Borough Council, said that, according to the British Pharmacopœia, every iron pill weighing 5 gr. should contain 1 gr. of ferrous carbonate, whereas the pills sold by defendant contained only $\frac{1}{3}$ gr.

Defendant pleaded that he obtained the pills from a most respectable wholesale house, and sold them believing them to be compounded according to the Pharmacopœia.

Mr. Garrett, while believing defendant's plea, said the deficiency was serious, as a person's health might depend upon it. He imposed a fine of £10, and 12s. 6d. costs.

Methylated Soap Liniment.

On Tuesday, June 30, 1903, at the Clerkenwell Police Court, judgment was given in the case of the Islington Borough Council *v.* Boots, Cash Chemists, Limited (see *P.J.* [4], 16, 818).

Mr. D'Eyncourt said that the case against Boots had been remitted to that Court for him to hear the evidence which he had formerly refused to hear. The material point was whether there was evidence of a commercial standard for soap liniment different from the standard of the B.P., and the proposition put forward by the defendants was that they would produce evidence of a different standard, and one so universally known that any person would expect in the natural course to be supplied, as by defendants, with an article different from the B.P. It was entirely a question of fact whether that contention had been established on evidence brought before him. Summarising the evidence, he said a much larger quantity of methylated soap liniment was used than of that made according to the B.P., and in many cases the methylated was always supplied, except in cases of physicians' prescriptions, or unless something indicated that the other was asked for. Some witnesses had stated that they labelled it "methylated," but only one stated that he did so before this case. With regard to the question of price, he found, as a fact, that the cost of the liniment made with methylated spirit was about one-fourth that of the B.P. liniment, and that the retail price was about one-third that of the B.P. liniment. As to the evidence on the other side, they had been told that when soap liniment was asked for it was customary to sell the B.P. preparation. A large number of chemists—very respectable chemists, he might say, although there were not, perhaps, so many mayors of towns and boroughs amongst them—had stated that when soap liniment was asked for they always supplied the standard of the B.P., unless the methylated liniment was required. Others had said that they occasionally supplied "opodeldoc," which was understood to be soap liniment made with methylated spirit. A great deal had been said in the case—and it threw light upon the question, and was not at all irrelevant to the case—about the regulations of the Customs and the contents of the B.P.; this, he thought, somewhat confused the matter. A large number of B.P. articles were neither drugs nor medicines, and a large number were drugs and medicines, and also articles used for domestic and other purposes; such were soft soap, turpentine, etc. It was, therefore, clearly no offence to sell these articles for purposes not medicinal, not made according to the B.P. standard but to a commercial standard, and to that, of course, Section 15 of the Pharmacy Act could not apply. Other things were used purely as medicines. He merely mentioned these regulations as sanctioning the use of methylated spirit in the manufacture of soap liniment and other liniments; no doubt it was so used, but that of itself did not make soap liniment so compounded the liniment of soap prescribed by the B.P. Apart from that section of the Pharmacy Act he supposed there was no reason why it should not be sold or made, and it was quite clear that it was so made with methylated spirit and sold. The Lord Chief Justice had said that if this evidence had been heard, it was highly probable that it would show that the article sold was liniment of soap improperly compounded, and that the defendants had attempted to sell under another name what they had no right to sell. He (the magistrate) could not say what improperly compounded meant, the liniment made with methylated spirit was undoubtedly largely sold. The evidence given came to the same thing as the evidence in the case of Dickens *v.* Randerson. The Judge said what the defendant attempted to prove was that there were two commercial standards of wide difference, a thing which was absurd. That applied to this case, and what he had to consider was how the evidence which had been given applied to this case. The only decision he could come to was that there was no commercial standard for liniment of soap, different from the B.P. The fact that there was a large quantity of evidence to show that the liniment was compounded with methylated spirit and sold as liniment of soap, seemed, in the very words of the Lord Chief Justice, to show that it was liniment of soap improperly compounded, and that defendants had attempted to sell, under another name, what they had no right to sell under that name. It was not open for him to find as a fact anything else, and the proposition made by the defendants that it was so universally known by that name that it was what a person asking for it under that name would get, fell to the ground. If he asked what presumption of law arose when he found that there was no standard different from the B.P., the presumption was that the B.P. was the standard, and there was no alternative but to reaffirm the previous conviction.

Mr. Bramall said the previous conviction was a penalty of £20 and ten guineas costs, and asked for 100 guineas costs now.

Mr. Bonsey asked the magistrate if he thought a penalty of £20 was now a proper one to impose in view of the fact that the defendants had only been doing what a large number of chemists were doing.

Mr. Bramall said he would leave the penalty to the magistrate, but as to costs, he thought Boots ought to pay; they had challenged the decision. The practice had been gradually growing up, and had now got wider, and he was glad that it would now be stopped. The question was, who was to pay the costs, Boots or the ratepayers?

The Magistrate said he would make the penalty £5 and sixty-five guineas costs. He would be pleased to state a case if necessary.

A Deficient Mixture.

On Monday, June 29, John Gale Rodwell, chemist, Eastbourne, was summoned for selling a mixture containing potassium iodide, mercuric chloride, and infusion of quassia, which was deficient to the extent of 78 per cent. of the mercuric chloride ordered.

The Town Clerk said this was a case of great importance. The prescription was made up by Dr. Willoughby, and Mr. Taylor was sent to make the purchase. The medicine received was certified by the Borough Analyst to be 78 per cent. deficient in one of the most essential ingredients. He thought the Bench would appreciate the importance of having the medicine ordered and paid for supplied in accordance with the prescription. Otherwise it might deceive the medical attendant, and the patient might not receive the benefit expected.

The defence was that the smaller quantity of the drug was put in the mixing when dispensing the prescription, from caution lest the dose ordered should prove too large. In addition, it was urged that the mercuric chloride practically cost nothing.

A fine of 40s. and costs was imposed.

West London Police Court.

Dental Employee Charged with Embezzlement.

On Saturday, June 27, 1903, at the West London Police Court, Rene de Layen was charged on remand with embezzling various sums of money belonging to his employer, Mr. W. Valentine Wright, chemist, of 25, The Broadway, Hammersmith.

Mr. Oswald Hanson prosecuted, and Mr. H. Pierron defended. The prosecutor said he engaged the defendant in March, 1901, at a salary of £2 5s., with commission, to manage the dentistry part of his business. He left his employment over a month ago, and since then the witness had discovered serious deficiencies in the accounts. In three different cases the accused (said the witness) received payments from customers—amounting in all to over £10—and did not account for the money in the books.

In cross-examination, the prosecutor said "he presumed the accused was not a qualified dentist." The accused had absolute discretion as regards fees, which ranged from a shilling to five guineas.

In answer to questions, the prosecutor admitted that he had made a mistake as regards one of the charges of embezzlement, and he withdrew that particular case.

Mr. Pierron argued that at the worst the defendant had been guilty of carelessness, due to the distractions of business.

The magistrate committed the accused for trial, accepting bail for him.

High Court of Justice, Chancery Division.

St. Jacobs Oil.

On Thursday, June 25, 1903, an interim order was made by Mr. Justice Swinfen Eady, at the suit of the St. Jacobs Oil Company, Limited, restraining, until the trial of an action or until further order, William E. Geddes from acting as manager or agent of Mrs. Ella M. Geddes and Miss Daisy E. Capon (who are trading as the Gyptican Oil Company), and from carrying on or being interested in the business of a manufacturer or dealer in Gyptican Oil, and from allowing his name to be used in carrying on such business, and also similarly restraining the Gyptican Oil Company (Mrs. Geddes and Miss Capon) from employing the defendant, William E. Geddes, as their manager in the business of manufacturing or dealing in Gyptican Oil.

Edinburgh Court of Session.

Lease of a Chemist's Shop.

On June 25, Lord Pearson disposed of an action by David Watson, chemist, 39, Cartvale Road, Langside, Glasgow, against Archibald Kirkland, Chrisview, Cathcart. The pursuer carries on business at 41, Sinclair Drive, Langside, Glasgow, and the defender is proprietor of a shop at 558, Cathcart Road, at which the pursuer formerly carried on business, and held on lease from the defender for a period of fifteen years from Whitsunday, 1894. The pursuer sold his business at 558, Cathcart Road in February, 1901, to another chemist, the terms of sale including an understanding that the pursuer would arrange with the defender to allow the current lease to lapse, and to grant a new lease in favour of the purchaser. The pursuer averred that the defender's factor and he came to an absolute agreement that the current lease should be allowed to lapse and a new one be granted by the defender in favour of the purchaser of the business. The defender, however, refused to implement that agreement, and the pursuer brought the action to have him ordained to do so. The defender stated that he never agreed to grant a lease to the purchaser, and further said the factor had no authority from him to conclude a contract, and did not do so with the pursuer in the terms the latter averred. His Lordship sustained the defender's plea that the action was irrelevant, and dismissed the action, with expenses to the defender. He held that there were no allegations on record to show that the house factor acted with the authority of the defender, and he was not disposed to hold that a house factor had any implied authority to accept a renunciation of a lease, quoad one tenant, to contract to grant a new lease for a term of years to another tenant.

Hampshire Assizes.

Claim against Mineral Water Makers.

On Tuesday, June 30, 1903, at the Hampshire Assizes, Messrs. Mumby and Co., the well-known mineral water manufacturers of Portsmouth, were the defendants in an action for damages brought against them by Mr. T. J. Thornton, of Southsea, for damages for injury said to have been caused through his having drunk a bottle of soda water of defendant's making, and he alleged negligence on their part in the making of it.

On June 25 it was stated that the plaintiff drank a whisky and soda and immediately afterwards he felt very ill. When the rest of the soda water was analysed it was found to contain particles of coal tar.

Dr. Reid said that the defendant visited his surgery shortly after drinking the soda water; he was then in a state of collapse, and apparently very ill. Witness smelt the remainder of the soda water, and found the odour distinctly nauseous. He also tasted it and found it extremely hot. Cross-examined, the doctor said the coal tar that was found in the soda water was not enough to hurt anyone. In fact, a dose of carbolic acid was sometimes given as a medicine.

Mr. John Moore Murray, who at that time was public analyst for Portsmouth, said he examined the soda water in question and found traces of coal tar, which, in his opinion, was due to the stopper having been brought into contact with the coal tar. He found several small black spots under the rubber, which were of a tarry nature.

For the defence it was explained what elaborate precautions were taken by the defendants to protect their bottles by washing. Any tainted stoppers were immediately destroyed, and all were left for about an hour in hot water.

The Jury found there had been no want of reasonable care on defendant's part, and the action was dismissed, with costs.

NOTES IN PARLIAMENT.

BY OUR PARLIAMENTARY REPRESENTATIVE.

Water Gas.

Questioned by Mr. Sloan as to whether it was the intention of the Government to bring in a Bill this Session similar to the one of last year regulating the supply of water gas and other poisonous gases, Mr. Bonar Law (for the Board of Trade) replied in the negative.

Lead Poisoning.

This subject has again been brought under the notice of the House of Commons in the course of the discussion on the Home Office vote. Sir Charles Dilke observed that though last year showed a gratifying reduction in the figures of lead poisoning, the reduction had not been maintained, and what improvement was manifest was only in the dry processes. His facts were challenged by Mr. Coghill, and, on the other hand, supported by Mr. Tennant, who also bore personal testimony to the cheapness and quality of ware made with leadless glaze which he had bought for his own domestic use. An appeal was made for the appointment of women inspectors in the Potteries, and in this appeal Mr. Asquith joined, asserting that women were the chief sufferers from lead poisoning. In the course of his reply, the Home Secretary observed that his predecessors had not seen their way to place a lady inspector permanently in the Potteries, the view they took being that the services of a limited female staff could best be utilised by stationing them in a central position, and sending them wherever they were most needed. Should inquiry show the necessity, however, for increasing the number of inspectors, he should be quite prepared to consider the matter favourably. He admitted that there was still an unsatisfactory state of things in particular places, but, taking the industries concerned as a whole, there was, he believed, a decrease in the number of cases. He asserted that the special rules had worked well, and he also pointed out that further rules had been adopted as experience showed them to be desirable. Some of these rules were established by the award of the umpire in the arbitration in 1901. Others had been adjourned, and the arbitration of Lord James with respect to them was about to be resumed. He added that he had every reason to believe that the method of insurance in connection with these industries would be greatly extended as time went on.

Opium in China.

In the House of Lords, on Tuesday next, the Bishop of Durham will move a resolution declaring that British action in respect of the importation of opium into China has had disastrous results in the spread of the opium vice in China, "where it is now a great national evil," and is generating feelings of hostility to British subjects and interests in the minds of the Chinese people. The resolution will also declare that it is unworthy of a great nation to be commercially interested in the supply of the drug to China.

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

Glasgow Bowlers.—The draw for the semi-final Burroughs-Wellcome prize has resulted as follows:—Mr. Cairncross or Houston *v.* Mr. Moir or Watson; Mr. Walker *v.* Mr. Wallace.

International Congress of Hygiene.—Particulars of the eleventh International Congress of Hygiene and Demography to be held in Brussels from September 2 to 8, 1903, with the travelling and hotel arrangements, may be obtained from Dr. Paul F. Moline, Hon. Secretary British Committee, 42, Walton Street, Chelsea, S.W.

Fire.—On Tuesday afternoon the Wolverhampton Fire Brigade received a call to the shop of Mr. Phillips, chemist, of Lichfield Street. On their arrival the men found that a quantity of straw and cases were on fire. The flames were extinguished before much damage had been done, and without bringing the steam engine into use.

Poisoning Flowers.—It is reported that considerable indignation has been caused in the district of Worsley, near Manchester, by the action of some person, or persons, in poisoning certain flowers in local gardens belonging to cottagers, who take a great interest in horticulture and compete for prizes offered by the Worsley Agricultural Society. It is stated that last summer similar outrages were perpetrated in the same neighbourhood.

The Society of Chemical Industry.—The annual meetings of the Society of Chemical Industry will this year be held at Bradford from July 15 to 17. It is anticipated that between 250 and 300 members will attend the annual meeting, which has not been held in Yorkshire since 1895, when it took place in Leeds. Next year the meeting will take place in New York. The general meeting will be held on July 15, and the following day will be devoted to visits to the more important manufacturing concerns of Bradford. The third day will be devoted unreservedly to pleasure-seeking.

Where to Get Commercial Information.—The *Board of Trade Journal* this week publishes on its cover a conspicuous notice referring to a page within all who want information as to tariffs, Customs revenue, imports and exports, growth and movement of population, wages and hours of labour, imported food supplies, and cognate matters in regard to the United Kingdom, the Colonies and India, and foreign countries. The page to which the inquirer is referred contains a list of recent Blue Books, their prices, and the particular pages at which the information in question is to be obtained.

Spurious Teething Powders.—At Nottingham, on June 24, a man named Geo. Dignam was charged with obtaining money by false pretences from two local shopkeepers. He posed as the agent and traveller for Messrs. Wood and Co., Sheffield, and sold teething and fever powders represented to have been made by that firm.—Mr. Ambrose Middleton, chemist and druggist, of Nottingham, who had analysed the powders, said they were made of granulated sugar with a little vegetable colouring matter. They had no medical properties, and were perfectly harmless.—A fine of 30s., or fourteen days' hard labour, was imposed.

From Dispenser to Postman.—At the Hampshire Assizes, Winchester, on Monday, Charles Cameron Macgregor, described as a dispenser, was charged with stealing a letter containing a postal order at Itchen, Southampton. In May last the prisoner was acting as auxiliary postman, and was entrusted with the delivery of a letter, which contained a postal order for 10s., which a Devonport sailor had sent to his mother at Southampton. This he appropriated, and the cashing of it having been traced to him, he was sentenced to twelve months' hard labour. Two other charges of a like nature were withdrawn.

Society of Arts.—The Society of Arts held a conversazione last Tuesday night in the gardens of the Royal Botanic Society, Regent's Park. Sir William Preece, the Chairman, and other members of the Council received the guests. The grounds were illuminated by numerous coloured lamps, and on either side of the broad walk were Japanese lanterns suspended from swaying rods. There were several collections of flowers and plants on view. In the conservatory the string band of the Scots Guards played, while the band of the Royal Engineers played on the west lawn. A group of handbell-ringers also performed in the club-house, which was thrown open for the use of visitors.

No Competition.—At a meeting of the Dover Town Council, on June 24, the Town Clerk reported that he had seen Mr. Thompson, the only chemist who had tendered for the supply of chemists' goods needed by the Corporation, and Mr. Thompson explained that competition in former years accounted for the large reduction in prices. Finding that there was no longer that competition, he put in a tender which he considered would be fairly remunerative. Mr. Thompson showed invoices for goods supplied under the contract at a loss. Sir Wm. Crundall said he could not see how Mr. Thompson could be sure there would be no competition unless there was a ring among the chemists. It was decided to invite fresh tenders.

Devon Chemists' Charges.—A somewhat heated correspondence in the *Western Morning News* has arisen on the subject of chemists' prices. The first letter, over the *nom de plume* of "A Victim," described how a chemist in one of the principal boroughs in Devon charged 4s. a pound for boracic acid crystals. Several chemists have replied, one of them stating that he is convinced he is the chemist alluded to. His charge for the boracic acid, at 11 p.m., was 1s., including a bottle. Other chemists have attempted to improve the occasion by pointing out the time and trouble involved in selling ounce packets of boracic acid, and complaining that some members of the public expect an ounce of a drug and a shillingsworth of information at hundredweight rates.

Blight and Insect Pests.—A deputation of the National Fruit Growers' Association waited on Lord Onslow at the Board of Agriculture recently for the purpose of calling his lordship's attention to the very serious loss to which the industry is exposed from the ravages of blight and insect pests. The deputation was introduced by Sir James Rankin, M.P., and he was supported by Colonel C. W. Long, M.P., the President of the National Fruit Growers' Federation. The other speakers were delegates from Kent, Cambridgeshire, Gloucestershire, and Herefordshire. It was urged that some concerted action should be taken to eradicate orchard pests, and the speakers were all strongly in favour of a public inquiry into the whole subject. In his reply, the President of the Board fully recognised the importance of the objects of the deputation, and promised that a departmental inquiry should be held in the autumn.

Drug Store Advertisements: A Protest.—The attention of Dr. D. Dyce Brown, of 29, Seymour Street, Portman Square, London, has been directed to an advertisement of "Gordon's Wholesale Drug Stores, 108, George Street, and 157, Skene Street, Aberdeen," published in the *Aberdeen Free Press*, and in which the following was printed in a list of proprietary and quack medicines:—"2s. 6d. Dr. Dyce Brown's Kidney Pills, 2s.; post, 2s. 1d." Dr. Dyce Brown has since written to the newspaper in question disclaiming any knowledge of the matter, and he remarks: "Not only would I never dream of advertising in any shape or form, but it would require a stretch of credulity to suppose that a London physician, who is one of the consulting physicians to the London Homœopathic Hospital, could be capable of having such an article as 'kidney pills' in his materia medica, much less of his demeaning himself by advertising them."

Accident in a Glasgow Chemical Warehouse.—Considerable alarm was caused on Saturday afternoon by the report that a fire had broken out in the premises of Messrs. W. and R. Hattrick and Co., wholesale chemists and druggists, Renfield Street. A shelf in the basement had given way, and several large carboys of acid had fallen to the floor, spilling the contents and creating a dense volume of noxious fumes. On account of these fumes the firemen were unable to enter the basement, and for a time there was no means of knowing whether or not the premises were on fire. As a precautionary measure, however, the tramway traffic in Renfield Street was stopped, and policemen kept the public from approaching too near the premises. Ultimately, by pumping air into the cellar, the fumes were dispersed, and all cause for alarm was soon at an end. It is estimated that damage amounting to about £400 has been caused to the stock.

Opium or Chocolate?—At the Brighton Quarter Sessions, on Friday, Emily Waller, 38, pleaded not guilty to attempting to commit suicide on June 8. The allegation was that on the evening of the day in question prisoner was in a beerhouse with a man with whom she lived, and that when he refused to give her more drink she said she would go home and fetch a box of poison that she had there. She went home, and returned with what seemed to be a box of some ointment, and, in spite of the protests of those near her, she ate the contents. Dr. Maguire, the police surgeon, said the box, parts of which were now produced, had contained gall and opium ointment, and when full would contain about 32 grains of opium, which in most cases would be a fatal dose.—Prisoner said she had scraped out the ointment and had put in some chocolate instead, and it was this that she ate. She did it to get "her man" out of the beerhouse.—She was discharged.

A Fruit Tree Disease.—A leaflet (No. 87) dealing with a disease of young fruit trees, due to the ravages of a fungus *Eutypella prunastri*, has recently been issued by the Board of Agriculture, 4, Whitehall Place, S.W. Young standard fruit trees, up to the age of eight years, are most liable to the disease; and, as the stem or stock is the part attacked, the girdling of this portion of the plant by the fungus growing in the bark and cambium means the death of the entire tree. Up to the present the disease has only been observed on a large scale where the trees are growing in stiff clay. It is considered important that the fungus should be recognised by gardeners, as its frequent occurrence on wild trees in hedgerows might lead to the infection of nursery stock in a wholesale manner, as has in fact taken place more than once, unless detected and removed without delay. A copy of the leaflet may be had on application by unstamped letter, to the address given above.

Is a Co-operative Society a "Person"?—At Devonport, on June 24, the Plymouth Mutual Industrial Co-operative Society, Limited, was summoned under the Merchandise Marks Act, 1887, for applying a false trade description to certain goods, and two assistants in the society's employ were also summoned for a like offence. For the defence the objection was raised that the prosecutor had no power to summon the society, because the alleged offences were offences of commission, and offences of commission were offences of individuals, and the individuals must be got at, and that it was not only contrary to law, but unwise to proceed against a corporation. It was pointed out, however, that a company was included in the word "person" under the Merchandise Marks Act, and it was also stated that by the Interpretation Act the word "person" included a corporation. The objection was not sustained, but the Bench considered that there was not sufficient evidence to convict the society of intent to defraud, and in regard to the assistants the case was dismissed.

The Cardiff Union Dispenser.—At a meeting of the Cardiff Board of Guardians, on June 27, a letter was read from the Local Government Board with reference to the dismissal of Mr. W. B. Taylor, the Union dispenser (see last vol., page 830). The letter stated that, having received the report of the official inquiry recently held by their inspector, Mr. Bircham, the Board had decided that they would not be justified in assenting to the Guardians' request for Mr. Taylor's dismissal from office, and they, therefore, removed the suspension which the Guardians had imposed upon him, and directed that he should forthwith resume the discharge of the duties of his office. At the same time, the Board stated that they had not arrived at that conclusion without some hesitation, as there was evidence of several cases where medicines were not properly made up in accordance with the Medical Officer's prescriptions. The Board also made certain suggestions concerning the regulation of the dispensary. The Guardians decided to communicate the purport of the letter to Mr. Taylor, and that the whole matter be referred to the Dispensary Committee for consideration and report.

Chinese Medicines, etc.—Acting-Consul H. H. Fox, reporting on the trade of Wuchow for the year 1902, states that the export of native medicines increased from 10,000 Haikuan taels in 1901 to over 18,000 Haikuan taels last year. Doubtless many of the Yünnan and Kueichow products, which formerly passed through Hunan to Hankow, now find their way out *viâ* the West River. He also remarks: "I do not know that any of the so-called medicines produced in Kuangsi and adjacent provinces, a list of which would include roots, barks and husks; twigs, leaves, and flowers; fruits, seeds, and grasses; insects, and even stones, would be of much value to the British Pharmacopœia but I shall be happy to afford more detailed information on the subject if inquirers will specify the particular products they are interested in." The import of foreign medicines, he states, grows slowly but steadily, as Chinese practitioners trained in the mission hospitals at Canton and Fatshan begin to settle in the province. The best-known medicines are at present quinine in powder and tabloids, cod-liver oil and its emulsion, iodine and iodide of potassium, sulphate of zinc (for eye lotions), etc. Among a people who believe so thoroughly in the virtues of nostrums of all kinds, Mr. Fox thinks, there should be a large field for foreign materia medica, more especially in the form of patent medicines.

Lead Poisoning in the Potteries.—The Home Office inquiry into the lead poisoning among the workers in the Staffordshire potteries was reopened on Wednesday, July 1, by Lord James of Hereford, the arbitrator. It is eighteen months ago since the inquiry was commenced, and after sitting for a fortnight Lord James adjourned to give the manufacturers an opportunity of endeavouring to reduce cases of plumbism. It is generally believed, remarks the *Morning Advertiser*, that Lord James is not satisfied with the existing state of things, and that after hearing further evidence next week, he will again adjourn the inquiry, having made suggestions with regard to diminished use of lead in glazes. The manufacturers protest that if this is done the industry will be ruined, as the Germans at present use more lead than the English manufacturers. Some good results have been obtained where the leadless solution has been used, but experts for the manufacturers say the leadless glaze will not stand the test of time. This, however, remains to be seen. Since the arbitration was opened eighteen months ago the manufacturers have, acting on the suggestion of Lord James, instituted a potters' insurance company, in which those working in the lead can make some provision in case of illness. The operatives, however, it is stated, do not yet take kindly to the scheme, which involves a rather strict medical examination at intervals.

Boards of Guardians and Drugs.—Hereford Board of Guardians have decided that in future the Guardians provide all drugs and dressings used for the patients in the workhouse instead of the Medical Officer. The latter, however, will continue to find all surgical instruments and splints. It was stated in the course of the discussion that the previous contract, under which the Medical Officer was supposed to provide drugs out of his salary, had been drawn up when only two drugs—Epsom salts and sarsaparilla—were used in the workhouse.——At last week's meeting of the Romsey Board of Guardians Dr. Buchell asked that the amount spent by him on antitoxin for diphtheria cases should be refunded to him. He was now treating a case which had a ready cost him 12s. 6d. Other Boards were allowing for such cost, and he asked to be treated in a similar manner. The Board, after discussion, agreed to the request.——At a meeting of the Dudley Board of Guardians it was resolved not to entertain the proposal of the Medical Officer for a rearrangement of the system of the supply of drugs to workhouses.——At the meeting of the Stroud Board of Guardians, on June 22, Mr. Coley asked whether the order for a 20-gallon cask of disinfectants could not be placed with the local chemists instead of with an outside firm. He was sure the local firms could supply at the same price as now paid. It was decided to ascertain what the local prices are.——Bootle Board of Guardians on Saturday decided not to adopt the recommendation of the Local Government Board that the Guardians should provide drugs and expensive medicines for the workhouse instead of the Medical Officer doing so. It was considered that the drugs which would have to be purchased would deteriorate by laying by for a length of time.

Birmingham Analyst and Spirit of Sal Volatile.—Mr. J. F. Liverseege, F.I.C., Ph.C., public analyst to the City of Birmingham, found during the last quarter that one of three samples of spirit of sal volatile examined by him was deficient of about one-quarter of the proper quantity of normal ammonium carbonate, while the quantity of ammonia was somewhat in excess. He did not use the Pharmacopœia test for carbonate, as his experience and that of other analysts has shown it to be untrustworthy, and the quantity of the sample received was not sufficient to allow him to waste it on useless tests. The Health Committee decided to caution the vendor, and when this was done he produced a certificate from another analyst, who stated that the sample satisfied the tests of the British Pharmacopœia, and, therefore, could not be considered to be adulterated. The third sample was then sent to another public analyst, who reported that the quantity of carbonate in it was 32 per cent. below the strength of British Pharmacopœia spirit, this result being somewhat less favourable to the vendor than Mr. Liverseege's. The reason why the second analyst's report disagreed was evidently due to the defective Pharmacopœia test. Mr. Liverseege continues: "I consider that a public analyst may use any suitable test to ascertain if the drug is 'of the nature, substance, and quality of the article demanded by the purchaser,' whether such test is contained in the official volume or not. My analytical results suggest that the sample had been unskilfully prepared, and that when the makers found it deficient in alkalinity they added a little strong ammonia instead of ammonium carbonate." Nineteen samples of coffee, thirteen samples of white pepper, eight samples of lard, six of arrowroot, four each of cod-liver oil, castor oil, and Epsom salt, two of tincture of arnica, and one of spirit of camphor, were all found to be genuine, while one of three samples of wood charcoal was found to be adulterated, containing 10 per cent. of ash.

Rochdale Chemists and Workhouse Drug Supply.—At the meeting of the Rochdale Board of Guardians, on June 25, a letter was received from the Local Government Board enclosing the following communication received from Mr. H. Woodward, chemist and druggist, 78, Yorkshire Street, Mr. W. Highly, Drake Street, and Messrs. J. J. Thomas and Son, chemist and druggist, 24, Yorkshire Street:—

> We are writing to draw your attention to the question of the supply of drugs to the Rochdale Workhouse. Previous to the last, the Guardians have given the local chemists an opportunity of tendering, but since the end of the March quarter no tender forms for drugs have

been issued, neither has there been any public advertisement for drugs. We shall be glad to know if such a proceeding is legal.

The Workhouse Committee resolved that the Clerk should inform the Local Government Board that the annual expenditure on drugs and infirmary requisites had attained to so large an amount that the Guardians, after much consideration, had found it advisable, from a business point of view, to obtain tenders from manufacturers and wholesale dealers, and that the present contract was entered into on consideration of such tenders. In the discussion which ensued, Mr. Hoyle said he thought that some reason for the Board's decision should be given to the chemists of the town. In his opinion facilities should be given to the local chemists to tender. If they could not supply goods it was their own look out. The Rev. T. W. Wareham said the reason the Drugs Committee had taken the course they had was that the Board now spent as much as £1,000 a year on drugs and requisites. That could be called a wholesale order, and the Committee thought the wholesale houses would be able to complete the order more satisfactorily than the retailer could do. They had had evidence before them that the wholesale dealers could give them better terms than the local chemists, and it became the Board to practise economy, and see that the ratepayers got the best return for their money. The action of the Committee was approved.

WHOLESALE DRUGGISTS' PICNICS.

An Excursion to Matlock.—On Saturday last the employees of Messrs. Davies, Gibbins, and Co., wholesale chemists, of Derby, held their annual excursion, the place selected being Chatsworth, Haddon, etc. The party left Derby in special carriages by the 9.40 for Matlock Bridge, whence they were conveyed by breaks to Chatsworth House. After spending a delightful time in the Palace of the Peak, the party proceeded to Bakewell, where a good dinner, provided by the firm, awaited them at the Castle Hotel. Leaving Bakewell, they proceeded through the lovely Derbyshire scenery to Haddon Hall, and a delightful hour was spent in this historic pile. After taking a series of photographs, a move was made for Matlock Bath, the drive through this part of the country being specially enjoyed. Reaching Matlock Bath at six o'clock, tea was partaken of at the Peveril Hotel, after which a pleasant couple of hours were spent, either listening to the band on the promenade or visiting the lovely spots for which Matlock is so famous. The weather throughout the day was lovely, and the committee were complimented upon the splendid arrangements they had made.

An Outing at Eastbourne.—On Saturday, June 27, took place the annual outing of the staff and employees of Messrs. C. J. Hewlett and Son, and upwards of fifty proceeded by an early train to Eastbourne. The morning was spent in boating, etc., and at one o'clock dinner was served at the Pier Hotel. Mr. E. J. Millard, F.C.S., took the chair, and, in responding to the toast of "The Firm," proposed by Mr. F. Hicks, referred to their continued success and prosperity, and especially the progress made in the export department during the last few years. They were now exporting over 1,000 gallons of tinctures a month. The health of Mr. John C. Hewlett, F.C.S., was drunk with enthusiasm and accompanied by musical honours. In the afternoon an excursion was arranged to Hurstmonceaux Castle in brakes, which was much enjoyed. An exciting incident occurred at Hurstmonceaux, as the well-known cottage at the entrance to the grounds was in danger of being burnt down when the party arrived. An amateur fire brigade corps was speedily organised, and after some hard work the fire was overcome, but not before the outbuildings attached to the cottage were destroyed. Needless to say, the occupants of the cottage were profusely grateful for the timely help which saved their house. The return journey from Eastbourne took place at 8 p.m., and concluded a most enjoyable outing, due to the liberality of the firm and the lovely weather that prevailed.

A Picnic at Ware.—The picturesque little village of Amwell, in Hertfordshire, was on Saturday last visited by the employees and managing staff of Messrs. Allen and Hanburys' various branches. The occasion was the firm's annual outing. The London contingent left Liverpool Street by an early train, and although the journey was not made with the undue haste which characterised John Gilpin's trip to the same historic spot, it was undoubtedly accomplished with more comfort. The Ware employees had already commenced the day's programme when the train from London arrived, and were waiting on the cricket ground to welcome the rest of the party. The programme of sports included a cricket match between Allenbury's Cricket Club and Allenbury's (Ware) C.C. But the racecourse was the centre of attraction, and the events included several novel items, such as a skipping-rope race, a thread-needle race, and a sack race for ladies. The programme concluded, about 450 sat down to tea, at which Mr. W. R. Dodd, supported by Mr. Milton, Mr. Solomon, Mr. Warwick, Mr. Faithful, Mr. Grice, and others of the firm's representatives presided, in the Drill Hall, Ware. The bulk of the work of organising the function fell to the lot of Mr. H. Warwick, who is to be congratulated on the success which attended his efforts. Mr. L. Kedge acted as hon. secretary. The prizes were distributed by Mrs. W. R. Dodd. The results of some of the events were as follows:—The 120 yards handicap; (1) J. Wells; (2) W. R. Smith; (3) J. Brazier. The 240 yards three-legged race was won by H. Burling and W. Carlton. The 880 yards handicap was won by J. Wells. The one mile championship race; (1) W. Ayres; (2) F. Crane; (3) B. Brazier. A tug-o'-war was arranged between the London and Ware branches in which the Ware branch was successful. Mr. R. J. Hanbury and Mr. F. C. Hanbury rendered valuable assistance to the committee. Mr. Byron acted as handicapper.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. R. L. Agar has purchased the chemist's business carried on at 59, Queen Street, Ramsgate, by Mr. Gadd.

Mr. Matthew Laxon, pharmacist, of 14, Market Place, Faversham, has disposed of his business to Mr. John T. T. Rolfe.

Mr. Walter Hills has been nominated by the Council of the Pharmaceutical Society as a representative on the Pharmacopœia Conference.

Sir Alfred Arnold, as many of our readers will recollect, married the daughter of the late Mr. Benjamin Wood, chemist and druggist, of Halifax. Sir Alfred is one of the "birthday" knights.

Mr. Dixon, chemist and druggist, of St. George's Terrace, Millom, has purchased the business of the late Mr. J. L. Roberts, chemist and druggist, of Market Square, Millom, and will carry on both establishments.

Mr. Bertram Blount, F.I.C., late of the firm of Messrs. Stanger and Blount, has removed to 76 and 78, York Street, Westminster. Mr. Blount's late partner, Mr. W. Harry Stanger, died a short time back.

Mr. Percy Pitman, hydraulic engineer, late of Halifax, has removed to Ledbury, Herefordshire. The "Hector" water-motor is adapted to chemical and physiological laboratories, and Mr. Pitman will be pleased to send particulars to all whom it may concern.

Messrs. Cooper and Co., chemists and mineral water manufacturers, 80, Gloucester Road, S.W., have purchased the business, book debts, etc., of the late Mr. Charles Bridges, pharmaceutical chemist, 24, Sloane Street, London, S.W., from and including June 24.

Mr. F. C. Ashford, chemist and druggist, Far Cotton, Northampton, has been elected as a Radical to fill a vacancy on the Northampton Town Council. Mr. Ashford and his father, Mr. E. C. Ashford, are prominent members of the Northamptonshire Chemists' Association.

Mr. Harris, chemist and druggist, Bury New Road, Strangeways, Manchester, has sold his business to Mr. Richard Weiss, chemist and druggist and doctor of science, of German nationality. The stock was valued and the transfer effected through Messrs. Tomlinson and Son's Agency, New Cannon Street, Manchester.

Mr. Gordon C. Innes has purchased from Messrs. Fleming' Oil and Chemical Co., Limited, 101, Leadenhall Street, London, E.C., the stock and goodwill of their "Camphylene" and Moth Preventative Branch. Mr. Innes has been connected with the above firm since its formation; the business will be carried on under the name of "The Camphylene Company."

Professor Edward Hart, of Lafayette College, Easton, Pa., U.S.A., who has been deputed by the New York Section of the Society of Chemical Industry to convey the official invitation to hold next year's annual meeting of the Society in America, was entertained at dinner on Wednesday, July 1, by the Council and other members of the Society. The dinner was held at Prince's Restaurant, Piccadilly, with Dr. J. W. Swan in the chair.

Mr. William L. Currie, of Glasgow, who has been co-opted as a member of the Council of the Pharmaceutical Society, was, as will be remembered, first on the list of unsuccessful candidates at the election in May last. Mr. Currie has done much good work for pharmacy in Scotland, and was for some years a member of the Executive of the North British Branch, being vice-chairman of that body for four years. He has been President of the Glasgow and West of Scotland Pharmaceutical Association for more than ten years, and is now Chairman of the Federation of Local Pharmaceutical Associations. His cooption should be gratifying to Scottish pharmacists, whose representation on the Council is now doubled.

Mr. James Stuart Hills, who is to be nominated for the Salters' Company's Research Fellowship, is the second son of Mr. Walter Hills, Treasurer and past-President of the Pharmaceutical Society. Mr. Stuart Hills' career at the Square was interrupted on his enrolment as a member of the field battery which did such good service with the City Imperial Volunteers in the Boer War. On Mr. Hills' return from South Africa his studies were resumed, and he passed the Minor and Major Examinations in July, 1901, and April, 1902, respectively, winning also various certificates of honour at the School of Pharmacy. During the last year Mr. J. S. Hills has been studying in the laboratories of King's College, London.

Mr. James Townsend (senior partner of James Townsend and Son, chemists' printers, Exeter and London) received on Friday evening, at Glenoak, Exeter, a deputation of twelve employees of the firm, representing an average of over thirty years' service, who presented him with his portrait in oils, by Bradnee, in a massive oak frame. The presentation was made on behalf of the employees by Mr. F. S. Crouch as senior employee, who spoke of the kindly feeling which had ever existed between Mr. Townsend and his employees. Mr. Townsend thanked the deputation and all the employees for this unexpected gift, which he said he should always appreciate very highly. He afterwards entertained the deputation.

TRADE NOTES.

John Mackay and Co., 4, Canning Street, Edinburgh.—In our advertisement pages of this week appears a list of a few of the high-class productions of this firm, and we hope to report on them in a future issue.

Chlorodyne.—The proprietors of Dr. J. Collis Browne's Chlorodyne give notice of a revision in the prices to be charged the trade by the wholesale houses in future. Particulars will be found in our advertisement pages.

Messrs. Potter and Clarke, 60, Artillery Lane, E.C.—A very excellent health salt, registered and protected at the Patents Office under the words "Vitalizing Saline," is put on the market by the above firm. The carton, which contains an 8 oz. bottle, is artistically decorated, and the tin, which should sell well at 4½d., is one of the handsomest we have seen.

Messrs. S. Maw, Son, and Sons' New Quarterly Price List has just been issued. The book of illustrations is an improvement on any previous issue, and is as representative of their large and varied stock as is possible. Almost every article that can possibly be of interest to the retail chemist is here depicted. An interesting feature of the publication is a superb full-page plate of the late Mr. George Maw, who founded the firm in 1807.

Hearon, Squire, and Francis, Limited, are to be congratulated on the prompt manner in which they have met the action of the Inland Revenue authorities. Their packed specialties bearing "ailment names" will, prior to September 30, be labelled in such a manner as to exempt the preparations from stamp duty. The firm will be pleased to furnish information concerning these saleable counter-adjuncts to any of our readers who apply to 30, Southwark Street, S.E.

Wright, Layman, and Umney.—It is evident that in adding Wright's Coal Tar Soap to the P.A.T.A. list the above firm is desirous that it should be sold more than ever through the agencies of chemists. It seems only natural to suppose that the attitude they have adopted will secure for them the cooperation of pharmacists, and there is little doubt that the personal recommendation of the chemist carries far more weight than does a newspaper advertisement. Our readers should write to 48, Southwark Street, S.E., for information concerning the special terms offered for personal recommendation of an article which deserves all the popularity it has attained.

The P.A.T.A. List.—It is pleasing to be able to report the following additions to the protected list:—BATTLE'S VERMIN KILLER is protected at the full face value of 3d., 6d., and 1s.; it shows a good margin of profit, and can only be sold by registered chemists. The BENEDICTIN DENTIFRICES OF SOULAC are also added; particulars from Mr. A. Seguin, 30, Gerrard Street, W. JOHN WATSON'S FAMILY PILLS, an old established Lincolnshire medicine, is another addition, and Mr. Horace Watson, of Cleethorpes, will give particulars. CHELTINE MALTOSE FOOD is the latest addition made by the up-to-date Cheltine Foods, Limited, of Cheltenham. CAPSULONES and TABLONES are now protected, and are being extensively advertised by the Capsuloid Company, Limited, 31, Snow Hill, E.C. STRANGE WINTER'S HAIR FOOD has been placed on the list by Messrs. Burgoyne, Burbidges, and Co. The minimum retail prices of ICILMA FLUOR CREAM, prepared at 142, Gray's Inn Road, W.C., are now 1s. and 1s. 9d. Mr. R. J. Reuter, 6, Well Street, E.C., has added MULHEN'S VIOLETTA GRAZIELLA, comprising perfume, powder, sachets and soaps; their inclusion in the list will be welcomed.

W. Martindale.—The first part of the monthly price list issued from 10, New Cavendish Street, W., is to hand. The publication is devoted to chemicals, galenicals, synthetics, and the like, and is distinctly up to date. We notice among the new preparations mentioned such recent productions as argyrol, effervescent aspirin, pyrenol, radium, rhinodyne, savore, sanosin, veronal, and many others. We would advise our readers to apply for a copy.

W. Martindale.
PRICE LIST.
WHOLESALE MANUFACTURING
AND ANALYTICAL CHEMIST.
10 New Cavendish St. London, W.

PATENTS AND TRADE MARKS.*

New Patent Applications.

SPRAY PRODUCER OR SPREADER (No. 15,512 of 1902).—Société dite Pharmacie Centrale de France, 21, Rue des Normains d'Hyeres, Paris. A bulb of india-rubber, to which is attached a nipple adapted to contain a suitable filtering material. The nipple is connected to one end of a metallic tube, a portion of which is coiled, the other end of the tube being attached to the nozzle, which is connected by means of a bayonet joint with a short tube attached to a glass flask. The nozzle carries a removable metallic tube, which plunges into the flask. In operation the requisite quantity of liquid to be vaporised is introduced into the flask and the parts are connected up. The coil is then heated by means of an alcohol lamp for thirty-five to forty seconds. When the apparatus is to be employed as a nasal spray a nasal tip is provided adapted to be screwed to the nozzle. When in use as an inhaler the short tube attached to the nozzle is removed.

BOTTLE FOR CONTAINING POISON AND OTHER DANGEROUS LIQUIDS (No. 16,139 of 1902).—A. W. Martin, Gorebrook House, Hyde Road, Gorton, Lancashire. A bottle of distinctive shape, which will not stand erect, while the contents cannot escape when it is laid upon its side, even though the cork be removed. What would normally be the base of the bottle is made convex, and one of the flat or concave sides of the bottle serves as the base. The neck of the said bottle is placed at one end, and between the base of the neck and the body of the bottle a transverse groove is provided, extending a suitable distance downwards, so as to form a partition or loop, which acts as a trap to prevent the contents of the bottle from escaping.

COVERING OR ENVELOPE FOR RENDERING MEDICINES TASTELESS (No. 4,294 of 1903).—W. Fairweather, 62, St. Vincent Street, Glasgow. (Communicated by M. Kobayashi, Tamaru Machi, Wataa, Ise, Miye, Japan.) Five parts of isinglass or gelatin is dissolved in 200 parts of water by the aid of heat and a solution of five parts of starch in 100 parts of water is then added, the mixture being well stirred meanwhile. The mixture is then again boiled until is assumes the consistency of syrup, filtered through a hair sieve, and spread with a brush over a smooth metallic plate previously heated over a fire. This coating, when dry, is peeled off and cut into suitable round discs. The resulting substance is soft, pliable, colourless, and odourless, will not become mouldy, and is easily soluble in saliva or gastric juice.

MEDICAMENTS FOR CURING TOOTHACHE (No. 8,684 of 1903).—P. O. Tegner and C. J. Lundborg, both of Fageras, Sweden. A mixture of thirty parts by weight of candy, twenty parts by weight of white pepper, fifteen parts by weight of common salt, and five parts by weight of peppermint oil. These ingredients are boiled together, and the product formed into pellets, one of which is to be pressed into the aching tooth.

NOTE.—Opposition to the grant of any of the above-mentioned Patents must be filed at the Patent Office on or before August 4, 1903.

New Trade Mark Applications.

"**TONCIT**," for photographic chemicals, by Chemische Fabrik Helfenberg Aktien Gesellschaft vormals E. Dieterich, Halfenberg, near Dresden. 253,867.

"**PETROX**" ("Petro" disclaimed), for chemical substances used in manufactures, photography, etc., by S. Wills and Co., Castle Green Colour Works, Bristol. 254,569.

"**NEUTRITE**," for a chemical substance for use in deodorising and disinfecting, by J. T. Szek, 27, Campden House Road, Kensington, W. 253,735.

"**PLASMITE**" ("Plasm" disclaimed), for chemical substances used for agricultural, veterinary, etc., purposes, by W. Wardle, 2, Rollestone Road, Burton-on-Trent. 254,627.

"**CARBOSIL**" ("Carbo" disclaimed), for chemical substances used for agricultural, veterinary, etc., purposes, by J. Crosfield and Sons, Limited, Bank Quay, Warrington. 254,751.

"**WILBURINE**" ("Wilbur" disclaimed), for medicinal compounds, by Wilburine Oil Works, Limited, 11, Broadway, New York, U.S.A. 253,523.

"**KEBRE**," for medicines for human use, by W. C. Kemp and J. A. E. Breeze, both of 88, Oxton Road, Birkenhead. 254,281.

"**NEURONE**," for medicines for human use, by W. M. Bramley, 77, Rookery Road, Handsworth, Birmingham. 254,543.

"**OXELLA**," for medicines for human use, by R. McClumpha, 1, Westgate Road, Newcastle-on-Tyne. 254,909.

"**PHENOFAX**," for chemical substances prepared for use in medicines, etc., by Burroughs Wellcome and Co., Snow Hill Buildings, Holborn Viaduct, E.C. 254,915.

"**PRIZETTA**" ("Prize" disclaimed), for articles for toilet purposes, by G. Storton, 106, Wellingboro' Road, Northampton. 254,144.

"**MICROL**," for perfumery, etc., by Co-operative Wholesale Society, Limited, 1, Balloon Street, Manchester. 254,891.

NOTE.—Opposition to the registration of any of the above-mentioned Trade Marks must be filed at the Patent Office on or before August 1, 1903.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and Patent Notes for Inventors' free on application.

MARKET REPORT.

The quotations given below are the lowest nett cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London, Thursday, July 2, 1903.

Business in Drugs and Chemicals has been exceedingly quiet during the past week, and we have again to report a very dull market. In fact, it would be almost nearer the mark to say there was no market at all, while at the period of the year when most people are thinking of holidays there seems but little hope of improvement, at least, not before the autumn. Among the alterations worthy of special note is a rise in Santonin. As was prognosticated in these columns, Santonin has again been advanced in price, and, contrary to what might have been expected, it is stated that, so far from the high prices interfering with consumptions, the demand has actually increased. Quinine is unchanged as far as the makers are concerned, but there is nothing doing in the article, either from first or second hand, while in the speculative market value of the sulphate rules nearly 2d. per oz. below maker's price. Cod-Liver Oil is still abnormally high, and practically no business is passing in the article. Bromides are steady, Iodides are unchanged, and Quicksilver and Mercurials firm. Cocaine is also very firm. Glycerin and Carbolic Acid are quiet. Phenacetin and Sulphonal dull and weak. Shellac shows a very decided advance, on higher prices from Calcutta. In Opium there is rather a flutter, on reports of damage by rain to the new crop, with an advance in price on the other side. Morphine and Codeine are firm, but, so far, unchanged in price.

ACID CARBOLIC—Quiet, but fairly steady, at 5½d. to 5¾d. per lb. for the 34-35° C. ice crystal in 2½-cwt. drums and overcasks, 5¾d. to 6d. for the 39° C. ice crystal, and 6½d. to 7d. for the 39-40° C. B.P. quality in detached crystals, these prices being for quantity and bulk packing.

ACID CITRIC—Steady at 1s. 1¼d. to 1s. 1½d. per lb. for crystals in 5 cwt. barrels; it is to be hoped that the warmer weather may have a favourable influence on value of this article.

ACID TARTARIC.—English on spot is quoted 1s. 1½d. per lb. and foreign 1s. 1¼d.; it is thought that if the fine weather continues we shall see higher prices for Tartaric.

BROMIDES—Steady at 1s. 11½d. per lb. for Potassii Bromid.

CASCARA SAGRADA.—Whilst spot price for three-year-old remains at 50s., the market is much firmer, as there is more enquiry for new crop, but at the moment sellers are holding off and no price is named. Spot price in New York is 65s.

COCAINE—Is in good demand and very firm at late advance. price of the Hydrochlorate being 17s. to 17s. 6d. per oz., according to quantity, in 25 oz. tins.

CODEINE—Is, so far, unchanged at 10s. per oz. for the pure alkaloid.

CREAM OF TARTAR—Steady at 86s. 6d. to 87s. 6d. for first white crystals for spot delivery, and 4s. per cwt. more for 98 per cent. B.P. quality.

GLYCERIN—Unchanged at 67s. to 70s. per cwt., according to quantity for best 1260° SG quality in tins and cases, the lower figure being for 5 ton contracts.

IODIDES.—Convention prices remain unchanged on basis of 8s. 9d. per lb. for Potassii Iodid.

IPECACUANHA.—A quantity of Johore root has arrived this week. There has been no further arrivals of Carthagena, which makes holders firm at 4s. 5d. and 4s. 6d. per lb. as to quality.

MENTHOL—Has been in rather better enquiry. Kobayashi crystals are quoted at 25s. to 25s. 6d. per lb., according to quantity and holder.

MERCURIALS—Are firm at unchanged prices, on basis of 3s. 0½d. per lb. for Calomel and 2s. 8½d. for Corrosive Sublimate.

MORPHINE—Is very firm, in sympathy with the position of the crude drug, prices being, however, so far nominally unchanged at 4s. 4d. to 4s. 6d. per oz. for the Hydrochlorate powder and 2d. per oz. more for the crystalline salt.

NITRATE OF SODA.—On the spot Refined £10, Ordinary £9 10s.

OIL PEPPERMINT—Quiet at 12s. 6d. to 13s. per lb. for HGH.

OILS (FIXED) AND SPIRITS.—Linseed Oil: A weak market, prices having declined about 10s. London spot pipes £21 10s., barrels £22, month £21 15s., July-Aug. £21 10s. to £21 12s. 6d., Sept.-Dec. £20 10s. to £20 12s. 6d., Jan-April £20 2s. 6d. to £20 5s. Hull naked spot £20 15s., July-Aug. £20 7s. 6d., Sept.-Dec. £19 10s. Castor Oil: The prices for all descriptions on the spot continues limited, but the quotations are unaltered at 2 5-16d. for first pressure French and 2 3-16d. to 2¼d. per lb. for good seconds Calcutta. Cotton Oil steady. London crude spot £21 10s., July-Aug. £21 10s. Refined spot £22 15s. to £24. Hull naked refined spot £20 15s., July-Aug. £20 10s., Nov.-April £18 17s. 6d. Crude spot £19 10s. Olive Oil: Mogador £31 10s. to £33, Spanish £32. Levant £31 10s. to £33. Cocoanut Oil steady. Ceylon spot £25, June-July £23 c.i.f., July-Aug. and Aug.-Oct. £22 15s. c.i.f. Cochin spot nominally £33, Aug.-Oct. £25 15s. c.i.f., Oct.-Dec. £25 15s. c.i.f. Palm Oil: Lagos on the spot £27 10s. Turpentine firm. American spot 38s., July 37s. 3d. to 37s. 6d., July-Aug. 37s., Sept.-Dec. 37s., Jan.-April 38s. Petroleum Oil has advanced ¼d. Russian spot quoted 4⅜d. to 4½d. American spot 5⅞d. to 6d. Water White 7⅞d. to 8d. Roumanian unchanged; spot 5½d.

OPIUM.—News has been received from Smyrna that considerable sales have been effected at an advance of about 6d. per lb., the rise being said to have been the result of damage caused by unfavourable weather to the new crop, which is now being harvested. Here the article is decidedly stiffer, and holders appear hardly to have made up their minds what price to ask.

QUICKSILVER—Very steady at £8 12s. 6d. per bottle from first hand.

QUININE—Remains dull, and few sales have been made; prices are therefore nominal at 10½d. for B and S and/or Brunswick on the spot.

ROSIN.—Common strained spot 5s. 6d. to 5s. 9d. ex wharf, and 5s. 1½d. to 5s. 3d. July-September, September-November or October-December sailer ex ship terms.

SANTONIN—Has again been advanced, say, from 9d. to 1s. per lb., present price being 22s. 9d. to 24s. per lb., the lower figure being for 2 cwts. taken in one lot.

SHELLAC.—The Calcutta cable comes higher at 70 rupees nominal for TN Orange. The Calcutta shipments for June show a comparative deficiency of 4,700 cwt., the total to all parts being 16,500 cwt., against 21,200 cwt. last year. The market has been quieter, although remaining steady. Spot sales have been of small extent at the recent advance. For arrival 300 cases TN October-December shipment sold at 135s., c.f. and i. Futures are about steady, with sales of fully 1,500 cases TN, July delivery at 139s. 6d., August at 140s. 6d., September and October at 141s., December at 142s. to 141s. 6d., and January at 142s.

SPICES.—Ginger: In auction 1,084 packages of Jamaica ginger were offered, but only one or two small lots were sold. ordinary to middling fetching from 41s. to 46s. 6d. The bark was held for full prices. Cinnamon Bark: 200 bags were offered and sold at ½d. to ⅜d. Nutmegs: There was little demand for these, and 14 cases Penang were bought in—66's at 2s. 7d., 69's at 2s. 5d., and 110's at 1s. 1d. West Indian: 148 packages offered, and 127 sold—54's at 2s. 6d., 68's at 1s. 10s., 71's at 1s. 6d., 77's to 78's at 1s. 4d.

SULPHATE OF AMMONIA—Dull. Gray 24 per cent. London prompt £12 15s. to £12 17s. 6d. Hull prompt £12 10s. to £12 11s. 3d. Leith prompt £12 15s. to £12 17s. 6d. Beckton June £12 17s. 6d. Beckton terms prompt £12 15s.

SULPHATE OF COPPER.—Spot £19 5s. to £20.

THYMOL—Very quiet at 5s. 9d. to 6s. 3d. per lb., according to quantity and make.

VANILLA.—At the periodical sales 450 tins were offered, and about 250 sold, short lengths selling at 1s. dearer; long lengths were chiefly bought in, the bids being below last sale's rates.

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

Liability to Medicine Stamp Duty.

Whilst in agreement with Mr. Weddell that the uncertainty in regard to liability and somewhat arbitrary interpretation of the Medicine Stamp Act has caused inconvenience and annoyance in the past, I should nevertheless regard the "repeal of the Act" as one of the greatest disasters that could happen to the drug trade. Very scant reflection will demonstrate the practical outcome of repeal. The only existing limitation on absolutely free trade in drugs and medicines is embodied in the Pharmacy Act and the Medicine Stamp Act; the restrictive operation of the Pharmacy Act is not extensive, only covering the sale of a few scheduled poisons. I doubt if the ordinary retail chemist and druggist realises sufficient profit from the sale of scheduled poisons to pay his yearly gas account. The restrictive operation of the Medicine Stamp Act is relatively of greater value, as its influence covers a wide area. I do not think Mr. Weddell would care to see every huckster in the kingdom retailing B.P. preparations, with descriptive and recommendatory labels, as well as a host of commodities at present in various ways covered by the Stamp Act. The present difficulty has to be faced, and so far practical suggestions are not in evidence; the fact that the dilemma has been evolved by the aggressive action of the Chemists' Defence Association does not assist in solving the problem. If the Pharmaceutical Council could succeed in getting the licence restricted to registered chemists, it would be the best thing ever done for the trade, and certain advantages would also accrue to the Revenue. The number of licensed dealers is about 35,000, the number of chemists and druggists in business probably 9,000 to 10,000; increasing the annual licence to 20s. or 40s., and drawing the line somewhat tighter in respect of dutiable articles, would more than meet any loss of revenue. The difficulty of knowing what to stamp has been very much exaggerated. The Board have always supplied information to anyone who would take the trouble to ask, and if, as sometimes has been the case, a label has been marked "Liable" at one time and at another "Not liable," it should be remembered the labels do not always come before the same individual, and on the border line discrimination is difficult. Be that as it may, in all cases in my experience the Board have never exacted a penalty when one could satisfy them there had been a conflict of official opinion. The broad distinctions in regard to the wording of labels should be known to everyone, yet so many in the trade will deliberately invade the borderland. Again, there are a vast number of chemists who never look at a trade journal, and therefore are not posted up in the laws and regulations applicable to their business. It is a matter of history that I have consistently advocated diplomatic dealing with the Board of Inland Revenue; the wisdom of this course recent events amply justify. It remains to be seen whether diplomatic representation by the official heads of pharmacy may not extricate us from the disastrous position in which the unfortunate action of the Chemists' Defence Association has placed the drug trade.

Brockley, June 27, 1903. Leo Atkinson.

I quite agree with Mr. George Weddell, and think the only reasonable method of dealing with the Medicine Stamp Duty is to abolish it altogether. It is a constant annoyance, a constant restriction upon everything done by a chemist, and he is the only trader upon whom such a tax is inflicted upon many articles that he ought to sell freely without an everlasting fear of consequence. A grocer can sell tea with the strongest recommendation, a tobacconist can puff fancy smokes to any extent, a draper can trade-mark a velvet or a silk and remain free from any attack upon it, as no law exists for attacking those sales, but only those made by the unfortunate chemist, and under which he suffers sometimes like a malefactor on the rack, and for what? That a generous paternal Government of any party may drag a three-halfpence tax out of some suffering wretch whose rheumatic limbs want a liniment or whose cough is persistent, or who has some other breakdown for which he is seeking relief, and should therefore become a recipient of aid from the public exchequer, rather than one to be taxed. This is the true, unhumane position; or the alternative is that every chemist, big or little, with big or little trade and big or little family, is to be the special victim of a cruel tax and live a life of torment in trying to interpret what the Somerset House officials and the judges together are constantly befogged over. The paltry revenue produced can easily be raised by any other means, and the whole dispute and doubt removed without hurting any one. Let us throughout the whole of our trade appeal to the Government for the total repeal of this objectionable and cruel tax. It has no justification, it is a constant trouble and source of litigation, irritation, anxiety and annoyance, and in its latest phase is ridiculous. A fractional increase upon any dutiable article would raise more than the amount, and would be a tax upon all the people, and not chiefly, like this, upon the sick poor only, or upon the poor chemist, who is also thoroughly sick—of the absurdity and injustice.

Grimsby, June 25, 1903. Cor. Willson.

With Mr. George Weddell I quite agree that the easiest way out of the difficulty would be to abolish the patent medicine stamp entirely; but, unfortunately, we have to deal with the question as it is. Personally, the duty trouble is a secondary consideration, but I do most emphatically protest against the manner in which the duty is levied and collected, and most especially against the detective system adopted to pounce on labels which may or may not, according to the decision of the Revenue, be liable to stamp duty. With something like about 4,000 drugs, chemicals, and preparations to keep his eye on, know all the properties of and be able to give a full explanation as to the virtues or otherwise of to a customer at a moment's notice, a chemist should not be called upon to give his time and attention to the requirements of the stamp duty, the details of which it seems impossible to master, and the snares it contains impossible to avoid. Family medicines as sold by chemists generally, with a full explanatory label (much more for the guidance and benefit of the public than as a means of advertising his wares), are in a totally different category to those nostrums which are launched on the market by great capitalists with the avowed intention of money-making, and whose preparations must yield the bulk of the revenue derived from the duty, and as only a small proportion of the duty can possibly be raised from those few preparations sold by chemists retail over the counter, I would suggest, instead of the duty as now levied, that chemists should pay a special licence fee, issued only to chemists who have served a regular apprenticeship and are in business on their own account, of £2 or £3 per annum, or an amount to be determined, which should give them absolute freedom with regard to the wording of labels used only in their own shops. This licence should not be granted to companies, neither should it apply to wholesale dealings by chemists even in the articles which might be sold duty free in their own shops. This is a concession which, unless the duty is abolished, should be granted simply for the convenience and safety of the great mass of the poorer community, whose needs and want of higher education demand that they should have full information with the ordinary family medicines in general use. I find on reference to my stock that I must in future pay duty on many articles in common use which have hitherto been sold unstamped, or destroy about £20 or £30 worth of labels. This is a serious matter to an ordinary retail chemist, and the manner in which this new decision has been launched upon us is certainly not an English method of dealing with revenue. It is, fortunately, not often a body of tradesmen are called upon to pay a duty levied in a fresh form or destroy £70,000 of labels, for this is what it amounts to at the very least, and before the decision is verified and carried out I think the Pharmaceutical Council should approach the authorities and see if an alternative measure, either on the lines I have mentioned, or something better, cannot be suggested. In support of my idea I would say that: (1) The licence could be collected at same time as P.M. Licence; (2) it would relieve chemists generally from espionage, a great worry; and, above all, (3) chemists would know exactly what is required of them.

Aylesbury, June 29, 1903. W. Surfleet.

From a scientific point of view we are all animals. But, somehow, Somerset House will not tolerate that fact when deliberating over the Stamp Duty Act. How that noble assembly arrive at the conclusion that religious science must be paid for, whilst the soulless being derives the benefit of the law, is a matter I never could comprehend. But such appears to be the attitude of that assembly at the present moment. Why should I be asked to make the poor in the slums of London, for instance, pay 1½d. for the knowledge that will lead or enable him to make a choice of remedy for a particular malady when he can hardly afford to pay for and obtain the remedy itself; whilst the lower animal, far more able to make his own choice of herbage, and his owner in a far better position to pay for his medicine than the poor man, be allowed to go duty free? Surely there must be an advantage in being a soulless animal whilst suffering under such disadvantages as these. Are we not mistaking the right meaning of this Act? For all Acts of Parliament should be based upon religious principles rather than that of pecuniary gain, and I maintain that this Act was passed to suppress quackery rather than to prevent the qualified individual from informing his weaker brethren what would do his particular complaint good.

Criccieth, June 30, 1903. John Williams.

According to the latest interpretation by the Board of Inland Revenue, the chemists throughout the country will now have to place a 1½d. medicine stamp on every 1d. box of antibilious or liver pills, and on every 1d. worth of children's cough mixture, labelled as such and sold over the counter. How utterly preposterous such a position seems. The chemists—I don't mean the big West End chemists: they won't be affected at all; but the poor provincial chemists, a great deal of whose business consists in doling out pennyworths of pills and children's cough mixture, etc.—cannot afford to sit and ruminate in cow-like tranquility and allow this new imposition to pass without a strong protest. The Pharmaceutical Council ought to lose no time in approaching the Board of Inland Revenue. It is a fallacy to think the purchaser pays the extra duty in every case. If the Board remain adamant against any appeal of the Council and refuse to give way, might I suggest a way out of the difficulty—*i.e.*, for some authority to publish a collection of useful formulæ in a book contributed to by chemists all over the country, and which the Board of Inland Revenue would be asked to accept, and that all preparations contained therein would be allowed to be sold duty free by qualified chemists only, however recommended.

Liverpool, June 29, 1903. "Salol" (207/26).

The decision of the Inland Revenue authorities to enforce the Medicine Stamp Act in its entirety is one of the very best things which could have happened for legitimate pharmacy. If properly enforced it will thoroughly separate the wheat from the chaff. When an Act is passed it is only right that its provisions should be enforced and carried out. If any section of it presses harder than was originally intended when the Act was passed, the proper method is to get that section repealed, and not for a department of the State to be placed under the obligation of having to grant concessions. The Medicines Act protects the pharmacist who only desires to carry on his profession in a legitimate manner by the aid of the knowledge which he has acquired by a systematic training, practically under the supervision of the Government. The Royal Charter was granted to the Pharmaceutical Society to encourage the advancement of chemistry and pharmacy, and not to encourage the promotion of quackery. When a pharmacist steps outside those boundaries into the realm of quackery, it is only just that he should pay the penalty. The conditions under which nostrums are allowed to be foisted upon the community at the present time is a disgrace to any civilised country. When will the consciences of the medical and pharmaceutical professions be aroused to a sense of the responsibility which rests upon them for not protesting against such a deplorable state of things. Is it not time that both branches of the representatives of the profession of medicine joined hands and brought pressure to bear upon the authorities to get them to suppress the bold, audacious statements that are made in our daily papers, periodicals, and religious magazines, by the greatest combination of quacks and charlatans the world has ever seen. The tissue of lies and the bold-faced manner with which these mountebanks endeavour to extract the hard-earned money from the ignorant poor and feeble-minded ought long since to have been suppressed. The attention of the police for some time has been concentrated upon palmistry, and its exponents have been fined and imprisoned as rogues and vagabonds for defrauding the public by making false statements, and by that means obtaining money by false pretences. I will venture to say that many of their statements are far more reliable than those which are made by these medical impostors, who "for the good of the public" and "by the blessing of God" undertake with their powders, potions, balsams, and pills to cure "all disorders." Thus ignorance and blasphemy unite in picking the pockets and ruining the constitutions of thousands of people. Has not the time arrived for the casting aside of mercenary considerations and endeavouring by every means to elevate the noble profession of medicine by washing our hands of everything savouring of quackery? Consider the degradation attached to the individual who is compelled to hand out these stamped packets of humbug to enable him to exist. This disgraceful state of things has been mainly brought about through his unholy alliance with quacks, instead of relying upon his skill and knowledge of the art in which he has been trained, for a living. To what depths have we descended when an appeal has to be made to charlatans to allow a living wage to those who vend their nostrums. Men who have used their knowledge and recommended medicines the nature, qualities, and virtues of which are well-known, and have recommended them in place of these nostrums, have had to submit to vile insults hurled at them through the daily press and accused of substitution. But, on endeavouring to defend themselves their replies in defence of their actions have been committed to the waste-paper basket, and at the same time these quacks, by their blatant cries and loud boasting, have endeavoured, by every means in their power, to stamp out the flickering flame of knowledge and truth, whose very existence is a terror to them. Is it not time that the Government of a Christian country took means to suppress these quacksalvers and washed its hands from using money derived from such an infamous source?

July 1, 1903. "Verax" (207/38).

⁂ Other letters on this subject are unavoidably held over owing to pressure on space.—[Ed. *P.J.*]

Pilula Ferri.

With reference to the papers and correspondence concerning Pilula Ferri, I venture to submit, with respect, that none of your contributors have touched the real question, which is, What amount of ferrous carbonate is present in each pill? Evidence of the presence of ferrous salt calculated as ferrous carbonate is not, I submit, evidence of the latter, and it is this which is wanted and not that. The question of coating is important, and it is time objection was raised to the plastering of pills with French chalk and similar substances. It should be officially stated what covering should be used, and a formula set forth for the same. The Ferri Sulphas Exsiccatus is most variable, and improved suggestions have appeared for the preparation of this several times in the Journal during the past twelve months. The use of five excipients is not desirable and not quite up to date. Then, once more, why use exsiccated salts and add water as such and in the form of syrup? Could not the same object be more easily attained by drying the sodium carbonate until it has lost a certain weight, or using the permanent so-called monocarbonate and adding sugar?

June 30, 1903. "B. S. C." (207/45).

Mr. Thomas Maben and the Preliminary Examination.

I am surprised to see in last week's Journal a letter from Mr. Maben in connection with his motion on this subject at last meeting of Executive. He writes as though he had a grievance. He says:—

> The Chairman ruled it out of order for any discussion to take place on the previous question, and also that the mover of the original motion was not entitled to reply, a method of burking discussion which fortunately is seldom resorted to.

I am afraid I do not understand Mr. Maben. I was not asked for a ruling, and I did not give one. I merely conducted the business according to customary procedure. Mr. Maben was chairman, I believe, of a public body, and ought to know this. After the "previous question" had been moved and seconded, I said that, as discussion was not permissible, we should now take a vote. This we did. No one questioned the correctness of the procedure, not even Mr. Maben. He has apparently "worked himself up" since the meeting, and unless he wanted to make this an excuse for having a fling at Mr. Gilmour's "glaring inaccuracy," I cannot see why he should reopen the subject. Assuming, however, that Mr. Maben is perfectly honest, I take leave to quote for his information from the 'Chairman and Speaker':—

> Of the Previous Question.
>
> A motion to this effect is resorted to in order to set aside a motion without either amendment, postponement, negation, or further discussion thereon. Its nature is this. A motion being made and seconded is to be put to the vote if no person rise to oppose it. . . No person may be willing to place himself in the position of an opponent to such a proposition, for it may affirm a series of undeniable truths, but lead to no practical result; and it is for results that men meet in debate. . . Such a motion is before a meeting, and it is in the apprehension of a member of the meeting liable to some of the objections above stated, and he is desirous of setting it aside, not only without a vote being taken upon it, but without any further waste of time in the discussion of it. Such member may then, with propriety, state some of his objections to it and move "the previous question" thereon, which motion being seconded, the chairman ought without further discussion to put to the meeting.

That was exactly the method by which I conducted this part of the business of the meeting. Had I followed any other I should not have done my duty as Chairman in safeguarding the time of business men. In possession of more enlightened information, I hope Mr. Maben will see his way to retract the part of his letter referring to myself, and tender an apology for his unjustifiable remarks, made no doubt under a misapprehension of the true circumstances.

Edinburgh, June 30, 1903. Peter Boa.

Storage of Motor Spirit.

In your issue of June 6 you published a case in which I was fined for storing a case of motor-car spirit without having a licence for the same. Allow me to make an explanation. I had applied for a licence for my shop in Dickson Road. A refusal to this application had been sent to my Talbot Road shop, but this had not come into my hands at all, and consequently I was not aware of the refusal, hence the proceedings against me. Let me here say that the case of spirit was in patent safety cans, each can secured by a patent screw stopper, and the whole four cans securely packed in a strong wood box, and put in a recess, with a brick wall round it and under lock and key, in a yard behind my shop. Practically there is no more danger than in having a gas meter on one's premises. Of course, if anyone had broken in the place and cut the wires securing the stoppers of the cans, and then put a light to, there might be some danger, but the same, or greater, danger would occur if a person leaves the gas on in a room or someone cuts a gas pipe and then goes in the place with a naked light. I just drop this note to show how a thing may be exaggerated. I have probably the best fire-proof cellar in Blackpool.

Blackpool, June 30, 1903. J. Jackson.

A Remarkable Coincidence.

Instead of receiving my *Pharmaceutical Journal* this week, my wife is receiving various missives of condolence from pharmaceutical friends. Referring to this week's Journal—I have borrowed same from my neighbouring chemist and druggist—I find among the "Deaths" a notice applying very forcibly to myself. Of course, it may be a genuine announcement, but the coincidence is remarkable if so.

Downham Market, June 27, 1903. Harry George Smith.

⁂ We are glad to learn that the notice in question, which was copied from the Registrar's "Deaths Book," does not refer to Mr. Harry George Smith, of Downham Market, and regret that any of his friends should have been perturbed by the announcement which is now shown to be inaccurate. It appears that the Registrar of Births and Deaths for Great Grimsby had reported the death at Grimsby of "Henry George Smith," who was described as a chemist and druggist, and as there was no Henry George Smith on the Register of Chemists and Druggists, it was mistakenly assumed that the official certificate of death referred to Mr. Harry George Smith.—[Ed. *P.J.*]

A Warning.

I beg, through the *P.J.*, to warn chemists who supply goods to Mr. or Mrs. Elcho Spong, lately residing at Ventnor. Should anyone have present address of above parties they will confer a great kindness upon the writer by communicating with him. Prescriptions are stamped with my name and address.

Ventnor, June 29, 1903. Jas. Dunning.

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Directory of Midwives (J. A. H.—91/9).—We are not aware that any such directory is published in Great Britain.

Powder (P. S. T.—91/6).—A preliminary examination under the microscope reveals the presence of much vegetable *débris*, including wood elements. You have not sent enough for chemical examination, and the difficulties of investigation are increased by the absence of any information regarding the manner of use.

Use of Titles by Companies (C. H. F.—206/27).—The reason why limited companies are able to assume the title "chemist and druggist" is that it was decided by the House of Lords that the term "person," as used in Section 15 of the Pharmacy Act, 1868, could not be construed to include corporations. Limited companies, therefore, are in the same position, as regards the offences specified in Section 15, as individuals were in before the passing of the Act, *i.e.*, they are free from the restrictions which are imposed by the Section upon individuals.

Tablet Excipient (A. H. E.—91/4).—Melt oil of theobroma, 1, and add starch powder, 3, stirring thoroughly while continuing the application of heat, and not allowing to cool until uniformly mixed. Add the excipient to the material to be compressed, in such proportion that the mixture shall contain from 5 to 10 per cent. of oil of theobroma. As a general rule, it is found that one part of the excipient suffices for four parts of the material to be compressed, but if much sugar be present the proportion must be slightly increased. See *P.J.*, August 16, 1902, page 140, for further information on the subject.

Wines, Fruit-Syrups, etc. (C. A. C.—91/7).—Thudichum and Dupré's 'Treatise on the Origin, Nature, and Varieties of Wine' (Macmillan, 25s.) is very useful as a work of reference, and the second series of Spon's 'Workshop Receipts' (Spon, 5s.) contains many formulæ for essences, etc. Numerous practical formulæ for non-alcoholic beverages of various kinds will be found in the 'Notes on the Manufacture of Aërated Waters, Cordials, Brewed Beers, etc.,' published by Messrs. Burgoyne, Burbidges and Co., London. But we doubt whether you will be able to procure any work containing "tried and tested formulas" for wines and liqueurs, as such formulas are not often disclosed by those who possess them.

Storage of Petrol (A. D. W.—90/28).—It must be kept in liquid-tight and vapour-tight metal vessels, containing not more than two gallons each and labelled "Petroleum spirit, highly inflammable." Not more than sixty gallons must be stored in one storehouse at a time, and the storehouse must be of special construction. You must also apply for a licence to the County Council or District Council. Copies of the regulations—Statutory Rules and Orders, 1903, No. 225—can be obtained from Messrs. Eyre and Spottiswoode, East Harding Street, London, E.C., at one penny each. Presumably the spirit can be purchased from most of the wholesale firms that supply other petroleum products. The Gas Lighting Improvement Co., Ltd., 18, Devonshire Street, Bishopsgate Street, E.C., supply the spirit for motors at 1s. per gallon f.o.r.

DEATHS.

Adams.—On June 24. George Adams, Chemist and Druggist, Worthing. Aged 74.

Brett.—On June 28. John Brett, Chemist and Druggist, Bristol. Aged 76.

Burton.—On June 15. Matthew Burton, Chemist and Druggist, Kendal. Aged 65.

Garnsey.—On June 28, at Bath, the Rev. Henry Edward F. Garnsey, B.D., of Magdalen College, Oxford. Mr. Garnsey was well-known as a botanist, and translated a number of volumes for the Botanical Series issued by the Clarendon Press.

Hinks.—On June 20. John Hinks, Chemist and Druggist, Worcester. Aged 52.

Maxton.—On June 27, William Murray Maxton, Chemist and Druggist, Kelso. Aged 48. Mr. Maxton had been connected with the Pharmaceutical Society for many years, and had acted as Divisional Secretary at Kelso for the past five years. He had always taken a great interest in the work of the Society, and only last year he made a special canvass in favour of the Benevolent Fund, which resulted in several new subscribers. He also quite recently exerted himself to bring under the notice of the registered chemists in his division the chief points of interest in the questions raised by the report of the Committee on Poisons. Mr. Maxton had been ailing slightly for a few weeks, and had accidentally fallen and broken his arm, but no serious result was anticipated.

Wilson.—On June 26. William Wilson, Chemist and Druggist, Paisley. Aged 67.

MARRIAGE.

Spence—Finlayson.—On June 29, at All Saints' Church, Finchley Road, N.W., by the Rev. Richardson Eyre, Alexander Spence, M.P.S., eldest son of the late Robert Spence, M.D., J.P., Linlithgow, N.B., member of Executive of the North British Branch of the Pharmaceutical Society, to Marion, third daughter of the late Alfred Finlayson, of Mortimer Street, London, W., and of Mrs. Finlayson, 24, Blenheim Road, St. John's Wood, London, N.W.

Calendar for the Week (July 5—11, 1903).

Days of M	Days of W	Events of the Week.	Sun Rises	Sun Sets.
5	**S**	**Fourth Sunday after Trinity.**	3.51	8.17
6	M	Dr. Cornelius Hertz died, 1898.	3.51	8.17
7	Tu	Preston and District Chemists' Association, at 9.30 p.m.—Special Meeting.	3.52	8.16
8	W	Thames Valley District Chemists' Association, at 3 p.m.—General Meeting.	3.53	8.16
9	Th	○ Full Moon, 5.43 p.m. Hartlepools and District Chemists' Association, at 8.30 p.m.—Special Meeting. West Ham and District Chemists' Association.—Outing: For Members and Friends.	3.54	8.16
10	F	"First" Examination Discontinued, 1900.	3.55	8.15
11	S	Judgment of Appeal Court in Armson's Case, 1894.	3.57	8.14

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Adam, Alcock, Ashford, Atkin, Atkins, Axe, Boorne, Branford, Branson, Bromley, Cheyne, Coates, Craig, Cresswell, Cummings, Dixon, Dunning, Foy, Gwynn, Harvey, Heron, Hill, Hooper, Horsfield, Jackson, Lees, Pine, Pollard, Smallwood, Smith, Surfleet, Thomas, Thomson, Timmins, Turner, Vizer, Wallace, Ward, Williams, Williamson, Wilson, Wootton.

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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, July 9, 1903.

The Edinburgh Major Questions appear in this issue.

Wholesale Druggists' Picnics are reported this week, and accounts of various excursions are recorded.

The Library, School, and House Committee met on Wednesday last; several donations to the Library and Museum were reported.

The Markets in Drugs and Chemicals continue dull. At to-day's auctions little occurred worthy of special note. The bark auctions are also reported.

The Annual Report of the Proprietary Articles Trade Association states that the membership of the Manufacturers' Section has during one year increased from 73 to 123.

A Prosecution under the Medicine Stamp Duty Acts was heard at Marlborough Street Police Court, W., on Wednesday of this week. Defendant was fined four guineas, including costs.

The Chemists' Defence Association reports a large increase in membership and a slight deficit on the year's working. The demand upon the services of the Association's legal advisers has been much heavier than hitherto.

Several Local Associations have met during the week, and meetings have been held at Preston, Burnley, Halifax, Blackburn, and Kingston. At each of these the Board of Inland Revenue's action has formed the basis of discussion.

The List of Papers to be read at the British Pharmaceutical Conference is published, together with suggestions for papers issued by the officials of the Section on Practical Pharmacy of the American Pharmaceutical Association, which meets at Mackinac Island, Michigan, in August next.

Whether Doctors should Dispense or not is dealt with editorially in this issue. A correspondent thinks there is little hope of any arrangement being arrived at. The advice given by the town clerk to the Ephesians should recommend itself to chemists considering the suggestion.

Blue Pills were the subject of an interesting, but unsuccessful prosecution undertaken at Guildford by the Surrey County Council. "Blue pills" were asked for, without any specific mention of the strength required; the pills sold were proved to be equivalent to 3 gr. each of the Pilula Hydrargyri of the British Pharmacopœia, and the case was consequently dismissed.

The Council of the Pharmaceutical Society of Ireland held its monthly meeting on July 1. Mr. Watson was co-opted a member of the Council in the room of Mr. George Howel Grindley, deceased. The President, Vice-President, and the Ex-President were appointed to present an address from the Council to His Majesty the King on the occasion of his visit to Dublin.

The Laboratories and Stables of the Jenner Institute of Preventive Medicine were inspected on Friday, July 3, by a large party, at the invitation of Lord Lister and the governing body of the Institute. A number of medical men and pharmacists were present, keen interest being taken alike in the bacteriological laboratories and in the variously inoculated animals in the stables and grounds.

A Prosecution at Leeds, at the instance of the Pharmaceutical Society, under Section 17 of the Pharmacy Act, was successful, a penalty of 20s. and costs being imposed. The case was remarkable for some very curious and self-contradictory evidence given by the defendant, and for an important discovery made by the Stipendiary Magistrate with regard to the concealment of a name on a label.

The Medicine Stamp Difficulty is the subject of much comment in this issue. It has been the basis of several questions in the House of Commons. A number of correspondents give their views; some think it would be inadvisable to abolish medicine stamp duty, and others are of opinion that it would be unwise to take steps to get any alteration, lest in so doing the chemist should lose what little privilege over the unregistered man he already has. The question is dealt with editorially, and a suggestion which was made some years ago in reference to an unofficial formulary receives the approval of correspondents.

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A SUGGESTED CHEMISTS' FORMULARY.

The medicine stamp difficulty continues to be the chief topic of interest amongst chemists and druggists, many of whom express their views on the subject in the current issue of the Journal, while several local associations, the proceedings of which are duly reported, have also had the matter under consideration. It is satisfactory to note that there is a fairly general feeling that it would be a grievous mistake to support any proposal for abolition of the medicine stamp duty. Another matter for congratulation is the fact that the Board of Inland Revenue (see p. 61) has consented to extend the time for the sale unstamped of preparations bearing a descriptive title such as "Cough Mixture," until December 31 next. Chemists and druggists should now endeavour to arrive at a common understanding with regard to the course to be pursued. Numerous expressions of opinion as to what that course should be have now been furnished for the consideration of the Council of the Pharmaceutical Society, including the suggestion that a chemist's formulary, or unofficial pharmacopœia of approved remedies, should be compiled and published. With regard to that suggestion, it may be stated that, rather more than two years ago it was pointed out in these columns (see *P.J.*, March 2, 1901) that an opening appeared to exist for an unofficial supplement to the British Pharmacopœia, containing formulæ for unofficial remedies which are in constant demand. It is generally recognised that the wants of pharmacists and of the general public are not fully met by the national medicine book, since the compilers appear to have acted on the assumption that no medicine is used except such as is prescribed by medical practitioners. But a large proportion of the medicine used in this country is supplied to the order of private individuals who require articles for which there is no standard in the Pharmacopœia, and it was felt that it would be a distinct advantage if definite standards were recognised for all medicines. When the articles asked for by customers are included in the Pharmacopœia there should be no difficulty about the question of standards, but frequently such is not the case, and it is then probable that customers will not at all times and places be supplied with the same article under a given name. Numerous medicines in constant demand are excluded from the Pharmacopœia because they are not known by, or do not commend themselves to, those members of the medical profession who happen to be consulted while the book is being compiled. As a result, many well-tried and useful remedies in common demand tend to vary in strength and composition in different parts of the country, because they are not prepared in accordance with any recognised standard.

The suggestion was therefore made that it might prove advantageous to produce a compilation of old and new medicines which are not recognised in the British Pharmacopœia. Such works exist in Germany and America, where they fill the numerous gaps left by the national pharmacopœias, besides serving as important supplements and feeders to the official works. In addition, lists are published in Russia and Austria of simple remedies which may legally be supplied by pharmacists without medical prescriptions. Gray's 'Supplement to the Pharmacopœia' might have served a similar purpose in this country if it had survived until the present day, but that work has long been out of print; it was, therefore, suggested that something might be done to meet the want by publishing, from time to time, in a special column of the *Pharmaceutical Journal*, approved formulæ for old and new galenical preparations, the London Pharmacopœia formula for milder mercury ointment being quoted as an instance of the former. Similarly, it was pointed out, useful formulæ for new galenical preparations, such as are continually being published, might well find place in an unofficial formulary which pharmacists should agree to regard as authoritative. Readers of the Journal were asked to express their views upon the subject and—if they approved of the idea that such a supplement to the Pharmacopœia should be compiled—to suggest suitable formulæ for inclusion therein, after due consideration and discussion by pharmacists at home and abroad. But nothing came of the matter at the time the suggestion was thrown out, and no action has since been taken in the direction indicated.

Attention has, however, been once more directed to the subject as the outcome of the change in practice announced by the Board of Inland Revenue. That body has intimated that all compounded medicines designated by the names of diseases or organs of the body—such as "Cough Mixture," "Liver Pills," etc.—will henceforth be considered liable to medicine stamp duty, unless the composition of the remedies be fully disclosed, either by printing the formulæ on the labels, or indicating thereon in what standard book of reference the formulæ may be found. That is to say, chemists and druggists must be prepared to affix stamps to bottles or boxes containing cough mixture, liver pills, etc., if they wish to retain such preparations in the category of secret remedies, but the necessity for so doing will not exist if the remedies are prepared in accordance with published formulæ, and that fact is indicated on the labels. The formulæ must appear in a standard book of reference, such as the British Pharmacopœia, the B.P.C. Formulary, the French Codex, Braithwaite's 'Pharmaceutical Formulary,' etc., etc. Moreover, an inquiry addressed to the Secretary of the Board of Inland Revenue has elicited the following reply:—

> The fact that an article is prepared according to a formula which appears in the 'Pharmaceutical Journal Formulary,' and that a statement to that effect is made on the label will be regarded as evidence that the article is an approved remedy, and therefore within the exemption relied on by the defendant in the recent case of Farmer *v.* Glyn-Jones, unless the original vendor made the article dutiable.

The formulary named in the foregoing extract does not exist at present, but the advantages such a publication would offer should be obvious to chemists and druggists who are at present much concerned how to overcome the difficulties created by the Board of Inland Revenue's change in practice. In this connection, attention may be directed to the letters by Mr. James Lees and others, which will be found in this week's Journal, also to that, signed "Salol," which appeared last week (p. 34). Further communications on the subject will be welcomed by the Editor, especially if they contain practical suggestions as to the manner in which the project, if approved, should be carried out.

A DISPENSING DIFFICULTY.

The views of a physician, which were recorded in our issue of last week, concerning the question of dispensing by doctors, have, as was anticipated, received much consideration from pharmacists. And the matter is one which calls for very careful inquiry. It is, moreover, a question which must be approached without animosity and in a spirit of compromise. It must be borne in mind by chemists that doctors are strictly within their legal rights in dispensing their own medicines. Therefore, should practitioners concede to chemists that side of their practice, it would be done of their own free will. The practitioner whose views were recorded is of opinion that the only way of bringing about such a desirable state of affairs is by an Act of Parliament. Without expressing disagreement with him on this point, it is necessary to recognise the difficulties which beset such a course. No one can be more painfully aware of the difficulty of procuring legislation affecting the practice of pharmacy than chemists themselves. However reasonable and just the demands may be, legislation is always a slow process and, even when a change is obviously desirable for the well-being of the public, it does not always seem to hasten matters. Moreover, the question here arises as to what view the public would take of the suggested action? It is doubtful whether, at the present moment, it would meet with their approval; they consider these matters from a point of view altogether different from that from which the medical profession and pharmacists regard them. In any case, legislation could not be obtained without much unnecessary, undesirable, and possibly, undignified controversy. In view of this it would probably be far more satisfactory to try what extensive local arrangements will do; such arrangements would require the effective local organisation of both sides concerned and would undoubtedly be the best means of educating public opinion and so paving the way for parliamentary action. It is needless to say that profit-sharing arrangements between individual chemists and doctors are not referred to here.

The physician interviewed very appropriately pointed out that in France and in other Continental countries the general public were better protected, whilst the doctor and the chemist stood higher in their esteem by reason of the arrangements which existed between the two branches of the medical profession. This is undoubtedly a very strong argument in favour of his contentions, and it is unnecessary here to go into the reasons which induced the Legislature in those countries to adopt such a measure. There is little doubt that a medical man who does not dispense is better esteemed by his patients than one who does, and there can be no possible doubt that it is advisable for a practitioner to stand high in public opinion.

But before medical men are asked to relinquish the pharmaceutical side of their profession entirely, it seems only reasonable that it should be made clear to them that such an undertaking would not diminish their incomes; and since in districts where the doctors have once given up dispensing they have rarely re-commenced it, this should not be difficult. As regards the other side of the question, prescribing by chemists, it is difficult to define exactly what is meant by the term. Chemists, however, should bear in mind that pharmaceutical training does not include those subjects which enable the medical profession to diagnose ailments, and that the treatment of disease requires something more than a mere enumeration of symptoms by the patient. The matter is one which could profitably be discussed by local associations, the members of which will doubtless recognise the advisability of approaching the problem in a friendly spirit.

POISONS IN PROPRIETARY MEDICINES.

The *Medical Press* comments on the alarming growth of the "cocaine habit" in the United States, and proceeds to discuss the dangers of poisonous proprietary medicines, thus:—

> Under a captivating title a purchaser may be buying a strong alcoholic preparation, with or without cocaine —a nerve invigorating wine, or mixture, a preparation that might under certain conditions be a very valuable medicine, but one which could not honestly be recommended for general use. We think that it is necessary to take steps to prevent this demoralising cocaine habit from spreading to this country, and we do not think that the public are sufficiently protected by the existing laws that regulate the sale of scheduled poisons. We should like to prohibit the sale of scheduled poisons in the proprietary medicines, or their sale for internal use, except in a preparation prescribed by a registered medical practitioner, and that a prescription containing any such poison should not be repeated. As the law is, a prescription, no matter what poison it contains, may be repeated again and again, and is not infrequently lent from patient to patient. This calls for change, and the prescriber can do much to lessen this danger by stamping his prescription "not to be repeated." We would further desire that all proprietary preparations containing poisons have their exact formula written on the label, and that all those containing alcohol should have the quantity and strength of the spirit contained plainly marked both on the wrapper and label, so that a man may not unconsciously be bringing home to his sick child a cold punch and a cocaine nerve "restorer."

Though one or two of the suggestions are not very practicable, the above quotation may be taken as representing very fairly the typical medical view of a question which is, and seems likely to remain, of no little moment.

PROVINCIAL UNIVERSITIES.

The speech delivered by Mr. Chamberlain on Saturday, at the degree congregation of Birmingham University, was mainly congratulatory and expressive of hope for the future prosperity of the institution of which he is Chancellor. The faculty and degree of commerce were specially mentioned. The Colonial Secretary thinks that the curriculum which has been adopted under the leadership of Professor Ashley will be found to give such an education as will undoubtedly promote both the happiness and the practical prosperity of those who take advantage of it. Birmingham will give in the first place that general education and culture which must be the foundation of all teaching, and will endeavour to specialise it by paying particular attention to such questions as economics, modern languages, accounting, commercial law, commercial history, and commercial geography. Mr. Chamberlain welcomed the proposal of Lord Rosebery, but said it was well to remember that some provincial Universities had already done much in the same direction. Lord Rosebery was performing an act of "unconscious imitation." When the reorganised Universities and new Colleges were completed there would be in England, as there was already in Germany and in North America, a network of institutions, all of which might help each other. These modern Universities must of necessity be specialised to suit the conditions of the district in which they were established. Mr. Chamberlain continued:—

> May it not be, then, in the future that we can exchange ideas, and even exchange students, and that many students, as in Germany already, may find that their full course can only be completed by going from one University to another, and seek in each what it is best fitted to afford. In fact, what I want, not in education alone, is a real free trade. I desire that every University shall supply what it is best fitted to produce, and that then there shall be an open market, all these products shall be interchangeable, and all fresh knowledge shall be welcomed in all these Universities. I hope, under those circumstances, that there need be no fear of unfair competition, and if we succeed so far I believe that we shall raise the standard of education in this

> country, that we shall very largely increase the number of those who avail themselves of it, that we shall prepare ourselves for the great struggle with our rivals which is inevitable, and if then we fail in that struggle it will not be because we have neglected the opportunities or have not secured the training which these rivals and competitors of ours are making the most vigorous efforts to supply for themselves.

The Technical Instruction Committee of the West Riding County Council have recently discussed the situation created by the dissolution of the Victoria University, and the proposal to establish new Universities in Leeds and Sheffield. In their report, presented on Wednesday to the County Council, they state that, while adhering strongly to the views expressed when the dissolution of the Victoria University was under consideration, they are of opinion that the decision of the Privy Council has fundamentally altered the conditions, and that it would be unwise to make any attempt to impose federation upon the University Colleges of Yorkshire. The Committee asked the Council to adopt the following resolution;—

> That the Privy Council be informed that this County Council desire to support the petition of the University College, Sheffield, that a charter be granted establishing a separate University in Sheffield, but that this County Council disagree with the opposition of the Sheffield University College to the proposal that the name of the University which will replace the Yorkshire College should be the Victoria University of Yorkshire.

Principal Hopkinson, Vice-Chancellor of the Victoria University, has alluded to the growing tendency to draw to London the available talent of the country in the various professions, in science, literature, and generally. While Professor Hopkinson welcomes the increased vigour of local life in London, and hopes that the two older Universities may always maintain their position as ancient centres of national culture, he holds it to be necessary that throughout the country, in the greatest centres of population, there should be homes of science and learning, infusing their influence into all classes of the community and giving the training required for those who are entering the various walks of practical life.

DANGER TO ANIMALS FROM POISONOUS SPRAYS.

In the *Pharmaceutical Journal* for April 11 last, Mr. Henry Johnson directed attention to the danger to animal life arising from the use of arsenical weed-killers and similar preparations. Subsequently the *Morning Post* expressed the hope that the question might soon be definitely settled whether wild animals would eat foliage after it had been sprayed with poisons, and whether the fact of their doing so would be injurious. In an editorial note which appeared in the Journal for April 25, at page 600, it was stated that the answer was self-evident, but it was suggested that chemists and druggists residing in the country should collect evidence in support of the contention that the use of poisonous sprays does constitute a danger to animal life. So far the chemists and druggists of the country have not forwarded any information to "headquarters" on the point, but conclusive evidence has been supplied by Vice-Consul A. W. W. Woodhouse (Nicolaieff), who, in a report dealing chiefly with agriculture in South Russia, writes as follows:—"Locusts are again appearing in large numbers. Successful attempts were made by an entomologist last June to poison some fields by sprinkling them with a solution of 1 lb. of Paris green to 15 gallons of water. The larvæ, which were in the second and third stages at the time, were nearly all found dead by the evening of the third day. Care must be taken to keep sheep and cattle from such poisoned fields, as on the occasion in question some stray animals were poisoned a week after the experiment. . . . . The Siberian marmot still requires attention, as although its numbers have been sensibly reduced by poisons and traps, it continues to occupy a prominent position among the farmers' enemies. The poison used is arsenic, with which grain is treated and dropped into the marmot holes. The trapping process is the better one, as useful birds are not endangered thereby; it is enforced by the rural administration."

THE RAIN AS A CLEANSING AGENT.

Some interesting facts regarding the purifying effect on the air of heavy rain are given in the *Lancet*. The writer says:—We have often pointed out that the passage of raindrops through the air not only purifies the air, but imparts a freshening effect to it, due possibly to an oxidising action and perhaps to the formation of peroxide of hydrogen. Everyone is familiar with the "clean" smell of the air after a rainstorm. According to this view the air of the county of London must have sustained a very thorough scouring during the remarkably continuous rainfall which began on Saturday, June 13. There was very little movement in the air, and an opportunity was thus afforded of collecting the water for analysis, the results of which would represent some at any rate of the impurities washed out of the air immediately over this area. The following were the results obtained with raindrops caught in the neighbourhood of the Strand on Monday, June 15:—

	Grains per gallon.
Total solid matters	9·100
Common salt	0·800
Ammonium sulphate	0·652
Organic ammonia	0·011
Soot and suspended matters	5·000
Nitrates	None.
Nitrites	Very distinct.

The amount of ammonia in the form of sulphate is remarkable, and, of course, its chief origin is the combustion of coal. The nitrites with traces of ammonia are due to electrical discharge in the atmosphere. These results when worked out with the total rainfall give some remarkable figures. Taking the rainfall as 3·8 inches in five days (though a higher figure than that has been returned by some observers) we arrive at the calculation, based on each inch representing 22,622 gallons of water falling upon one acre and the London county acreage as 74,839, that no less than 6,437,229,860 gallons of water were poured over this area. And according to the above results of the analysis of the rain-water this enormous volume represents the washing out of no less than 3,738 tons of solid impurities, of which 330 tons consisted of common salt, 267 tons of sulphate of ammonia, and 2,000 tons of soot and suspended matters. Regarding the combustion of one ton of coal to produce twenty pounds of ammonium sulphate (a very fair average) the quantity of coal represented by the ammonium sulphate washed out by the storm would be 29,904 tons. It need hardly be added that the purification is not only, as is here shown, mechanical, physical, and chemical, but bacteriological also.

THE RELATION OF CHEMISTRY TO PHARMACY.*

BY PROFESSOR PARTHEIL.

The relation in which chemistry stands to pharmacy is quite different now from what it was at the beginning of the last century. At that time it was customary to apprentice a young man to a good pharmacist in order that he might learn chemistry, but now that chemistry has gained an independent position and possesses better buildings and greater educational facilities than exist in the pharmacist's laboratory, and now that the pharmacist has ceased to make his own preparations, the pharmacy laboratory has ceased to be the nursery of the young chemist.

The fact that the production of pharmaceutical chemicals has passed from the hands of the pharmacist to large establishments from which the pharmacist purchases his supplies, renders it more necessary than ever that he should be in a position to test these and determine their value as medicines. Similarly, he also requires a much more profound knowledge of botany and pharmacognosy than heretofore, as he now no longer collects, dries and powders his own drugs; he must therefore be able to identify purchased drugs both entire and powdered, to determine their purity, and to ascertain the proportion of active constituent that they contain.

In order to understand and to be able to carry out the numerous tests necessary for these purposes, the pharmacist must have a sufficient grounding in pure chemistry and also a thorough grounding, both theoretical and practical, in pharmaceutical chemistry.

Pure chemistry and pharmaceutical chemistry deal with the same substances and employ the same methods; the difference between them is a difference in problems and in aims. Pure chemistry inquires into the properties of the substance with which it deals, their reactions with one another, and deductions that can be drawn for these; its task is the search for truth; its aim, knowledge. Pharmaceutical chemistry inquires what properties a substance must possess to be suitable for use as a medicine, what impurities are likely to be present, how they may be detected and removed. The task of pharmaceutical chemistry is the inquiry into the suitability of a substance for medicinal use; its aim, the application of this knowledge in practical pharmacy.

The following example may serve as an illustration:—For the student of chemistry it may suffice if he know that sulphur is obtained in Sicily either by melting the crude material in large mounds covered with earth (calcaroni) or in special furnaces by means of superheated steam; that in many places it is distilled from clay retorts; that the crude sulphur is purified by a second distillation from iron retorts and is then cast into sticks; that if the sulphur vapour is rapidly cooled by conducting it into a chamber through which cold air is passing, it is condensed to a fine, yellow powder (flowers of sulphur).

The pharmaceutical chemist, on the other hand, must have a more intimate knowledge of the preparation of crude sulphur and of its purification; he must also know its properties and the tests prescribed by the Pharmacopœia. The further purification of the sulphur interests him; he must know the object of macerating it with ammonia, and be acquainted with the reactions that take place, *i.e.*, with the formation of ammonium sulphate from sulphuric acid and of ammonium sulpharsenate, disulphoxyarsenate, and sulphoxyarsenate from any arsenium pentasulphide that may be present. Milk of sulphur makes still greater demands upon his knowledge than this.

The Pharmacopœia makes use of several purely physical means of testing drugs, viz., the specific gravity, the melting point, boiling point, and solubility. The chemical methods are partly qualitative, partly quantitative, the latter being either gravimetric or volumetric. For the volumetric determinations centinormal solutions are frequently employed, and it is scarcely necessary to say that the skill requisite for the proper performance of these numerous and often delicate operations cannot be learnt in the lecture theatre or in the chemical laboratory during the ordinary course of practical chemistry. For this purpose a course of practical instruction in a pharmacy laboratory is a necessity. In such a laboratory these methods are to be practised, and thereby the senses made more acute in this particular direction.

Under the present conditions the pharmacist requires a more thorough grounding in chemistry and physics than has hitherto been the case. But for the practising pharmacist the chemistry that he learns from a "pure" chemist is insufficient for his purpose. He requires a knowledge of chemistry applied to pharmacy, and this can only be taught him by a man who has learnt it by observation and practical experience.

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* Abstracted from a paper in the *Apotheker Zeitung*.

THE PRESERVATION OF BOOKS IN HOT CLIMATES.

BY FRANK BROWNE,

Government Analyst, Hongkong.

Books in hot climates quickly deteriorate unless carefully seen after. There are three destructive agencies which have to be guarded against—(1) damp, (2) a small black insect, (3) cockroaches.

(1) Books which are kept in a damp atmosphere deteriorate on account of moulds and fungi which grow rapidly when the conditions are favourable. Books are best kept on open, airy, well-lighted shelves. When there has been a prolonged spell of moist weather their covers should be wiped, and they should be placed in the sun or before a fire for a few hours. Damp also causes the bindings and leaves of some books to separate.

(2) A small black insect, one-eighth of an inch long, and a sixteenth of an inch broad, somewhat resembling a beetle, is very destructive, and books will be found, if left untouched, after a few months to have numerous holes in the covers and leaves sufficiently large for the animal to pass through. If this insect be allowed plenty of time for its ravages it will make so many holes that bindings originally strong can be easily torn in pieces. All damage may be prevented by coating the covers of books with the varnish described under (3). When books are found to contain the insects they should be well rapped and put into the sun before varnishing.

(3) The appearance of a fine binding may be destroyed in a single night by cockroaches. The lettering of the binding may, in two or three days, be completely obliterated.

The following varnish has been found to prevent effectually the ravages of cockroaches and of all insects that feed upon books:—

Dammar resin	2 oz.
Mastic	2 oz.
Canada balsam	1 oz.
Creosote	½ oz.
Spirit of wine	20 fl. oz.

Macerate with occasional shaking for a few days if wanted at once, but for a longer time when possible, as a better varnish will result after a maceration of several months.

Where it is necessary to keep books or paper of any description, in boxes, cupboards, or closed book-cases, some naphthalene balls or camphor should be always present with them. If camphor be used it is best to wrap it in paper, otherwise it volatilises more quickly than is necessary. In dry weather the doors of closed book-cases should be left open occasionally as a damp still atmosphere is most favourable for deterioration.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Chromium Silicides.

Four silicides of chromium have been isolated by P. Lebeau and J. Figueras, $SiCr_3$, $SiCr_2$, Si_2Cr_3, and Si_2Cr. $SiCr_3$ is obtained by fusing together a mixture of chromium, copper, and a little silicon. The button obtained after alternate treatment with HNO_3 and dilute NaOH gave a residue composed entirely of prismatic crystals of that silicide. When more silicon was used, besides these crystals of $SiCr_3$, others of a different form were produced, which were lozenge-shaped and had brilliant facets. These were found to have the composition $SiCr_2$. On further increasing the quantity of silicon another form of crystals, in long brilliant needles, was obtained; this proved to be Si_2Cr_3. The use of a yet greater proportion of silicon resulted in the formation of small dark-coloured crystals, much less brilliant than the preceding silicides, which were no longer formed. These had the composition Si_2Cr. Of these silicides only Si_2Cr_3 is new. It occurs in long rectangular prisms, having the sp.g. 5·6; it scratches glass, but not quartz. It combines with chlorine with incandescence, forming chromic and silicon chlorides. Bromine only attacks it at a red heat, and iodine has no action on it. It is unaltered in the air; when heated to 1,100° C. it becomes covered with a thin iridescent coat of oxide, which hinders further oxidation. Gaseous HCl decomposes it, forming chromous chloride. Cold hydrochloric acid in aqueous solution is without action, but strong solutions dissolve it readily on warming. H_2SO_4 and HNO_3 have no action on it, but HF attacks it in a few moments. KNO_3 and $KClO_3$ in fusion, which react energetically with the carbides of chromium, have no action on Si_2Cr_3, but alkaline carbonates readily decompose it.—*Comp. rend.*, **136**, 1,329.

Copper Arsenide.

Copper and arsenium readily combine, according to A. Granger, when the latter in the form of vapour is brought into contact with the heated metal. When the operation is conducted in the vapour of sulphur, at 440° C., the arsenide is formed in a crystalline condition in small rhombohedra of the cubical system. It then has the aspect of a steel-grey, metallic powder, with a bluish tinge. It is the same body which is formed on copper when the familiar Reinsch test is performed, but under these conditions the compound is amorphous. The formula for this arsenide is Cu_5As_2. The same body is also obtained at higher temperatures than that of boiling sulphur, if the arsenium vapour be always in excess; if not, the amorphous arsenide Cu_3As is formed. Copper gives with phosphorus Cu_5P_2, analogous to the above-described arsenide, but it is only formed at a high temperature; at lower temperatures the phosphide Cu_2P results.—*Comp. rend.*, **136**, 1,397.

Determination of Chloroform Vapour in Air.

For the rapid determination of the quantity of chloroform vapour present in mixtures of chloroform vapour and air, a method which has been found fairly satisfactory is based on the alteration of pressure produced by the absorption of the chloroform vapour by olive oil. Waller and Geets recommend direct weighing of a flask filled first with air and afterwards with the mixture. A series of experiments with the two methods have been found to corroborate sufficiently nearly. It is pointed out that it is also important that students should become familiar with the smell of mixtures of known percentage.—*B.M.J.*, **2,216**, 1,421.

Synthesis in the Tropine Group of Alkaloids.

A useful summary of work relating to this will be found in *Pharm. Centralh.*, 1903, 217, for details of which the original paper should be consulted.

Electrolytic Production of Alcohols from Salts of Organic Acids.

According to a process patented by Most (*Chem. Ztg.*, 1903, 104), the electrolysis of salts of aliphatic acids, or aromatic acids which contain the carboxyl group in an aliphatic side-chain, leads to the production of the corresponding alcohols. Thus, sodium acetate yields, under certain conditions, 37 per cent. of the theoretical yield of alcohol; with the higher fatty acids the yield is smaller. In the case of polybasic acid, under certain conditions, only one of the carboxyl groups may be replaced by hydroxyl.—*Pharm. Centralh.*, 1903, 176.

Lubricant for Compressed Tablets.

A substance strongly recommended as a lubricant in making tablets, under the name, "Nucoa," is shown to be simply coco-nut oil.—*Ztschr. f. öffentl. Chem.*, 1902, 447, through *Pharm. Centralh.*, 1903, 231.

Diminution of Lecithin in Heated Milk.

Bordas and Raczkowski state (*Chem. Ztg.*, 1903, 57) that milk heated over the naked flame for three minutes shows a loss of lecithin amounting to 28 per cent. of the quantity present in the fresh milk. Heated for the same time and to the same temperature over a water-bath, the loss amounted to 12 per cent., while in an autoclave at 105°-110° C., 30 per cent. was lost. To this loss of lecithin the authors attribute the disturbances of digestion shown by newly-born children nourished entirely on sterilised milk.—*Pharm. Centralh.*, 1903, 179.

Determination of Formaldehyde.

Carl Wallnitz publishes in the *Deutsch. Gerberztg.* an account of an experimental comparison of the relative merits of the published methods for determining formaldehyde in commercial solutions of that substance. He recommends as most trustworthy the methods known as Blank-Finkbereiner and Romiju's, with the modifications mentioned below. In the first mentioned the action of the hydrogen peroxide should be allowed to continue for half-an-hour, and not three to ten minutes as formerly recommended. In the latter, at least 70 C.c. of N/5 iodine solution should be added to 5 C.c. of a solution containing about 2 per cent. formaldehyde, and the oxidation allowed to proceed for ten minutes at least. The urotropin method, in which excess of ammonia is added, the mixture set aside two to three hours, and the excess of ammonia determined by titration with acid, gives results 0·4 per cent. lower than the two methods given above. Legler's method also gives lower results, and the colour indication in the titration, as is also the case in the urotropin method, is not sharp. Vanino's silver method also gives results too low. Schiff's method, recently described in this Journal (*P.J.* [4], **16**, 673), gives good results with the following modifications: the potash solution should be added to the extent of 50 C.c. N/2 KOH and, before titrating back with N/10 sulphuric acid, allowed to stand three hours at ordinary temperatures, or one-and-a-half hours at 50° C. Even then the colour change is not sharp.—*Chem. Ztg. Rep.*, 1903, 85.

Gelatin and Methylated Spirit.

Harold Holcroft publishes the results of a series of experiments, showing conclusively that if gelatin be placed in a mixture of methylated spirit and water there is not, as has sometimes been thought, any selective absorption of the water by the gelatin, whether the proportion of alcohol be large or small.—*Brit. Journ. Photog.*, **50**, 486.

Phyllotaxis of Leaves.

Percy Groom has studied the transition of opposite leaves into the alternate arrangement. By plotting the length of the internodes in *Atriplex rosea* in a given manner, a regular curve was produced; when this principle was applied to *Chenopodium* and *Salsola* an entirely different result came out, and a zig-zag course was plotted, due to the long and short internodes alternating. At first he suspected this might be due to its nearness to salt water, but inland specimens told the same tale, and neither the influence of day and night nor of salinity could account for it. His belief was that the fusion of branch and stem was the true solution, for axillary branches are given off, but without visible traces of the fusion which does exist; in *Salicornia*, for instance, the leaves are fused up to the next node above. Continuing his observations, the author examined *Scrophularia nodosa*, which showed leaves opposite at the bottom, while the inflorescence was alternate; *Symphytum* showed the same, but *Rhinanthus crista-galli* presented a curious anomaly: the leaves were commonly opposite, but sometimes the tip showed a cleft, becoming distinctly bilobed, and then, by displacement, passing into the alternate arrangement. *Lysimachia vulgaris* first showed opposite leaves, then by the process last described, splitting at the apex and becoming distinct, a whorl of four leaves finally appeared. The author lays stress on the fact that he took his examples at random, as they came to his hand, and they were not specially selected.—*Proc. Linnean Soc.*, June 4, 1903.

Logwood.

Some interesting information concerning logwood is contributed by F. S. Earle. It is well known to those who use this wood that it is by no means always of equal quality. That which is inferior is known to the dealers as bastard logwood. In Jamaica trees are found occasionally in which little or no hæmatoxylin is present, but in its place a substance yielding a dull yellowish-green dye. Such wood is rejected by logwood buyers, since it not only yields none of the desired colouring material, but if mixed with normal wood in any quantity does harm by spoiling the tint of the extracts. As the amount of this bastard logwood has been increasing lately in Jamaica, Professor Earle was asked to investigate the cause. He reports that logwood is a variable plant showing marked differences in form, colour, and texture of leaf, time of blooming, form and extent of the ribs on the trunk, colour of bark, and especially in the colour and dye-producing quality of the heart-wood. Four well-marked varieties are said to be recognised in Honduras, and three are usually recognised in Jamaica, but there are many intermediate forms. Professor Earle is of opinion that this variation is not the result of disease or of any lack of vigour, is affected neither by soil or climate, since normal and bastard trees are found growing side by side, nor is it the result of immaturity. It is apparently a matter of heredity, and the increase is probably due to the fact that trees chipped into and found to be bastard trees are not felled but allowed to stand and thus propagate from seeds. Unfortunately these trees do not possess constant differences in leaf or trunk by which they may be recognised.—*Bull. Dept. Agricul. Jamaica*, i., 31.

Colour of Juniper Berries.

A. Lendner has inquired into the cause of the change of the colour of juniper berries from green to purple during the ripening. Nestler attributed this to the presence and action of a fungus, but Lendner shows that it is a normal change that takes place only in the presence of oxygen, and is brought about by the peroxides and peroxydases, present in the peripheral cells of the unripe fruit, acting upon tannoids and resinous bodies.—*Bull. des Sciences Pharm.*, **5**, 113.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

LIBRARY, MUSEUM, SCHOOL, AND HOUSE COMMITTEE.

At a meeting of this Committee, held July 8, 1903, the following reports were presented:—

Attendance in the Museum.

	Total.	Highest.	Lowest.	Average.
London, June	586	46	11	23

Donations to the Museum.

Professor A. Herlant, Brussels:—Specimen of bark and fruit of a tree, from the Congo.

Mr. W. Fawssett:—Specimen of the bark of *Salix* sp. used in his experiments on Salicin production.

To the Herbarium.

Mr. L. G. H. Cooper, West Rasen:—Six specimens of Willows cultivated in Great Britain as osiers.

Mr. J. H. Maiden, Director, Botanical Gardens, Sydney:—A Critical Revision of the Genus *Eucalyptus.*—Part II.; also, Is Eucalyptus Variable?

Professor T. R. Fraser, Edinburgh:—*Acokanthera schimperi:* Its Natural History, Chemistry, and Pharmacology.

To the Museum in Edinburgh.

Dr. Gordon Sharp:—Specimen of the Stem of *Strychnos toxifera*, collected by M. J. J. Quelch on the Urali Mountains of British Guiana.

The Curator reported that the Museum specimens lent to Mr. L. Ough for illustrating a lecture on Production of Species of Citrus, had been returned uninjured.

The Curator applied for leave of absence to attend the Meeting of the British Pharmaceutical Conference at Bristol.

Attendance in Library.

	Total.	Highest.	Lowest.	Average.
London, June	400	27	5	16

Circulation of Books.

	Total.	Town.	Country.	Carriage Paid.
London, June	201	128	73	12s. 4½d.
Edinburgh, June....	309	179	130	5s. 3d.

Donations to the Library (London).

Professor Greenish:—The Microscopical Examination of Foods and Drugs, 1903.

Mr. J. H. Maiden, Sydney;—A Critical Revision of the Genus Eucalyptus, Part II., 1903.

Professor Dr. A. Meyer, Marburg:—Practicum der botanischen Bakterienkunde, 1903.

University of Edinburgh:—Calendar, 1903.

Nova Scotian Institute of Science:—Proceedings and Transactions, Vol. X., Part IV.

American Pharmaceutical Association:—Proceedings, Vol. L., 1902.

Messrs. Whitaker and Co., London:—The Apothecaries' Hall Manual, by Mabel Thomson, 1903.

Pharmacy Board of Victoria:—Report for 1902.

Donation to the Library (Edinburgh).

Pharmacy Board of Victoria:—Report for 1902.

Purchase of Books.

The Committee authorised the purchase of the undermentioned books:—

For the Library in London.

Greenish:—The Microscopical Examination of Foods and Drugs, 1903. Two copies.

Lachman:—The Spirit of Organic Chemistry, 1899.

Massee:—Plant Diseases.

Blyth:—Foods, 5th ed., 1903.

Rektorik:—Præparata Pharmaceutica, 1903.

For the Library in Edinburgh.

Greenish:—The Microscopical Examination of Foods and Drugs, 1903.

Blyth:—Foods, 5th ed., 1903.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

MAJOR EXAMINATION QUESTIONS (EDINBURGH).

July, 1903.

CHEMISTRY.

Time allowed, Three Hours.

Four questions only to be attempted.

1. Give an account ofthe differences in chemical character between cobalt and nickel which are taken advantage of for the analytical separation of these elements.

2. How would you estimate the relative proportions of chlorine and bromine in a mixture of chloride and bromide of silver.

3. The formula for water is taken to be H_2O where $H = 1$ and $O = 16$. What reasons can you give in favour of this formula as against HO where $H=1$ and $O=8$? Give reasons in support of any theoretical assumption involved in your argument.

4. Give an account of the evidence which can be brought forward in proof of the generally accepted constitution of:—
   (*a*) Acetic aldehyde.
   (*b*) Urea.
   (*c*) Glycerol.

5. Give an account of the properties and constitution of the lactic acids. Give the names and formulæ of any isomers of lactic acid known to you.

6. Describe the preparation of benzaldehyde from:—
   (*a*) Amygdalin.
   (*b*) Benzal chloride.
   (*c*) Benzoic acid.

PHYSICS.

1. Discuss the difference in meaning between the following terms:—
   (*a*) Mass and weight.
   (*b*) Density and specific gravity.
   (*c*) Refraction and dispersion.
   (*d*) Heat and temperature.
   (*e*) Latent heat and specific heat.

2. What methods would you adopt in order to determine—
   (*a*) The internal resistance of a Bunsen cell?
   (*b*) The electromotive force of a Bunsen Cell?
   (*c*) The specific conductivity of a liquid?
   (*d*) The specific resistance of a metal?

3. Describe the Bunsen calorimeter, and explain how you would use in order to determine the specific heat of a metal.

4. What do you understand by the following terms:—
   (*a*) The refracting angle of a prism?
   (*b*) The refractive index of a liquid?
   (*c*) A direct vision spectroscope?
   (*d*) A spectrometer?
   (*e*) A collimating lens?

BOTANY.

Time allowed, Two Hours.

1. Make a drawing in detail of the transverse section of a leaf of a typical Dicotyledon. Explain how the structure is in accordance with the function.

2. Describe and illustrate, with drawings, the structure of a typical ovule of an Angiosperm, and give a full account of its behaviour during the development of the embryo.

3. Give a full account of the movements of water in aerial plants.

PRACTICAL MATERIA MEDICA.

Time allowed, One and a-Half Hours.

1. Make transverse and longitudinal sections of the leaf provided. Draw and describe them, pointing out the characteristic features by which the leaf is identified.

2. Report on the specimen of powdered hyoscyamus leaves. State your reasons for the conclusions at which you arrive.

PRACTICAL BOTANY.

Time allowed, One and a Half Hours.

1. Make preparations illustrating fully the structure of specimen A. Leave them for inspection. Make sketches from the preparations themselves, and give explanatory references.

2. Refer the plants B and C to their natural classifications, giving reasons for your decisions.

3. Describe in detail specimen D.

MATERIA MEDICA.

Time allowed, One Hour.

Two questions only to be attempted, *but No. III. must be one of them.*

1. Mention the principal Cinchona Barks of commerce; describe their physical and chemical distinctions; give any simple tests you know for their identification in a broken-up condition; and indicate the reasons influencing the choice of the Bark now official.

2. Sketch the chemistry of Cod Liver Oil; refer to the state of combination in which its fatty acids exist; and describe the tests commonly employed to detect probable adulterants. Relate any observations of your own on the subject.

3. Explain in detail the successive steps in the process for the assay of Extract of Nux Vomica, and comment upon any modifications of the process which experience of its working has suggested.

(Pharmacopœia supplied for reference in connection with this question.)

EDINBURGH CHEMISTS', ASSISTANTS', AND APPRENTICES' ASSOCIATION.

BOTANICAL EXCURSION.

Friday, July 3, 1903. About twenty members left Waverley Station by train for Inveresk, under the leadership of Mr. W. B. Cowie and Mr. Archibald Currie, President. A large variety of interesting specimens were gathered on the railway embankment and vicinity, including several unusual plants, such as *Silene italica*, and most of the others found at this place on former occasions. Field work was diligently pursued till darkness brought the interesting operations to an end. The party then proceeded to Musselburgh by the Esk Side path. The weather was good, and the outing was both pleasant and profitable. At Musselburgh Station Mr. J. W. Plenderleith proposed a cordial vote of thanks to the conductors, Messrs. Cowie and Currie, and it was heartily awarded.

PHARMACEUTICAL SOCIETY OF IRELAND.

MONTHLY MEETING OF COUNCIL.

Wednesday, July 1, 1903, at 67, Lower Mount Street, Dublin. The Vice-President, Mr. Johnston Montgomery, in the chair.

Co-option of a Councillor.

The first business on the agenda paper was the co-option of a member of Council in the room of Mr. George Howel Grindley, deceased.

Mr. **Kelly** proposed, and Mr. **Smith** seconded, that Mr. Watson, who had been long a member of the Society, be co-opted.

Mr **Blair** asked who was the candidate who received the highest number of votes, without being successful, at the last election.

Mr. **Wells** said it had been an unwritten law of the Society since its establishment that on no occasion had they co-opted as a member of the Council anybody who had been rejected by the voters.

Mr. **Blair** pressed his question, and proposed that Mr. Bernard be co-opted.

The motion was not seconded.

The **Vice-President** put the motion for the co-opting of Mr. Watson, which was carried, Mr. **Blair** dissenting.

Address to the King.

On the motion of Mr. **Baxter**, seconded by Mr. **Connor**, the President, the Vice-President, and the ex-President were appointed to present the address of the Council to His Majesty the King on his arrival in Dublin.

Educational.

The Schools Committee reported that they did not recommend the recognition of the Limerick Technical School, as they had had no evidence as to its syllabus.

Mr. **Wells** said they were not satisfied with the technical schools, which did not teach pharmaceutical chemistry at all.

The **Vice-President** said it had been usual for some member of the Council to inspect the school which seeks recognition.

Mr. **Wells** said it would be best to reject the application for the present.

The report was adopted.

Elections.

Mr. Joseph Farrington, of Dolphin's Barn, Dublin, was elected a member of the Society.

Other reports having been dealt with, the remaining business was the appointment of an examiner to conduct the pharmaceutical and general chemistry division of the Licence Examination. There were three applications.

Mr. BAXTER proposed, and Professor TICHBORNE seconded the appointment of Mr. David S. Jardin, pharmaceutical chemist. This was carried unanimously.

"The Lords Justices-General and General Governors of Ireland, by and with the advice and consent of His Majesty's Privy Council in Ireland," have approved of the new regulation dealing with the Preliminary Examinations of the Society. The regulation runs as follows:—

> No candidate shall be adjudged to have passed in any language who does not exhibit a competent knowledge of grammar.

HALIFAX AND DISTRICT CHEMISTS' ASSOCIATION.

SPECIAL MEETING.

Monday, June 29, 1903, at the Old Cock Hotel, Halifax, Mr. T. BRIGGS, President, in the chair. The meeting was briefly reported in last week's issue of the *Pharmaceutical Journal* (see p. 21).

The Medicine Stamp Acts.

A question was asked as to the conditions under which grocers and limited companies might sell drugs after September 30 next.

The PRESIDENT said that as far as he read the Act none but registered chemists and druggists would be allowed to sell recommended medicines without liability to duty.

The SECRETARY, Mr. W. R. Black, read an article on the subject, which bore out what the President said, and also that chemists would be able to sell articles labelled in the ordinary way without being liable to the Stamp Act.

The PRESIDENT: The grocers and other tradesmen would not be allowed to sell.

The SECRETARY said that the differentiation as between the chemist and other shopkeepers with regard to the stamp duty was an important matter for chemists.

Mr. TIFFANY thought an important question for their consideration was this: Would the alteration in the law permit a grocer or any unqualified trader to retail in small quantities what was supplied to him in a stamped packet?

Mr. HEBDEN said he still thought it was a question which way was going to be best for them. Certainly, the chemist was hit on the penny articles under the old system; was he going to be hit more in other things on the new system?

Mr. BLACK thought that chemists would at first find the operation of the Act a little hard, but he was quite convinced that they would benefit in the long run.

Mr. TIFFANY said if it stopped the penny box trade they would benefit by it.

Mr. HODGSON thought the greatest hardship would arise in the "outlandish" districts. Grocers had hitherto made a decent living by selling articles without a stamp, and have got their supplies from druggists; in rural districts of Yorkshire, Lincolnshire, and Nottingham he could conceive a great hardship being felt.

Mr. COBB wanted to know in what direction Mr. Hodgson's sympathies went. Was it with the public, the little shopkeeper, or the chemists who supplied them?

Mr. HEBDEN said he upheld the chemist in that matter; the sale should be in the registered chemist's hands entirely.

The meeting was eventually adjourned without all the questions being answered, and it was decided to obtain, if possible, before next meeting, a satisfactory solution of the difficulties.

LETTER FROM SOMERSET HOUSE.

Mr. Black, Secretary of the Association, has this week received the following letter from Somerset House:—

> In reply to your letter of the 22nd ult., I am directed by the Board of Inland Revenue to state that, in consequence of the recent decision in the case of Farmer *v.* Glyn-Jones, medicine stamp duty will not in future be charged in the case of a sale by a qualified chemist or druggist of a known, admitted, and approved remedy if the formula of the preparation is stated or is indicated by such words as "Prepared according to the British Pharmacopœia," or if it can be shown that the preparation was not recommended by the owner, proprietor, maker, compounder, or original or first vendor thereof. With that exception the Board, after a careful consideration of the matter, do not consider that any change is necessitated in their practice by the above decision, and it will be observed that the relief afforded by that decision only applies to sales by qualified chemists or druggists, and does not extend to sales by, *e.g.*, limited liability companies. In this connection I may refer you to the case of Smith *v.* Mason and Co. (1894), Q.B., 363. As regards the decision in the case of Ransom *v.* Sanguinetti, I am to state that articles designated by such titles as "cough mixture" must now be held to be liable to duty unless the circumstances bring them within the scope of the decision in the case of Farmer *v.* Glyn-Jones, and the Board have decided not to press for payment of medicine stamp duty in cases where an article is sold by a duly-qualified chemist or druggist under such a designation as the above, provided that the composition of the article is fully disclosed on the label, or that the article is prepared in accordance with a formula in the British Pharmacopœia or other well-known book of reference, and that a statement to that effect is inserted on the label. When, however, such words as "cough mixture" are used, without a statement of the ingredients from which the article is prepared, the Board feel that they have no alternative but to hold that liability to duty is incurred.

ABERDEEN PHARMACEUTICAL ASSOCIATION.

ANNUAL EXCURSION.

Wednesday, July 1, at Potarch, one of the many lovely spots on Deeside. Leaving the Granite City by the 8.5 a.m. train, the excursionists arrived at Banchory shortly before 9 o'clock. By this time the weather, which in the morning was rather dull, had improved greatly, and the sun shone out with great brilliance. Machines were waiting at Banchory to convey the party by way of Strachan and Whitestones, along the side of the Feugh, to the Shooting Greens, where lunch was partaken. After a short ramble among the heather, the journey was resumed, and Potarch was reached about 11.30, a stroll by the riverside and among the woods passed the time till dinner was announced. The dinner was under the chairmanship of the genial President, Mr. WM. GILES, who in the course of a few remarks thanked the members for the support accorded to him in the recent election of the North British Executive, which had resulted in his candidature being successful. After dinner various games were indulged in, cricket, tug-of-war, shooting, egg-and-spoon race, etc., both ladies and gentlemen taking part in all the items. The atmospheric conditions were perfect. Tea was served about 6 o'clock, Mrs. Giles and Mrs. Craig acting the part of hostesses. The return journey was made by Invercannie to Banchory, and Aberdeen was reached about 9.10, everybody thoroughly pleased with the day's outing and the arrangements made for their comfort. The arrangements were in the hands of Messrs. Black, Giles, Mitchell, Reid, and Stephen.

PRESTON AND DISTRICT CHEMISTS' ASSOCIATION.

SPECIAL MEETING.

Tuesday, July 7, 1903, at Preston. Mr. Arkle opened a discussion on the

Medicine Stamp Duty.

After explaining the practical effect of the change in practice of the Board of Inland Revenue, he said that he had forwarded to Somerset House a number of labels last month, and in reply received a letter from the Secretary to the effect that, in view of the recent judicial decision in the case of Ransom *v.* Sanguinetti, the labels sent must be regarded as involving liability. Later, he despatched a further series of labels. The label on a simple powder, and bearing the words "One to be taken when headache is bad," was once more returned as "liable," and an ordinary surgeon's slip, with the words "Two spoonfuls to be taken when the cough is troublesome," was similarly treated because it bore the word "cough." Another was an ordinary round circular label, blank, with the word "Tic." in the centre, and that came back as "liable." He had received the following letter from Somerset House:—

> In reply to your letter, I am directed by the Board of Inland Revenue to inform you that the use of the labels forwarded by you would render the preparations in question liable to medicine stamp duty. With regard to the recent decisions in the cases of Ransom *v.* Sanguinetti and Farmer *v.* Glyn-Jones, the Board have decided not to press for payment of medicine stamp duty in cases where an article is sold by a duly qualified chemist or druggist under such designation as "cough mixture," provided that either the composition of the article is fully disclosed in the label, or the article is prepared in accordance with a formula in the British Pharmacopœia or other well-known book of reference, and a statement to that effect is inserted in the label. When, however, such words as "cough mixture" are used without a statement of the ingredients from which the article is prepared, the Board feel that they have no alternative but to hold that liability to duty is incurred. I am to add that the recent decisions do not affect the question of the liability to duty of articles which consist of a medicinal drug uttered or vended entire, without any mixture or composition with any other drug or ingredient whatsoever, such articles being exempt from medicine stamp duty when sold by any surgeon, apothecary, chemist, or druggist who hath served a regular apprenticeship, or by any person who hath served as a surgeon in the Navy or Army under any commission or appointment, duly entered at the War Office or Navy, or by any other person whatsoever licensed to sell any of the medicines chargeable with a stamp duty.

Mr. Williamson thought it would be a very good idea to communicate with the Board of Inland Revenue again, and invite them to make the communication more clear. At present he did not seem to think it carried with it the interpretation it really seemed to suggest.

Mr. Arkle said he was quite prepared to write them again, and would submit for the Board's opinion the following question: "If an entire drug is put up as a headache cure, can it be sold by other than a registered chemist without a medicine stamp, providing the person has a medicine licence?"

Mr. Hatfield inquired if it would be advisable to also point out the grave risk run by selling an article without a label?

Mr. Arkle: There is one curious thing which has come out in the controversy—viz., that a simple label affixed to a bottle announcing the preparation will not do. It must be in the body of the label.

Mr. Williamson thought a rubber stamp would enable chemists to overcome that difficulty. Continuing, Mr. Williamson observed that on the question generally different views seemed to prevail, and probably in the long run it would not tell against the profession.

Ultimately the following resolution was adopted, and a copy ordered to be sent to the Pharmaceutical Council:—

> That this meeting urges the Council of the Pharmaceutical Society to approach the Board of Inland Revenue, and endeavour to obtain for registered chemists the same privileges prevailing as before the Sanguinetti case in the matter of simple appellations.

AMERICAN PHARMACEUTICAL ASSOCIATION.

SECTION ON PRACTICAL PHARMACY AND DISPENSING.

The fifty-first annual meeting of the American Pharmaceutical Association will be held at Mackinac Island, Michigan, during August, 1903, and the section on practical pharmacy and dispensing will have two sessions at the meeting. A number of queries and suggestions of subjects for papers and discussion have been published, and, as many of these are of interest to readers of the *Pharmaceutical Journal*, the Editor will be glad to receive communications thereon, for publication, either in the form of letters or original articles.

Subjects for Papers and Discussion.

Errors in prescriptions and how corrected.

Devices for preventing errors in handling poisons and drugs.

Incompatibilities with the newer synthetic remedies.

New formulæ for disguising disagreeable medicines.

Latest ideas regarding advertising, window displays, packages, labels, indexing and filing, storage and preservation of drugs and preparations.

How can pharmacists shorten their hours of labour?

Short paper on the newer fads in soda serving.

To what extent can a pharmacist ethically advertise the various departments of his business, compounding, proprietaries, soda fountain, etc.?

Some of the proprietary chemical humbugs now on the market.

What amount is generally given and how is it customary to dispense this prescription: ℞ Sodii phosphas ʒi?

Formulæ to displace proprietaries used by physicians.

Notes on official preparations.

Improvements in formulæ of the National Formulary.

Pill excipients.

Formulæ for elixirs and syrups containing terpin hydrate.

What can the preceptor do to improve and aid an indifferent clerk?

What form of pepsin should be dispensed when that drug is prescribed in powders and when in liquid preparations?

How does the pepsin now on the market answer the official requirements?

Formulæ for predigested foods.

Is the use of the metrical system of weights and measures becoming more popular with the physicians?

New drugs and preparations.

Labour and time-saving devices for the laboratory and dispensing counter.

As acetic acid is an excellent solvent for many drugs, should not the increased use of medicinal vinegars be encouraged?

Formulæ for the various elixirs and wines of the glycerophosphates.

To what extent can the retail pharmacist manufacture tablets and tablet triturates?

To what extent can the retail pharmacist manufacture perfumes?

Can the retail pharmacist satisfactorily prepare soluble elastic capsules?

Should methyl alcohol be recognised by the Pharmacopœia, or is its use allowable in any medicinal preparations?

BURNLEY CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Thursday, July 2, 1903, Mr. U. A. Coates in the chair.

Vigilance Committee.

The minutes of this Committee were submitted by Mr. Butterworth, Secretary. A resolution had been passed with regard to properly qualified assistants at branch shops.—On the motion of Mr. Heaton, seconded by Mr. Lawton, the minutes were approved.

The Medicine Stamp Act.

A long discussion arose on the altered situation created by recent decisions as to the sale of preparations under the Medicine Stamp Act. Mr. Brown submitted a label which he had sent up to the Inland Revenue authorities, who had returned it, and explained why in its present form the preparation bearing the label would be liable to stamp duty. Thereupon the meeting entered into the question of labels in general, and how these could best be drawn up in view of the change in the reading of the law. A good many preparations were mentioned, and various suggestions made for the guidance of chemists. Mr. Heaton thought it was a matter of such importance that a sub-committee should be appointed at once to go into the whole question, so that they might arrive at something like uniformity of action. Each member could submit suggested labels to this Committee, and they could be considered in relation to each other.—A number of members thought it would be best to deal with the matter at a full meeting of the Association, urging that there was nothing better calculated to stimulate the interest of the members and secure a good attendance.—It was eventually decided to convene a special meeting of the Association at as early a date as convenient to enter fully into the question.

The Bristol Conference.

The Secretary said they had forwarded for the Federation meeting at Bristol a resolution urging the Pharmaceutical Council to reduce the membership fee from a guinea to half a guinea, believing that this would lead to a large accession of membership. The Federation Committee now desired the name of the Burnley delegate who would support the resolution.—Some discussion ensued as to whether the Association should send a delegate.—The Secretary mentioned that Mr. Heaton, the President, attended two years ago, and made the Association a present of his expenses.—On the motion of Mr. Barlow, seconded by Mr. Hirst, Mr. Heaton was again appointed to attend.

JENNER INSTITUTE OF PREVENTIVE MEDICINE.

On Friday, July 3, 1903, the new antitoxin laboratories and stables of the Jenner Institute of Preventive Medicine were formally inspected by Lord Lister, the governing body, and a large number of invited guests at Queensberry Lodge, Elstree, Hertfordshire, Lord Iveagh, Sir Michael Foster, Sir William Church, Sir Henry Roscoe, Sir Douglas Powell, Sir Felix Semon, Sir T. Lauder Brunton, and many medical officers of health were present, while among the pharmacists present were Mr. Walter Hills, Mr. R. A. Robinson, Professor Greenish, Mr. W. R. Dodd, Mr. Peter McEwan, Mr. John Humphrey, and Mr. F. Capel Hanbury. The manufacture of calf lymph will be continued at the headquarters on Chelsea Embankment, while antitoxins and serums will be prepared on a commercial scale at Elstree. Here, also, experimental investigations are being conducted, and the visitors on Friday were able to see a number of horses, rabbits, monkeys, guinea-pigs, rats, mice, and other animals, which seem as comfortable as circumstances and bacilli permit. The horse boxes, some thirty-six in number, are of the most modern and sanitary type, and the most vigorous precautions are everywhere taken to prevent the spread of any infection. The chemical and bacteriological laboratories are excellently fitted up, having papyrolith floors, glazed adamant walls, with rounded corners, and white tiles. The sterilising rooms, post-mortem room, and the rooms illuminated with ruby light were particularly interesting. Dr. Dean and Dr. Todd, of the staff at Elstree, explained to the visitors the work of the institute. The value of the diphtheria antitoxin is already well established and everywhere conceded, but much experimental work has still to be done in connection with the bacillus of tetanus, the streptococcus organism, and others. While research is the primary object of the institute, it is intended that the institute shall also be a commercial organisation, and it will supply antitoxins and serums to such medical men and chemists as may require them. For the trade, Messrs. Allen and Hanburys, Limited, are the sole agents. The *Lancet* states that the use of the name "Jenner" will be discontinued in future, the institute reverting to its original title—The British Institute of Preventive Medicine.

PROPRIETARY ARTICLES' TRADE ASSOCIATION.

ANNUAL REPORT FOR 1902.

The seventh annual report, which is to be presented at the annual meeting of the Association next week, states that the increase in the membership of the Manufacturers' Section has been extremely gratifying. In July of last year this section consisted of 73, this year it stands at 123. The past year's results have gone a long way to remove any justification there might have been for complaints that the protected articles are not those in largest demand. The importance of the articles added during the year cannot be questioned, and it is pointed out if the Association's list consisted only of those articles which have been added since the notable Convention in November, the trade would be making, by way of increased profit, as the result of the work of the P.A.T.A., many times over the amount of the subscription. There have been two notable additions to the Wholesale Section. Of the largest firms of wholesale dealers in proprietary medicines not a single one remains outside the Association. At least 90 per cent. of proprietary medicines which pass through the hands of wholesale dealers goes through firms who are members of the P.A.T.A. During the year 450 retailers have joined the Association, but the continued apathy of thousands of retailers who do not subscribe to the Association is perhaps the only discouraging feature which confronts those who so loyally give their time and money to the interests of the Association. The report proceeds to refer to the Convention held last November, and to the subsequent correspondence with Mr. Fisher, who acts for an association of manufacturers. It is recalled that one of the stated objects of the P.A.T.A., still acted upon, is to render assistance to members of the Association in preventing substitution.

One result of the Convention has been a closer connection between local associations and the P.A.T.A. The financial statement shows a balance at the end of 1902 of £233 18s. 8d., the receipts during the past year having exceeded the payments by some £200. Probably the increase in the retail membership since the beginning of the year will result in a still more satisfactory balance-sheet for 1903. Several local associations have presented letters to proprietors asking them to protect, and such letters have been signed by over 95 per cent. of the chemists in business in those particular districts. Similar evidence of the desire for protection could be forthcoming from every chemist in the country.

The whole question of notifying the protected prices to patent medicine vendors who are not chemists has received the careful consideration of the Council, and it is proposed to circulate the list periodically in the form of a price list. The suggestion that the list should be printed on a card to be hung up in the shop is unworkable, unfortunately, for the reason that much too big a card would be required. Other methods of notifying grocers and others of the additions to the list will be adopted. The Council points out that ignorance on the part of chemists in business as to the minimum prices of P.A.T.A. articles is inexcusable, owing to the methods adopted in circulating the information.

The Council recommend to the various local associations the action of the Exeter Chemists' Association in arranging a joint meeting of chemists and grocers of the town to discuss difficulties in connection with the trade in articles such as infants' foods, which are largely distributed through both traders.

Several very important articles have been added to the list which show less profit to wholesalers and retailers than would formerly have been accepted, but the conditions pertaining to the articles were such that better terms could not be obtained.

The Council draw attention to the futility of attempts at local combination for fixed prices apart from the intervention of the proprietors. Two years ago, the consent of every chemist in Glasgow and district was obtained to an arrangement whereby minimum selling prices were fixed for certain articles not on the protected list. For more than two years that arrangement worked admirably, but recently Messrs. Boots opened in Glasgow, and would not be a party to the local price arrangement. The consequence has been that the local voluntary arrangement came to grief, and prices for the articles in question have gone back to the old rates.

During the year a number of places have been visited by the canvasser, with a resulting satisfactory increase in the membership of the Association.

CHEMISTS' DEFENCE ASSOCIATION, LIMITED.

THIRD ANNUAL REPORT.

A large increase of membership is to be reported for 1902, which commenced with a membership of 1,630 and ended with a total of 2,100.

The demand upon the services of the Association's legal advisers has been much heavier than hitherto. At the head of the list come the inquiries as to the liability of stamp duty incurred by many hundreds of labels, handbills, price lists, etc. The next difficulty which seems to affect a large number of members is as to whether advertisements, etc., issued by them infringe the Dentists Act. The phrase "specially qualified to practise dentistry" has caused much anxiety. Details are given of a number of cases in which the Association has been able to take the burden of trouble, and frequently of much expense from its members on account of claims arising from accidents or mistakes.

Though the Association is in no way obliged to interfere in other civil actions brought by or against members than those arising out of alleged dispensing mistakes, valuable advice has been given when requested in cases of various kinds, and frequently the Association has been able amicably to settle disputes between its members and wholesale houses.

The number of prosecutions under the Food and Drugs Acts which ought not to have been taken is smaller than it was, and the directors think that the action of the Association in past years in fighting such cases has had something to do with bringing this about. The mercury ointment cases in the Potteries show that there is still a disposition in some districts to administer the law with more regard to the letter than the spirit. In the majority of these cases there were convictions on the ground that the B.P. strength should have been supplied. A serious aspect of those proceedings was that the magistrate held that a chemist could not escape conviction by labelling the ointment "diluted mercury ointment" if he wrapped the box in a piece of paper so as to cover the label. This decision would have been appealed against, but the magistrate stated the case in so unsatisfactory a form that the Solicitor to the Association did not advise proceeding with it. Of other cases under the Sale of Food and Drugs Acts dealt with by the Association several were dismissed.

The formation and work of the Drug Trade Appeal Fund is detailed, and the circumstances of the vinegar of squills case are recapitulated. Particulars of the Glyn-Jones and Sanguinetti cases follow, the results being summed up as follow:—

(1) Qualified chemists may sell standard medicines free from duty, although recommended.

(2) This privilege does not apply to joint stock companies, or to grocers or confectioners.

(3) It does apply to articles called by such names as "influenza pastilles," "cough mixture" (which are liable to duty if not sold by chemists) if the pastilles and mixture are standard medicines made according to a recognised formula.

(4) Therefore qualified chemists can, if they choose, sell cough mixtures in small quantities for 1½d. less than their unqualified competitors.

The number of policies for plate-glass insurance issued is increasing, and the Association has been able to save a considerable sum to those members upon their plate-glass insurance without loss to itself. In fact the business leaves a balance of £4 5s. 4d. in favour of the Association. The directors place this report of a year's work before the members and the trade generally with confidence, and they feel sure that it has only to be carefully perused to convince the most sceptical of the advantages which it confers on its members, and, through its members, upon all those connected with the business.

The directors regret that Mr. W. Jones, of Tewkesbury, and Mr. T. B. Garrett, of Newport, have resigned. These vacancies have been filled by the appointment of Mr. Sutherland, of Glasgow, and Mr. J. Smith, of St. Leonards-on-Sea, both of whom are members of the Retail Section of the P.A.T.A. Council.

The loss on the year's working is £110, legal charges and claims both having been exceptionally heavy. The balance-sheet shows a deficiency of £181 8s. 6d., but only 5s. on the £1 shares has been paid up.

The annual meeting of the Association is fixed to take place on Tuesday next, July 14, at the Holborn Viaduct Hotel, at 4.30 p.m. The meeting will follow that of the P.A.T.A., which takes place at 2.30 p.m. the same afternoon. The whole of Wednesday, the 15th inst., will be devoted to an excursion on the Thames from Reading to Windsor; luncheon will be served at Henley, and tea on board the launch. Very few tickets are left at the moment of going to press, so that an immediate application to the Secretary, at 184, Temple Chambers, E.C., is necessary.

NORTH-EAST LANCASHIRE CHEMISTS' ASSOCIATION.

SPECIAL GENERAL MEETING.

Wednesday, July 8, 1903, at Blackburn, Mr. Councillor Shorrock in the chair. The object of the meeting was to discuss the recent action of the Board of Inland Revenue with regard to the stamping of medicines. Much interest was taken in the whole matter, and eventually a committee, consisting of the President, Vice-President, Messrs. Gifford, Highton, Openshaw, Grimshaw, and Hindle, was appointed to get all information, and act as it should think best in the interests of the members of the Association. Subsequently this Committee met, and passed the following resolution:—

> That this Special Committee, acting on behalf of the North-East Lancashire Chemists' Association, hails with satisfaction the recent decisions in the Law Courts with reference to the labelling, etc., of medicines, and is of opinion that the result of these decisions will be of value to registered chemists. It deprecates any effort to secure a contrary interpretation.

It was resolved also to forward the above resolution to the General Purposes Committee of the Pharmaceutical Society.

THAMES VALLEY DISTRICT CHEMISTS' ASSOCIATION.

GENERAL MEETING.

Wednesday, July 8, 1903, at the Kingston Hotel, Kingston-on-Thames. This meeting was called to discuss the recent decision of the Board of Inland Revenue in regard to medicine stamp duty; but, probably on account of the death of the wife of Mr. Alfred Higgs, President of the Association, there was only a small attendance. On the motion of Mr. Parrott, seconded by Mr. Betty (Regent's Park), the chair was taken by Mr. Palmer (Twickenham).

The Chairman expressed his deep regret at the circumstance which had placed him in the chair that day, and proposed that a letter of sympathy be sent to the President.

This was agreed to in silence.

The minutes of the previous meeting were then read.

Shops (Early Closing) Bill.

The Chairman asked Mr. Betty if he could say how the Shops (Early Closing) Bill was progressing, and stated that letters had been received from Mr. Balfour and Lord Avebury acknowledging receipt of the resolution passed at the last meeting.

Mr. Betty said the Bill was still before Parliament, but he did not think it had made much progress.

The minutes were then confirmed.

Letter from the President.

The Secretary, Mr. Harvey, read a letter he had received from the President, in which he intimated that, owing to the death of his wife on the previous day, he would not be able to attend. Referring to the business of the meeting, Mr. Higgs wrote:—

> I am sorry not to have had an opportunity of expressing my opinion upon the all-absorbing topic at this crisis in the history of "patent" medicine stamps; but I should like you to tell the meeting that, in my opinion, the latest phase of the question will be a general boon to the rank and file of chemists, and will act equally reverse to the bogus or one-man companies. I consider any action of chemists in interviewing the Inland Revenue authorities at this juncture will be detrimental, and from Mr. Glyn-Jones' amendment I gather that before doing so the *pros* and *cons* will want well discussing; so that, shortly, I should suggest no action be taken until we have had a fair trial under the recent reading of the law.

Membership of the Association.

The Secretary then read a list of twelve names of chemists who had paid their subscriptions as members since the previous meeting, and the Chairman stated that the number of members, irrespective of those who had promised to join but had not yet paid their subscriptions, was now about fifty. He proposed that Messrs. Cassell (Idris and Co.) and E. J. Parry be elected associates of the Association.

This was seconded by Mr. W. J. Doe (Wimbledon) and carried.

The Medicine Stamp Difficulty.

A general conversation then ensued on the subject of the recent decision of the Board of Inland Revenue in regard to the designation of medicines and their liability to stamp duty. The Chairman, Mr. Betty, Mr. Doe, and several other members all expressed the opinion that, while considerable inconvenience would be caused to chemists in having to replace their old stock of labels with new ones, in the long run registered chemists would greatly benefit by the recent decision of the Board of Inland Revenue. In fact, the Chairman was strongly of opinion, judging from the magistrate's decision in the case against Messrs. Needham's, Limited, at Marylebone Police Court, that the prospect of the individual chemist was brighter and better than it had been for a long time past. He thought it would be most unwise on the part of chemists to endeavour to get the Inland Revenue authorities to reconsider their decision. He believed it would be a great mistake to approach the Board of Inland Revenue at all, except, perhaps, as Mr. Betty had suggested, to ask that the time granted for using up old labels might be extended beyond September 30.

Mr. Doe agreed with the Chairman, and he read extracts from several letters which he had received from the Board of Inland Revenue on the subject. The only point which required to be defined more clearly was, in his opinion, the meaning of the term "approved formula."

The point in question was discussed at length, and reference was made to the fact that the Inland Revenue authorities had informed the Editor of the *Pharmaceutical Journal* (see p. 38) that if an "approved formula" were published in a work of reference known as 'The Pharmaceutical Journal Formulary' the Board would be prepared to recognise such a work. Mr. Doe suggested, therefore, and the suggestion received the approval of the meeting, that the Council of the Pharmaceutical Society might, with advantage, compile and publish

A Pharmaceutical Formulary

of such domestic medicines as are not embodied in the British Pharmacopœia, but are in general request by the public. It was felt that any suggestion of the kind would be carefully considered by the Council, and that if suitable formulæ for such preparations as head and stomach pills, etc., usually sold in pennyworths, were approved by the Council and published in book form, it would to a great extent meet the present difficulty.

After further discussion, it was proposed by Mr. Betty, seconded by Mr. Doe, and carried:—

> That should the Pharmaceutical Society approach the Inland Revenue authorities with regard to the recent interpretation of the Stamp Acts, the Society respectfully request that a further extension of time be allowed to enable chemists to reduce their stock of liable labels.

Other Business.

Reference was next made to the recent statements in the daily press that the Duke of Devonshire was preparing a Bill dealing with the sale of poisons, but, as there was a doubt as to whether the statement was authentic, nothing was done in the matter. The question of an "outing" was also discussed, and it was left in the hands of the Secretary to ascertain whether the members desire an outing to be organised in connection with the Association.

A vote of thanks to the Chairman terminated the proceedings.

LEGAL INTELLIGENCE.

Pharmacy Act, 1868.

Proceedings at Leeds Under Section 17.

Pharmaceutical Society v. Pickup.

On Friday, July 3, 1903, at the Leeds Police Court, before the Stipendiary Magistrate (Mr. C. M. Atkinson), the Pharmaceutical Society of Great Britain prosecuted James Pickup, drug store keeper, 25, York Road, Leeds, under Section 17 of the Pharmacy Act, 1868, for selling poison in a bottle unlabelled. Mr. Stephen Peckover was for the prosecution, and Mr. Clifford Dunn appeared for the defendant.

Mr. Peckover, in opening the case, said the proceedings were on an information laid by Mr. Harry Moon, who was a clerk in the employ of the Registrar of the Pharmaceutical Society, and were taken under Section 17 of the Pharmacy Act, 1868, which provided that "it shall be unlawful to sell any poison, either by wholesale or retail, unless the bottle, box, vessel, wrapper, or cover in which such poison is contained be distinctly labelled with the name of the article and the word, 'poison,' and the name and address of the seller of the poison." The charge against the defendant was that on May 23 he sold to a witness of the name of Arthur Foulds a bottle containing a mixture of two-pennyworth of soap liniment and two-pennyworth of laudanum without those conditions being observed. There was no dispute as to the mixture being a poison, and one of the poisons mentioned in the schedule.

Mr. Dunn said he was prepared to admit, on behalf of his client that a liniment containing laudanum was obtained from his premises on May 23, and had written to Mr. Peckover to the effect, but had stated in his letter: "This admission must only be taken as to avoid the necessity of proving the analysis, and for no other purpose whatever."

Mr. Peckover said that unless his friend was prepared to admit the certificate of analysis he must have an adjournment.

Mr. Dunn complained of the employment of an analyst in Exeter, and that his client was threatened with the cost of bringing that gentleman to Leeds to prove the analysis. He held that the least that the Society could do in such cases was to employ an analyst in the place where the proceedings were to be taken.

A lengthy discussion ensued as to how far it was necessary to prove the proportion of poison in the mixture, in the course of which the decision in Pharmaceutical Society *v.* Delve was referred to; but Mr. Dunn eventually admitted, on behalf of his client, that there was sufficient laudanum in the mixture to do harm.

Mr. Peckover, continuing his opening statement, said that on the day in question Mr. Foulds went to the defendant's shop at 25, York Road, and first asked for castor oil. That was supplied to him in a bottle now produced, which bore a label giving the name of "Jackson Frow, 78, York Road," and was wrapped in a paper containing an advertisement of "Temerare," but with the name on it, "Pickup's Drug Stores, 25 and 78, York Road." Foulds then asked for two-pennyworth of soap liniment and two-pennyworth of laudanum mixed. The mixture was made up by the defendant himself, who was the only person in the shop, and was put into a plain bottle—also produced—without any label whatever, and wrapped in a paper advertising a well-known proprietary article, but not containing the name of any retailer. Therefore, the poison was sold without the name of the article, or the word "poison" upon it, or the name and address of the person selling it.

Arthur Foulds, of 213, Brunswick Street, Manchester, deposed that, acting on the instructions of Mr. Moon, he went to the shop, 25, York Road, on May 23. The name on the door of the shop was "Pickup's Drug Stores." He saw the defendant, and asked him for a small bottle of castor oil, and was supplied with it in the bottle and paper produced, the wrapper bearing the defendant's own name and address. He then asked for two-pennyworth of soap liniment and two-pennyworth of laudanum mixed, and was served with that by the defendant in a bottle which was unlabelled, and wrapped in a wrapper with no address. There was nothing on the bottle stating that it contained poison. It was a perfectly plain bottle. He afterwards put a written label on to it, so that he should be able to identify it. There was nobody else in the shop at the time. He sealed the bottle directly he had purchased it, and afterwards handed it over to Mr. Moon, at Manchester.

In cross-examination by Mr. Dunn, witness stated that he was sure that the time when he went to the shop was about 2.30 in the afternoon.

Mr. Dunn said that as the witness was positive that the time of sale was about 2.30, he had no alternative but to withdraw his admission that laudanum was obtained in the shop on that day. That admission had related to a transaction which took place about nine o'clock in the evening, when a boy came into the defendant's shop and stated that an accident had happened to his father near to, and wanted some laudanum and opodeldoc. The defendant told the boy that he could not sell him any laudanum, but he would give him some, and he took some from a bottle which his wife kept for household purposes, and mixed it with the opodeldoc for the boy, but did not charge him for it. That was the only occasion on which he had ever allowed any laudanum to go out of the shop, and now that he was made aware of an allegation that there had occurred this transaction with Foulds at 2.30 on that same day, he would withdraw the admission that he had made with reference to the other transaction, and the defendant would go into the box and swear that Foulds was never in the shop. He did not give any hint to the defendant that he was going to have the mixture analysed, because he had no instructions to do anything of the kind.

In re-examination the witness said there was not the smallest possible doubt about the defendant being the man who had served him. The defendant used to be at 78, York Road, as well as at 25, but the other shop had been pulled down for some time. Jackson Frow, he believed, was Pickup's predecessor at No. 78.

Defence.

That closed the case for the prosecution, and for the defence Mr. Dunn put the defendant into the box. The defendant stated that he had been connected with drug stores for nearly twenty-five years, and had been in Leeds over four years. He had previously carried on the shop at 78, York Road, which was called the York Road Drug Stores, but had never put his name up there. The witness added:—"My predecessor at 78, York Road was Mr. Miller, and Jackson Frow I know nothing about whatever."

Mr. Dunn: This young man Foulds said Jackson Frow was his predecessor, and he was nothing of the sort.

Witness said that he had no bottles in his place with the name Jackson Frow on, nor did he know anything about Jackson Frow.

Witness, continuing his evidence, said: I have never seen the man Foulds before to-day. I have not the slightest hesitation in saying so. I never knew anybody named Jackson Frow, and never at any time or place sold a bottle with such a name on.

The Stipendiary Magistrate: It is a very serious matter which is put to you now, and you are quite right to be positive, but you must bear in mind that this person has sworn that he did see you, and that this took place, and it is possible that you may be mistaken. We are all of us liable to be mistaken as to whether we have not seen a person who may not leave a sufficient impression on the mind; but you must remember that a man who comes and says that he bought particular things at a certain time and place cannot be mistaken. He may be a lunatic or a liar, but he cannot be mistaken, and that is the position that you have to meet.

Defendant, continuing, said that during the whole four years that he had been in business in that shop he had never sold one drop of laudanum. He had none but a little that he kept in the house for his own use.

Mr. Dunn: There is a family of seven children, and they are a good deal troubled with toothache and neuralgia, and this is kept solely for the purposes of yourself and your family?

Witness: Yes.

Mr. Dunn: And the reason why you keep so large a quantity as this 8-oz. bottle, which I produce, is that that is the lowest quantity that you can get from a wholesale dealer?

Witness: It is the lowest quantity that I can get at wholesale price.

Mr. Dunn: And did you get that from Messrs. Brooke, Hirst, and Brooke in May, 1902, as shown by this invoice?

Witness: Yes, May 31, 1902. The witness went on to state that about nine o'clock on May 23 a boy came into his shop in a great hurry, and asked him if he would let him have a little laudanum and opodeldoc. He said at once that he did not sell laudanum. The boy then stated that an accident had happened to his father, and he replied that under those circumstances he would give him a little, and he did so. He went into the house for it, as it was in Mrs. Pickup's care, and he did not know where it was. It would have taken the boy twenty minutes to go to the next chemist's and back. He told the boy that the mixture was poison, and put on it a red label similar to the one produced.

In answer to further questions, witness said the only people who served in the shop besides himself were his wife and a daughter aged about fifteen. The labels handed to the Stipendiary Magistrate were those printed for use in his business.

At this point an adjournment was made for luncheon, and upon resuming in the afternoon Mr. Peckover asked for the castor oil bottle, which had last been seen in the possession of Pickup, according to the statement of the magistrate's clerk, as he stood in the witness-box. Assiduous search was made by everybody, including the Stipendiary Magistrate, for the bottle, but though the hearing of the case occupied two hours more, and the bottle was frequently wanted, it was never found.

In cross-examination by Mr. Peckover, the defendant said he purchased the business at 78, York Road from Mr. W. H. Miller, who had had it about two years, but he did not know from whom Mr. Miller had bought it. He had never seen a bottle like the castor-oil bottle in the present case, which was labelled with the name of Jackson Frow. He had never seen Foulds before to his knowledge, and was prepared to deny that he saw him in his shop last Saturday or last Monday. He could remember every man who came into his shop. Every man that he had seen once in his shop he could recognise again. Although he was now informed that Foulds was in working-man's clothes, he was sure that he should have known the man again.

The Stipendiary Magistrate (handing witness one of his printed labels): Just hold that label up to the light. You see that there is something under your name and address. Now tear it from left to right. What is the name under the strip that you have removed? Is it not Jackson Frow, 78, York Road?

Witness: Yes.

The Stipendiary Magistrate: Now look at this one (handing witness another label), and do the same, and there, I think, you have the name Pickup pasted over Miller.

Witness: Yes.

The Stipendiary Magistrate: You still say you never heard of Jackson Frow until you came into Court to-day?

Witness: I do not say I never heard of him.

The Stipendiary Magistrate: You remember his name then?

Witness: I have seen his name on labels.

The Stipendiary Magistrate: Have you seen his name on labels before to-day?

Witness: Yes. These have been brought in mistake, because I only brought them as a sample of my labels.

Mr. Peckover: Have you obliterated the name of Jackson Frow by pasting strips with your own name on above it, and done the same with labels with Miller's name on?

Witness: Always, before they go out of the shop. I should be misrepresenting if I did not.

Mr. Peckover: Did not you tell me you had never heard of Jackson Frow?

Witness: No; I said I had never known or never seen him.

Mr. Peckover: Did not you say you had never known anything about him and never heard his name?

Witness: I did not know anything about Jackson Frow.

Mr. Dunn: What you say to-day is that, so far as Jackson Frow is concerned, you never saw him.

Witness: I never knew him and never saw him.

Elizabeth Ann Pickup corroborated the defendant's story as to the keeping of laudanum in the house for domestic purposes, and the giving of some of it on May 23.

Mr. Dunn addressed the Court at considerable length, and argued that, on the question of the sale of laudanum, there were two witnesses on his side as against only one on the other, and that the balance of testimony was overwhelmingly in favour of the defendant.

Judgment.

The Stipendiary Magistrate gave his decision without hearing Mr. Peckover in reply. He said this was a very difficult and serious case, and the gravity of it could hardly be exaggerated. Many of the criticisms which Mr. Dunn had passed upon the evidence were very just and forcible, but the issue which he had to try was whether the witness Foulds had got into the witness-box and sworn deliberately upon his oath what he knew to be a tissue of wicked and deliberate lies, or whether Mr. Pickup had come forward and made a series of statements in the witness-box which he knew to be absolutely untrue, and that was an issue which, serious as it was, he could not shirk. The evidence must be carefully examined with all the care which he was capable of using in order to determine which of the two had sworn falsely. He had the two stories before him, and could not but feel that there was a remarkable coincidence between the story of the sale of poison on the afternoon of May 23 on the one hand, and the story that for the first time in his career as a chemist the defendant gave some laudanum on the evening of that same day, mixed with opodeldoc, and, therefore, making a mixture which was practically identical with the mixture which it was alleged he had sold to Mr. Foulds. If the case had rested at that point he might have come to a different conclusion to that which he had arrived at, feeling that he could not come to any satisfactory and clear decision as between the two; but the matter did not rest there. Two bottles were produced, and though one had no label on, the other had a label on bearing the name of Jackson Frow when it was last seen. In the course of the last hour or two that bottle had disappeared altogether, and the label on it was not bearing the name of the defendant, but the name of Jackson Frow. If Mr. Foulds was conspiring with others for the purpose of ruining the defendant by inventing a tissue of falsehoods which he was prepared to substantiate by oath in the witness-box, he would hardly have put on to that bottle a label which was not the label of the defendant, because there must be many of the defendant's labels about which could easily be found, and could be supplied to him by customers in the neighbourhood. The label put on was that bearing the name of Jackson Frow. How was the defendant to meet that? His wife, who had been out of Court whilst her husband was giving evidence, and knew nothing at all about the Jackson Frow incident, which had only been raised in the Court, said, in answer to questions: "I know the name Jackson Frow and do not know much about him, and have seen labels with his name on." The defendant, who had seen the bottle which it was said he had sold to Mr. Foulds, said, "I never saw the bottle, I know nothing about it; I did not sell it, and never sold any bottle with the name of Jackson Frow on in my life, and do not know anything about him, and had no bottles with his name on." And at a later stage he emphasised that by saying, "I never saw anything with Jackson Frow's label on, and I know nothing about him." The first label which he (the Stipendiary Magistrate) took up when they were handed to him seemed to him to be not of a uniform thickness, and he held it up to the light and saw that there was something underneath the words "Pickup's Drug Stores," and he therefore tore off "Pickup's Drug Stores," which he was able to do, and he found underneath "Jackson Frow, Drug Establishment, 78, York Road, Leeds." He looked at another label amongst the mass, and found one on which Jackson Frow's name had not been covered up with Mr. Pickup's name or anybody else's. He was bound to say that, though he did not want to use unnecessarily strong language, under these circumstances he had come to the conclusion that Mr. Foulds did go and purchase these bottles, and that they were sold by the defendant; and that the defendant, in saying that that was untrue, was saying what he himself knew was false. It was a strong opinion of his, and he was bound to give expression to it. In regard to the other difficulty in the case, he did not think that Mr. Dunn ought to be bound by the undertaking which he gave at first as to admitting that there was a substantial amount of poison in this bottle, because it was not in reference to this bottle that he meant the undertaking to apply. Mr. Dunn's admission was undoubtedly given in respect to the bottle which was said to be given to the boy; and, therefore, perhaps he would like to consider whether he would have the chemist brought to Leeds to prove the analysis, or whether he would raise any other issue in any way by taking proceedings against Mr. Foulds or challenging his opinion in the matter.

After a long consultation with his client, Mr. Dunn announced that whilst the defendant would not admit that he sold laudanum, he was prepared to admit that the analysis was correct, because that admission did away with the necessity of the analyst being brought. He pleaded for a mitigation of penalty on account of the man's large family, and also asked that the Pharmaceutical Society, in consideration of the defendant's circumstances, would withdraw a claim that they had made upon him for a £5 penalty in respect of an alleged subsequent sale of Mrs. Winslow's Soothing Syrup.

Mr. Peckover declined to give any undertaking at all in regard to the further case.

The Stipendiary Magistrate inflicted a penalty of £1 and costs.

Sale of Food and Drugs Acts.

Spirit of Nitre.

On Wednesday, July 1, 1903, at Barnet Police Court, John Thomas Lock, grocer, etc., of Boreham Wood, Elstree, was summoned for selling spirit of nitre deficient to the extent of 58 per cent. Defendant's manager said the article had been in stock about two years. It was purchased by his predecessor. There was very little of it sold and he attributed the deficiency to evaporation. He was certain it had not been tampered with. Defendant was fined £1 6s. 6d., including costs.

Blue Pills.

On Saturday, July 4, 1903, at the Guildford County Bench, before Mr. F. E. Eastwood (in the chair) and Sir Philip Magnus, Mr. Edward Gane Inge, chemist and druggist, of Haslemere, Surrey, was summoned for having sold blue pills not of the nature, substance, and quality demanded, but containing mercury 17·4 per cent. and vegetable matter 82·6 per cent. Mr. Kirby (of Messrs. Neve, Beck and Kirby), on behalf of the Chemists' Defence Association, represented the defendant.

Frederick Hampshire deposed that on April 29 he went to defendant's shop at Haslemere and asked the assistant, Joseph Hutt, for a shilling box of blue pills. He replied they had only got nine left, if those would do; or he would make him up a shilling box. They were four grains, but he could make them any size witness liked. The pills were eventually given to him. In cross-examination he admitted he did not ask for any particular strength. He knew there were different strengths, but he was simply told to ask for a shilling box of blue pills. He was sure it was not after the assistant had gone out to Mr. Inge that he said they were four-grain pills. He believed he positively said they were four-grain pills.

Mr. Talbot Kyle, Inspector in the service of the Surrey County Council, deposed to going into the shop after his assistant had purchased the pills. On the box he found the words "blue pills" written. While they were being divided Hutt said, "We make them as required. Four-grain pills you have got there, but I suppose that does not matter so long as you have got B.P."

Dr. Thomas Stevenson, public analyst for the County of Surrey, said the three pills he received from Mr. Kyle weighed nearly 18 grains—17¾ grains. They were of nearly equal weight, and contained 17·4 per cent. of mercury. The blue pill of the British Pharmacopœia should contain one-third of its weight, or 33 per cent. of mercury, so that each of these pills contained three grains of the blue pill of the British Pharmacopœia. The pills weighed nearly six grains each and in a six-grain pill there should be two grains of mercury, so that these samples contained about half the proper quantity of mercury.

Cross-examined: It was quite legitimate to put a coating on and to add an excipient if the matter was soft. If this was a three-grain pill sold as a three-grain pill, the only objection which could be made to it was that it was rather large.

Mr. Kirby submitted that he had no case to answer. As Dr. Stevenson had said, the purchaser had nothing to complain of, and it was obvious there had been a mistake.

The Bench intimated that they would prefer to hear him, and Mr. Kirby then said that in this case Mr. Inge purchased of Messrs. Allen and Hanburys—the best firm he could possibly get it from—blue pill mass, which, when he received it, was very fresh and very soft. For the purpose of rendering it of proper consistency for it to be made into pills he added an excipient—vegetable substances of no medicinal value and of no medicinal harm. They had not to go into the question of the blue pill mass, because that was certified by the British Pharmacopœia. It could not be said that by adding the excipient the purchaser was prejudiced. There was no reason why a man should not add sufficient to make it into the right consistency; otherwise they would not be able to get it into the form of pills at all. The question as to whether they sold a three or a four-grain pill was, perhaps, the one with which the Court was more immediately concerned, and he submitted that in this case this was quite immaterial, because the purchaser did not ask for any specific strength, as he had a right to do. Even if he had asked for a four-grain pill, and had received a three-grain pill, he did not think that would be a case for conviction under the Food and Drugs Act, which was intended to prevent deliberate fraud. Mr. Hampshire did not ask for pills of any particular strength, and he undoubtedly got blue pills. It was clearly a case in which there had been no contravention of the Act.

Joseph Hutt, assistant to Mr. Inge, denied speaking to the first witness. The pills were purchased from an apprentice, who labelled them and received the money. Witness was, however, in the shop, and Hampshire could hear what he said to the apprentice as to there being only nine pills, and that he would be willing to make up a box if he so desired. He did not tell Hampshire they were four-grain pills. He was not sure they were, and only said they were probably four-grains. That was after the purchase had been completed, and after Mr. Kyle had come into the shop.

Mr. E. Gane Inge, the defendant, said he was in his garden at the time the purchase was made. Mr. Hutt was in charge of the shop. Hutt informed him of the nature of Mr. Kyle's visit, and that merely a box of blue pills had been asked for. Witness said he then made some disparaging remarks about the methods of collectors in not asking for a definite strength of pill. Both the apprentices, as well as Hutt, were in the shop at the time, and they bore out his assistant's statement exactly. He admitted that the box was not labelled as he would have liked himself. The strength of the blue pill was labelled if they were asked for it. The usual custom was to give a four-grain pill with a black draught.

The Bench, after a brief consultation, dismissed the case. The Chairman said they had decided upon this course because they considered that prosecutor did not ask for any special strength. He asked for blue pills and got them. The summons was accordingly dismissed.

Workington County Court.

Claim for Goods Supplied.

On Thursday, July 2, 1903, before Judge Steavenson, John Henry Drummond, liquidator of Cooper and Stern, Limited, drug-shop keepers, of Market Place, Cockermouth, sued Mrs. Mary A. Scott, of Cockermouth, for £27 3s. 10d., balance of account for goods supplied.

For the plaintiffs, Mr. F. Fisher said the only question was whether Mrs. Scott or her husband was liable for the debt. The plaintiff company was formed in 1899 to take over the business of Walter Stanley Scott, chemist and druggist. Mr. Scott was appointed managing director in full control of the business for seven years, and when the company went into liquidation the liquidator, on going into the accounts, found an account against Mrs. Scott as well as for goods supplied to Mr. Scott.

Mr. Scott said the items were debited to Mrs. Scott's account for the purpose of estimating his household expenses, but he had not Mrs. Scott's authority to debit her with all these items.

Mrs. Scott, in evidence, denied that Mr. Scott had authority to pledge her credit, and had ever informed her that he was charging her with the items contained in the account.

The Judge held that it was not proved that the goods debited to Mrs. Scott were sold and delivered, that the account was ever stated to her, or that if the account was ever rendered to her any money was paid on account. There would be judgment for the defendant, with costs.

Medicine Stamp Duty Acts.

Cold Cure and Corn Silk.

On Wednesday, July 8, 1903, at Marlborough Street Police Court, London, W., Mr. George Howard Fish, of 42, Shaftesbury Avenue, was summoned before Mr. Plowden for having, on March 14, sold "One Hour Chicago Cold Cure" and "Mead's Corn Silk," without Government stamps.

Thomas Jameson, officer of Inland Revenue, gave evidence of purchases at the defendant's shop, which bore the name of Mead and Co.

Mr. Plowden asked if the cold cure was for a cold caught at Chicago? Was it a "Chicago cold" or "cold cure"?

Mr. Fish said he had no idea that the preparations had been sold at all. He must have been at meals when his assistant supplied them.

Mr. Plowden said the defendant was responsible, and imposed fines, amounting, with costs, to £4 4s. 0d.

POISONING CASES AND INQUESTS.

The deaths by poisoning reported during the seven days ended Wednesday, July 8, 1903, numbered seven, thus:—

Poison.	Accident.	Suicide.
Aconite	1	—
Carbolic Acid	1	—
Chloral Hydrate	—	1
Hydrochloric Acid	—	2
Laudanum	1	—
Mercuric Chloride	1	—
Total	4	3

Aconite.—William Suffield, dentist, Sunderland, died from "an overdose of aconite, taken whilst suffering from the effects of alcohol."

Carbolic Acid.—A Birmingham painter accidentally drank carbolic acid, which had been supplied by a chemist in a properly labelled bottle.

Choral Hydrate.—A Glasgow warehouseman committed suicide in a hotel in Lanark by taking chloral hydrate.

Hydrochloric Acid.—A painter at Wells, and a Battersea cab-driver, committed suicide with spirit of salt.

Laudanum.—Laudanum, accidentally taken, caused the death of a youth at Greengates.

Mercuric Chloride.—A child at Watford, sixteen months old, helped itself to a piece of a tabloid of mercuric chloride, and died from poisoning.

Attempts at Suicide.—Disinfectant, liniment, and sugar of lead were used by would-be-suicides.

NOTES IN PARLIAMENT.

BY OUR PARLIAMENTARY REPRESENTATIVE.

Medicine Stamp Duty.

Sir John Leng, M.P., has asked the Secretary to the Treasury whether, under a notification recently issued by the Board of Inland Revenue, a druggist will not be allowed to sell the smallest quantities of pills, powders, mixtures, or other form of medicine without attaching to every descriptive label, either written or printed, a 1½d. stamp; whether the Board has considered the extra cost to the poor of this additional charge, or the danger of selling drugs unlabelled; and whether, in view of the interests of the poorer classes and of the public safety, the Board will, still in accordance with their former intimation, recognise the necessity for giving to a preparation such a designation or name as shall distinguish it from other medicines, and attribute some further meaning to such words as cough mixture, liver pills, lip salve, teething powders, corn paint, etc. Mr. Shaw-Stewart, M.P., has addressed a similar question to the Chancellor of the Exchequer, worded as follows:—To ask if the Board of Inland Revenue have notified chemists that after September 30 they will be no longer permitted to sell to customers small packages bearing a descriptive title unless a medicine stamp of the value of 1½d. is affixed to each package, even though the value of such package be only 1d. or 2d.; and whether, seeing that the alternative will be for chemists to sell all packages without any descriptive title, he will state what steps he proposes to take to prevent, in the one event, so high a tax being placed on chemists and their customers; and, in the other, to guard the public against danger. The answer given by Mr. Arthur Elliot, M.P., to Sir John Leng's question is to the effect that the change in the Board's practice has been rendered necessary by the decision of the High Court in the recent case of Ransom *v.* Sanguinetti, the effect of which is to render liable to the Medicine Stamp Duty any preparation sold under a description which refers only to the ailment which it is intended to remedy, *e.g.*, cough mixture. But payment of duty will not be required in respect of a preparation which bears upon the label an indication of its ingredients, such as will bring the article within the scope of the special exemption in favour of known, admitted, and approved remedies, sold by duly qualified persons, as interpreted by the recent decision in the case of Farmer *v.* Glyn-Jones. Mr. Shaw Stewart has been referred to the same answer. Another question on the subject stood in the name of Captain Norton on Thursday.

A Commercial Department.

The movement for consolidating the commercial and trade interests of the country in one department has advanced a further stage in the appointment of a committee to inquire into the position and duties of the various Government departments. Lord Jersey is to be chairman of the committee, which will also include Sir John Gorst, Sir Jas. Mackay (a member of the India Council), Sir Chas. Ryan (late Comptroller and Auditor-General), and another gentleman who is not yet chosen.

Spirit for Motor-Cars.

Mr. Boland has asked the Irish Chief Secretary whether, seeing that the petrol used for motor-cars is a purely foreign product, experiments will be made by the Department of Agriculture with a view to supplanting its use by alcohol extracted from Irish-grown beetroot and potatoes. From Mr. Wyndham's reply it appears that the matter is engaging the attention of the department.

Guinea Postal Orders.

The Guinea Postal Orders Bill has been read a third time in the House of Lords, and now only awaits the Royal assent.

SCHOOL OF PHARMACY NOTES.

The Prize Distribution and Afterwards.

The distribution of prizes on June 26th was a pleasant little function which was not by any means lacking in the picturesque. The lady students, exceptionally numerous and successful during the past session, were present in force, and there were several lady visitors in the lecture theatre. The gowns and hoods of some of the teaching staff lent variety to the scene, and emphasised the connection of the School of Pharmacy with the University of London. This connection is expected to be again brought to the fore when the results of the October B.Sc. examinations are announced, as an unusually large number of "Square" students are said to be intending to sit for the final this year. By the time the prizes of the next session are distributed, the number of hoods of "black silk, edged with gold-coloured silk" may be found to be much larger than on Friday week. On the evening of "prize-day" an informal supper and smoking concert were held, with no little success, nearly all those who had attended the School during the session being present. Mr. W. H. Allen, the School of Pharmacy poet, recited one of his latest compositions, which had been specially written for the occasion.

The New Prospectus.

The new prospectus is a great improvement on the old, the illustrations, from new photographs, being quite excellent. Among the changes in the time-table is the alteration of the hour for the first lecture of the day from 9.30 to 9. The subject-matter and arrangement of the advanced course of lectures in materia medica is more fully and clearly defined. Other new features are the list of prize-winners of the session and the publication of particulars of the Students' Association and the Pharmaceutical Football Club. The syllabus does not include any mention of the William Martindale silver medal, which is to be given for pharmacy, as this award has only just been decided on. Attention may be directed to the report of the Dean of the School, in which the lectures delivered by Mr. Deane on the theory of the work in practical chemistry are mentioned. This is one of those innovations of which past students are able to appreciate the value.

Scholarships and Prizes.

Competition for the Jacob Bell scholarship continues to be keen. For twelve out of twenty-six candidates to obtain qualifying marks—66 per cent.—is not below the average of recent years, although last year twelve out of eighteen qualified. Among the ten mottoes quoted there are only two cases of "Labor Omnia Vincit," while no candidate seems this year to have had recourse to "Nil Desperandum." The announcement in last week's Journal of the decision of the Martindale

Memorial Committee has set students wondering whether the Martindale medal will replace the silver medal for pharmacy or whether two medals will be given for this subject.

Mr. Woolcock's Marriage.

On the same day as the distribution of prizes Mr. W. J. U. Woolcock was married at Exeter to Miss K. M. Homer. Miss Homer was a student at the School of Pharmacy during the session 1900-1901, while Mr. Woolcock's oratorical powers at the meetings of the School of Pharmacy Students' Association and the School dinner made him a popular and conspicuous figure of the same and the preceding session. Their friends at the "Square" wish Mr. and Mrs. Woolcock all happiness and prosperity.

SCHOOL AND COLLEGE NEWS.

Cricket Match. — London College v. Metropolitan College.—Played at Nunhead, June 27, 1903. First innings: London, 64 (Watt, 30); Metros, 19. Second innings: London, 28; Metros, 26 for six wickets. Match decided on first innings, London winning by 45 runs.

Westminster College of Chemistry and Pharmacy.—The last botanical excursion of the session took place on Friday week to Kew Gardens. There was a large attendance. After partaking of a substantial tea at the Rose and Crown Hotel, the result of the college prize competition was made known.

The Manchester College of Pharmacy.—At the examination held at the Manchester College of Pharmacy, Mr. Wilfrid Hill, of Ashton-in-Makerfield, secured the first prize for theoretical science, and Mr. John Yates, of Blackburn, carried off the silver medal given by an old student for the best analytical work.

University College, London.—The prizes of this college were distributed by Sir Edwin Durning-Lawrence, M.P., on Monday, July 6. Professor Starling, Dean of the Faculty of Science, in the course of his speech, stated that the Council of the College and the University of London were co-operating in drawing up a Bill to enable incorporation to take place, and they hoped that the Bill would be introduced next Session. It was proposed in the Bill to seek general powers for the incorporation of other institutions into the University.

Robert Gordon's College, Aberdeen. — On the suggestion and with the co-operation of the Aberdeen Pharmaceutical Association, the Governors of Gordon's College have established a School of Pharmacy, the course of instruction at which is designed to cover the entire syllabus of the Pharmaceutical Society of Great Britain, so as to enable its students to pass the Minor and Major Examinations. The new prospectus of the school has just been issued, and is an indication of the good work which the department has done, and of the still better results which are likely to be achieved by the school. The Aberdeen Pharmaceutical Association again offers two scholarships, each consisting of free tuition for three months in the day classes at the school, the scholarships to be competed for by students attending the evening classes at the end of the session. The head teacher is Mr. Gilbert Simpson, Ph.C. For the October examination of the Pharmaceutical Society a short course of tuition will commence on August 24.

BRITISH PHARMACEUTICAL CONFERENCE, 1903.

PAPERS FOR THE BRISTOL CONFERENCE.

The following papers have been promised for the Bristol meeting of the British Pharmaceutical Conference. Authors are requested to note that their manuscripts should be received by the Hon. Secretary, Mr. F. Ransom, the Chilterns, Hitchin, not later than Wednesday, July 17.

(1) Ferri Arsenas, P.B. By W. W. S. Nicholls, B.Sc.

(2) Note on the Chloroforms of Belladonna and Aconite. By R. Wright, F.C.S., Ph.C.

(3) A Spurious Cusparia Bark. By E. W. Pollard, B.Sc.

(4) Liquor Sennæ Concentratus and Liquor Rhei Concentratus. By F. C. J. Bird.

(5) The Preparation of Absolute Alcohol. By Professor Sydney Young, D.Sc., F.R.S.

(6) The Future of Pharmacy. By Leo. Atkinson.

(7) Pharmacy from a Colonial's Point of View. By S. G. W. Rich.

(8) The Pharmacology of the Suprarenal Glands. By J. C. McWalter, M.A., M.D., D.P.H.

(9) Compressed Tablets. By Edmund White, B.Sc., F.I.C., and Henry Rodwell.

(10) A Comparison of Dieterich's Process for the Determination of Morphine in Opium, with that of the British Pharmacopœia. By Harold Evan Matthews.

(11) On the New Pharmaceutical Institute of the Berlin University, and its Arrangements. By Prof. Thoms, Ph.D. (Communicated, with lantern slides, by Peter MacEwan, F.C.S.)

(12) Note on Compound Tincture of Benzoin. By Alfred Wright, A.K.C. (Lond.), A.A. (Oxon), Pharmaceutical Chemist.

(13) Balearic Pharmacy. By J. W. White, F.L.S.

(14) The Chemistry of the Bath Waters. By W. J. Hallett.

(15) A Note on Hyoscyamus Muticus. By F. Ransom, F.C.S., and H. J. Henderson, Ph.C.

(16) Chemical Examination of Kô-sam Seeds. By Frederick Power, Ph.D., and Frederic Lees.

(17) Comparative Anatomy of the Barks of the Salicaceæ. By Pierre E. F. Perredes, B.Sc., F.L.S.

(18) Crystals in Extracts. By F. H. Alcock, F.I.C.

(19) Willows used in Pharmacy. By E. M. Holmes, F.L.S.

(20) Agricultural and Horticultural Poisons. By E. M. Holmes, F.L.S.

(21) A New Method for the Determination of Uric Acid in Urine. By A. F. Dimmock, M.D., M.R.C.S., L.S.A., Medical Officer of the Harrogate Infirmary, and F. W. Branson, F.I.C., F.C.S.

(22) A Concurrent Curriculum. By H. Wippell Gadd, F.C.S.

WHOLESALE DRUGGISTS' PICNICS.

A Derbyshire Excursion.—On Wednesday, July 1, the employees of Messrs. A. Greaves and Son, chemists, Chesterfield, had their annual outing. Mr. C. Fisher drove them to Monsal Dale by way of Owler Barr, Froggatt Edge, and Hassop. After a brief stay at the Dale the party proceeded to Ashford, and did ample justice to an excellent meal that was provided at the Bull's Head. The drive home was by way of Bakewell, where another enjoyable stay was made, Chesterfield being reached about midnight.

Evans, Gadd and Co.'s Outing.—The Exeter employees of Messrs. Evans, Gadd and Co., Limited, wholesale chemists, Exeter and Bristol, held their annual outing on Saturday last, a large party going by train to Lynton, thence to Lynmouth, by the North Rock Walk and Cliff Railway. The Glen Lyn was next visited, and the company afterwards sat down to dinner at the Lyn Valley Hotel, under the presidency of Mr. H. Gadd, J.P., who responded to the toast of "Prosperity and Success to the Firm." Brakes subsequently took the party to Watersmeet, and then, returning by the Cliff Railway to Lynton, there was another hill-climb before the excursionists took train for Exeter, which was reached after a most enjoyable outing.

Down the Dee.—Messrs. T. Kerfoot and Co.'s staff and employees held their annual picnic on Saturday, June 27. The party of nearly 200 left Ashton by saloon train, and a pleasant journey was made to Chester, where the various places of interest were inspected. The party then proceeded by special steamers up the Dee to Ecclestone, where tea was provided. Mr. E. H. Kerfoot occupied the chair, in the unavoidable absence of Mr. Kerfoot, and was supported by Messrs. J. Fildes, B. Arnfield, W. A. Arbuckle, Joseph Martin, S. W. Herbert, C. J. Henshaw, and John Martin. Letters of apology were read from Messrs. T. F. Morley, E. J. Wilks, S. S. Evans, and R. Harrison, who were unable to be present. Mr. E. H. Kerfoot's welcome to the party on behalf of the firm was suitably responded to by Mr. Fildes and others. After the customary toasts a pleasant evening was spent on the river, the party eventually arriving at Ashton about 10 p.m., after a most enjoyable day.

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

The Papal Pharmacy.—During the Pope's illness, the pharmacy at the Vatican has remained open night and day, a supply of oxygen being kept in readiness.

Modern Life and Sedatives.—This is the title of a communicated article in the *Spectator* of July 4, in which the growth in the practice of taking sedative drugs is lamented.

Analyst's Report.—The only sample of drugs taken at Salford last quarter under the Sale of Food and Drugs Acts was cream of tartar. That was adulterated with 10 per cent. of lime salts.

Damage by a Gale.—On Friday, July 3, a large plate-glass window of the pharmacy occupied by Mr. Ruxton, chemist, Arbroath, was blown in by the gale, much damage being done to goods in the window.

Hull Tradesmen's Walk.—A walking competition was arranged by Bovril, Limited, to take place at Hull on Thursday, July 9, the competition being restricted to the Hull and district grocers, chemists, confectioners, and their assistants.

Workhouse Drugs.—Wokingham Board of Guardians has decided not to purchase the drugs required for the workhouse from the local chemists and have them dispensed at the workhouse, but to allow the Medical Officer £20 for providing drugs.

Radium at Leeds.—On June 23, Mr. F. W. Branson, F.I.C., lectured at the Leeds Law Institution on radium before the Leeds Photographic Society. Representatives of the Geological Society and the Naturalist Club of the same town were also present.

Grocers and the Pharmacy Bill.—The Parliamentary Committee of the Grocers' Federation has urged on the Government "the unfairness of creating monopolies for any one class of traders." The Bill, says the Committee, has been the subject of careful watching.

The C.D.A. Annual Meeting.—At the annual meeting of the Chemists' Defence Association on Tuesday next (see announcement in *Inset*), Mr. C. H. Kirby, of the firm of Neve, Beck and Kirby, solicitors, will read a paper on the recent decisions under the Medicine Stamp Acts.

Chemists' Traveller Sent to Prison.—In Hamilton Sheriff Court, on Friday, July 3, before Sheriff Thomson, John Mann Deans, traveller, Crosshill, Glasgow, pleaded guilty to having embezzled £10 8s. 5d. while in the employment of Mr. Suttie, manufacturing chemist, Cambuslang. The accused was sentenced to twenty days' imprisonment.

Technical Education and Duty-free Alcohol.—It has been pointed out in the lay Press by several correspondents that if Lord Rosebery's scheme of technical education is to be successful, duty-free alcohol for manufacturing purposes is absolutely necessary. Nowhere, perhaps, is this concession more required than in the manufacture of drugs, perfumes, and fine chemical preparations.

The Pharmacy Bill.—In the current issue of the *Veterinary Record* are reprinted the remarks of the *Mark Lane Express* and *Agricultural Journal* on the Pharmacy Bill, together with the comment thereon which recently appeared in these columns. Our veterinary contemporary is altogether in favour of the Bill, and expresses the hope that the Council of the Royal College of Veterinary Surgeons will give their assistance to pharmacists.

Farmers and the Purchase of Sheep-dips.—An article in *Farm and Home* very effectively exposes the motives of Mr. Thomas G. Dobbs and those who act with him. The fact—for such it is—that the alleged difficulty in obtaining poisons and their alleged excessive price are alike mythical is emphatically re-stated, and farmers are urged to consider Mr. Dobbs' letter, and "judge whether it is not written rather in the interest of the manufacturer, trader, and agent of poisonous compounds than in the interest of the agriculturist and horticulturist."

"Passive Resisters" in China.—Consul Werner, in his report on the trade of Kiungchow (Hoihow) for the year 1902, states that an attempt to levy an extra tax on imported opium met with a stolid opposition from the opium hongs. The wei yüan, or deputy, sent from Canton, received no encouragement from the taot'ai, and the opium merchants were so determined not to pay the tax, declaring that if it were imposed they would import no more opium, that the deputy was obliged to take his departure, just as the merchants were on the point of invoking Consular intervention.

Royal Institution.—A general monthly meeting of the members of the Royal Institution was held on Monday afternoon (the 6th inst.), Sir James Crichton-Browne, Treasurer and Vice-President, in the chair. The following were elected members:—Lord Oxmantown, Mr. R. S. B. Hammond Chambers, K.C., Mr. M. B. Field, Mr. H. D. McLaren, Mr. G. Marconi, Mr. R. Pearce, Mr. E. P. S. Roupell, and Mr. W. Wavell. The special thanks of the members were returned to the Misses Gladstone for their present of a portrait of Dr. John Hall Gladstone, F.R.S.

Dover Corporation and Its Drugs.—At the meeting of the Dover Corporation on July 1, a letter was read from Mr. A. L. Thompson, chemist and druggist, relative to the recent discussion as to his tender for the supply of chemists' goods to the Corporation. Mr. Thompson asked why his tender had not been accepted, and he denied the statement of the Town Clerk that he knew there would be no other tender. He also pointed out that he had tendered this time on the revised schedule of prices, and not on the old one as formerly. He trusted that the Council would deal with his tender in a fair and business-like manner. As the Council had already decided to invite fresh tenders, no action was taken with regard to the letter.

Devon Chemists' Profits.—The correspondence in the *Western Morning News*, alluded to in these columns last week, has continued. One writer gives examples of the so-called "chemists' piracy." "The chemist buys Pears' unscented soap (6d. tablets advertised) at 3s. 4d. per dozen tablets, pays carriage to his shop, retails them singly or in lots of two or three tablets, neatly wrapped, at 3s. 6d. per dozen, thereby roguishly robbing the customer of one-sixth of a penny. In the case of Beecham's pills the maximum theft is one halfpenny per 1s. 1½d. box, costing 10d., retailed at 10½d." Another correspondent, writing over the pseudonym, "Aqua Pumpa," complains that he was charged 1s. 6d. by a chemist for dispensing a prescription which ordered merely sodium bromide in water. The sapient conclusion drawn by this astute critic is, "What valuable brains chemists must possess!"

Drugs in Ireland.—The annual report of the Local Government Board for Ireland has just been issued. Mr. J. E. Brunker, M.A., advising pharmacist to the Board, reports on the analysis of drugs during the year 1901-2. Seven thousand nine hundred and eighteen samples of drugs were examined, of which 3·953 per cent. were found to be deficient. The greater number of the defective drugs were replaced by the contractors at their own expense, at the request of the Boards of Guardians. Drugs supplied for the use of medical charities were, on the whole, of good quality, and showed a marked improvement on the previous year. The most marked and frequent deficiencies were in respect of (1) the extractive and alcoholic strength of liquid extracts, liquors, and tinctures; (2) the volatile constituents of spirits and liniments. Mr. Brunker suggests that where so much trouble is taken to ensure that drugs are delivered in good condition, more might be done by the Guardians to ensure that stocks at the dispensaries shall be kept in an efficient state.

Coin-Lifting Capacities.—"As much as will go on a sixpence" is a not unusual direction in medical prescriptions. An Australian Medical Guide, recently published, gives the following table, which shows the weights of various powdered drugs for the three smallest silver coins in general use.

POWDER CAPACITY OF COINS.

	3d. Grs.	6d. Grs.	1s. Grs.
Ammonium carbonate	6	9	15
Antipyrine	6	9	15
Bismuth carbonate	7	10	17
Boracic acid	8	12	20
Citric acid	6	9	15
Gregory's powder	2	3	5
Magnesium sulphate	8	12	20
Phenacetin	6	9	15
Potassium bicarbonate	10	15	25
Potassium bitartrate	8	12	20
Potassium bromide	12	18	30
Potassium citrate	8	12	20
Potassium iodide	16	24	40
Quinine bisulphate	2	3	5
Salol	6	9	15
Sodium bicarbonate	10	15	25
Sodium salicylate	5	7	12

An Overdose of Brimstone and Treacle.—On Tuesday last Mr. J. W. Loader Cooper, the Chichester Coroner, held an inquest on the body of Arthur Phillips, a labourer, whose death arose from an unusual cause. On Saturday night the deceased and all his family took large doses of brimstone and treacle. In the night they were all sick and had diarrhœa, but, thinking it was but the usual effects of the medicine, they called in no doctor. Next morning the deceased died, complaining of excessive thirst just before death. Dr. Bostock, who had made a post-mortem examination, said the dose taken appeared to have been excessive, for he found intense inflammation in the stomach and about six teaspoonfuls of the powder which was in the box of brimstone produced. A proper dose was a teaspoonful, unless a medical man prescribed otherwise. He had examined the brimstone from which the dose had been taken, and found it impure and unfit for use as a medicine. The jury found that the deceased died from an overdose of brimstone and treacle.

Radium Fluorescence.—An interesting letter appears in *Nature* from the pen of Mr. F. Harrison Glew, chemist and druggist, Clapham Road. Mr. Glew finds that the following substances are distinctly fluorescent under radium radiation:—

Opal Glass.
Soda Glass.
Lead Glass.
Uranium Glass.
Didymium Glass.
Celluloid.
Mother of Pearl.
Mica.
Borax.
Alum.
Quartz.
Sulphur.
Sugar.
Starch.
Fluor Spar.
Yellow Resin.
Cotton Wool.
White Paper.
Cupri Sulph.
Quinine Sulph.
Human Skin.
Human Nails.
Camphor.
Cetaceum.
Solid Paraffin.
Liquid Paraffin.
Turpentine.
Chloroform.
Water.
Glycerin.

Mr. Glew has been unable to detect decided fluorescence in the following substances even with a more powerful source of radiation, or a more sensitive receiver than the eye:—

Potass. Bichrom.
Ruby Glass (flashed).
Prepared Chalk.
Ebonite.
Silk.
Selenium.
Plaster of Paris.
Iodosulphate of Quinine.
Woods (various).
Camphor Monobromate.

In the case of translucent substances, the effects are best observed by looking through the substance, placing the tube of radium nearly in contact with the far side. If the experiments are carried on too near the eye, the direct fluorescence of the eye itself interferes with accurate observations. Little cups made of thick tinfoil are very convenient for the examination of liquids; the open vessel is viewed from above, the radium being placed below the cup. It is important to prepare the eye by excluding every trace of light from the room for at least a quarter of an hour before the experiments are made.

Draught-Proof Lamp.—A new form of mineral oil lamp, invented by Mr. J. F. C. Farquhar, of Sydney, New South Wales, is designed to prevent the flame from being affected by draught, so that it will burn steadily without smoke or flickering in the open-air or exposed places. The top of the chimney is protected by a wind-guard, but the chief novelty of construction lies in the fact that all the air required for combustion enters at the base, none passing in by perforations close to the burner. The base-plate forms an air-chamber, from which the air is admitted to the flame up the central pillar, the passage being so protected with baffle-plates that a strong current of air directed upon the base has the effect of rather increasing the supply of air to the burner instead of diminishing it by causing an induced draught down the chimney, as is liable to happen with many lamps. It may be noticed that in order to secure this result a circular base is not permissible, else an air current falling upon it will be deflected tangentially and suck air downward from the burner. Another feature of the arrangement is that it enables the wick-tube, which is circular, to be separated from the oil reservoir by the air passage, the oil reaching the wick by means of two small pipes only; thus the temperature of the reservoir is kept down, and the flame is prevented from entering it, whether by induced draught or by the upsetting of the lamp. The lamps, which are being introduced by Mr. H. J. Wagstaff, of 150, Leadenhall Street, were shown last year at the Royal Agricultural Society's Show, in Sydney, and received two first prizes and one special award, in addition to the Fred Walsh gold medal for the most important invention of Australian origin during the year.

King's College: Course in Bacteriology.—A vacation course in Practical and Clinical Bacteriology will be held daily from 10.30 to 1 o'clock, commencing Wednesday, August 5, and ending Saturday, August 15. The course will consist of lectures, demonstrations, and practical work; in the latter, the members of the class will make for themselves permanent preparations of the chief pathogenic micro-organisms and will carry out the principal manipulations employed in bacteriological investigations. The fee will be £3 3s., including all materials and the use of a microscope. Names must be sent in as soon as possible to the Secretary or to Professor Hewlett, Director of the Department.

Syllabus.

	Lectures, etc.	*Practical Work.*
Aug. 5.	Morphology and biology of the bacteria	Types of organisms. Preparation of cover-glass specimens
„ 6.	The cultivation of organisms. Culture of media	Ditto. Gram's method
„ 7.	The cultivation and isolation of organisms	Cultures and plate cultivations
„ 8.	Anthrax	Anthrax
„ 10.	Tubercle and leprosy	Tubercle and leprosy
„ 11.	Typhoid fever	Typhoid and coli bacilli
„ 12.	Diphtheria	Diphtheria
„ 13.	Suppuration and septic diseases	Pyogenic cocci
„ 14.	Pneumonia and gonorrhœa	Pneumococcus and gonococcus
„ 15.	Tetanus and malignant œdema	Tetanus

PERSONALITIES, BUSINESS CHANGES, ETC.

Messrs. Walker and Harris, of Sun Street, Canterbury, have been appointed chemists to the Corporation for the ensuing half-year.

Mr. Alfred C. Chapman, of 8, Duke Street, Aldgate, E.C., has been appointed by the St. Albans City Council as public analyst, at a fee of 10s. 6d. for each sample.

Messrs. Ferris and Co., wholesale druggists, of Union Street, Bristol, have been appointed by the Bristol Board of Guardians to supply drugs to the workhouse for the next two years.

Mr. Richard A. Robinson, J.P., Deputy-Chairman of the London County Council, was presented to President Loubet at St. James's Palace, on Tuesday last, on the occasion of the presentation of an address by the Council.

Mr. E. A. Neill, M.P.S., formerly with Messrs. Standring, Son and Co., Manchester, and latterly with Mr. A. Mander, Great Malvern, has opened new premises in Penrhyn Road, Colwyn Bay, under the name of the Penrhyn Pharmacy.

Mr. Andrew Naysmith, High Street, Arbroath, has written to Mr. John Morley, M.P. for the Montrose Burghs, asking him to draw the attention of the Chancellor of the Exchequer to the changed practice of the Board of Inland Revenue with regard to the Medicine Stamp Duty Acts. Mr. Morley has replied promising to inquire into the matter.

Mr. J. M. Treneer, the senior Bell Scholar this year, is the son of Mr. J. Treneer, of Carhays, St. Austell, Cornwall. He was apprenticed to Messrs. R. and F. Roper, pharmaceutical chemists, 34, Tavistock Road, Plymouth. Mr. Treneer has lately been studying at the Plymouth Technical Schools in the scientific subjects of the scholarship.

TRADE NOTES.

Arthur H. Cox and Co.—This Brighton firm points out an error in the prices quoted for cascara tablets in their last week's advertisement in the *P.J.* The present prices for twelve dozen lots are as follows: 25 in bottle, 2s per dozen; 50 in bottle, 3s. 6d. per dozen; 100 in bottle, 6s. 6d. per dozen.

F. Darton and Co., the old-established firm of dealers in photographic apparatus and accessories, issue an illustrated booklet in which are described various articles of interest to the photographic chemist. It is a handy little list, and the prices seem to us very reasonable indeed. Copies are supplied from 142, St. John Street, London, E.C.

Ovo-Lecithine is among the new medicaments which have recently been the subject of physiological and clinical research. Chemically, this product is diastearo-glycerophosphoric ester of choline, and is prepared for administration in the form of pills, confection and infection. Those who wish to learn more about it should apply to Billon's Ovo-Lecithine Depôt, 46, Water Lane, Great Tower Street, E.C., for an instructive little booklet, which is full of information concerning this interesting compound.

Southall Brothers and Barclay, Limited.—The demand for standardised tinctures is growing every day, and the dispensing of galenicals of known quantitative composition should be encouraged when the necessary factors for satisfactory standardisation are available. It is pleasing to note that the old-established Birmingham firm, mentioned above, is in a position to supply chemists with such preparations; and there can be no doubt as to the reliability of goods prepared by this house. For further particulars readers should refer to the announcement appearing in our advertisement pages.

COMPANY INTELLIGENCE.

Karmelite, Limited (77,833).—Registered June 25. Capital, £10,000 in £1 shares. Object, to adopt an agreement with H. Engholm, and to carry on the business of chemists, druggists, drysalters, importers and manufacturers of and dealers in pharmaceutical, medicinal, chemical, and industrial preparations, dealers in proprietary articles, etc.

Apollinaris and Johannis, Limited.—The report for the year ending March 31 last shows a net profit of £171,841 19s. 3d., which, with the amount brought forward from last account, makes a total of £181,216 17s. 6d. The directors recommend a final dividend of 5 per cent. on the ordinary shares; they further recommend placing £20,000 to the reserve, as compared with £15,000 last year, leaving £8,216 17s. 6d. to be carried forward, as compared with £8,374 18s. 3d. carried forward last year. The sales of Apollinaris water compare as follows:—For the year ending March 31, 1901, 26,587.196 bottles; for the year ending March 31, 1902, 27,683.249 bottles; for the year ending March 31, 1903, 28,543,578 bottles.

PATENTS AND TRADE MARKS.*

New Patent Applications.

NEW TITANOUS CHLORIDE (No. 16,238, of 1902).—H. Spence and P. Spence and Sons, Limited, Manchester Alum Works, Holland Street, Manchester. Relates to the production of a new titanous chloride suitable for use as a reducing agent. Consists in preparing a solution of titanium chloride and subjecting it to a process of reduction by electrolysis. The resulting solution is evaporated, at a temperature of about 65° C., to a specific gravity of about 1·5. On cooling a large proportion of the new titanous chloride is produced in a crystallised condition, and can be separated from the mother liquor by means of a centrifugal apparatus or other suitable means. The evaporation may be continued until the result is a solid cake of the chloride, or it may be continued only so far as to yield a concentrated solution of the new titanous chloride.

MANUFACTURE OF NITRIC DIOXIDE AND NITRIC ACID (No. 21,828, of 1902).—G. Pauling, Olberhau, Saxony, Germany. This invention is based on the fact that a mixture of air and steam or air and oxyhydrogen gas heated to a very high temperature contains hydrogen and nitric dioxide (NO_2), besides uncombined nitrogen, oxygen, and water not dissociated. To avoid the regenerative action of dissociated hydrogen when the mixture cools, it is rendered inactive either by removing it from the mixture or by causing it to combine with another substance; for instance, chlorine, with which it is capable of forming a compound at the high temperature used.

FOLDING STETHOSCOPE (No. 25,067, of 1902).—W. J. Penfold, Warnham House, New Benwell, Newcastle-on-Tyne. Consists of two ear-pieces as at present in use, and two rigid tubes, short and curved, to one end of which the ear pieces are attached. Each tube has two slots or clips placed at intervals thereon, through which the ends of a spring are passed. The spring spans the face of the patient and holds the ear-pieces in position. When not in use the spring may be coiled up round the ear-pieces and tubes without being detached from the latter. The ends of the spring are slightly enlarged to prevent them coming out of the slots or clips aforesaid.

Note.—Opposition to the grant of any of the above-mentioned Patents must be filed at the Patent Office on or before August 11, 1903.

New Trade Mark Applications.

"**LOCKAXE**," for photographic chemicals in cartridges, by E. Seeley, 30, Belsize Road, N.W. 254,072.

"**KUDO**," for chemical substances used for agricultural, veterinary, etc., purposes, by McDougall Brothers, 68, Port Street, Manchester. 254,951.

"**POLEEDA**," for vegetable compounds as medicines for human use, by H. J. King-Potter, 56, Ludgate Hill, E.C. 254,511.

"**ANGELA**" label for medicinal preparation for the treatment of anæmia, by H. Green and Co., 15, Arundel Street, Strand, W.C. 251,714.

PORTRAIT or lady's head, for medicines for human use, by H. K. Lewis, 3, Newlands Street, Liverpool. 254,506.

"**AMASIRA**," for chemical substances used in medicine and pharmacy, by A. Locker, 16, Stitzenburgstrasse, Stuttgart, Germany. 254,679.

"**ROBWAL**," for chemical and pharmaceutical proprietary preparations, by O. Wallis, 189, Wardour Street, Oxford Street, W. 254,721.

"**VELVENE**," for chemical substances used in medicine and pharmacy, by F. W. Hampshire, 2, Wood Street, Derby. 254,972.

"**MENTOR**" and device, for apparatus and contrivances for use in relation to the health of workmen and others, by Zimmen and Co., 82, Mark Lane, E.C. 253,413.

"**TITTUMS**," for infants' food, by J. F. Milholland, 5, Port Royal Street, Kingston, Jamaica. 254,585.

"**PHENOFAX**," for perfumery, etc., by H. S. Wellcome, Snow Hill Buildings, E.C. 255,075.

Note.—Opposition to the registration of any of the above-mentioned Trade Marks must be filed at the Patent Office on or before August 8, 1903.

BANKRUPTCY INTELLIGENCE.

G. E. Heaton, Chemist and Druggist, Hastings.

The Official Receiver of the Brighton Bankruptcy Court reports that he has completed the realisation of the estate, and after meeting the costs and preferential claims, is prepared to pay to the unsecured creditors a first and final dividend of 10s. in the pound.

LONDON GAZETTE NOTICES.

PARTNERSHIPS DISSOLVED.

Edwin Richardson Blundstone and William Norman Bott, petroleum experts and consulting and analytical chemists, 14, Great Smith Street, Westminster. Debts will be received and paid by E. R. Blundstone.

Henry Osborne Fawcett Butcher and Walter Grahame Stewart, surgeons, Ware, Hertford.

Arthur Quarton, Horatio Merritt, and George Thomas Burton, trading as "Quarton and Merritt," wholesale drysalters and druggists, 213, Park Lane, Leeds. Debts will be received and paid by H. Merritt and G. T. Burton, who will continue to carry on the business.

Cornelius Frederick Stovin and Noel Maudsley, surgeons and apothecaries, Ilford. Debts will be received and paid by N. Maudsley.

Ernest Alfred Elkington and Charles Edward Hedges, surgeons, apothecaries, and accoucheurs, Newport, Salop. Debts will be received and paid by E. A. Elkington.

RECEIVING ORDERS IN BANKRUPTCY.

Thomas Wilkie and Samuel Joseph Leek, trading as E. Leek and Co., manufacturing chemists and co-partners, formerly 1, Falcon Grove, Battersea, and now at 35, Bedford Road, Clapham.

Thomas Sterratt, manufacturing chemist, 35, Mabel's Brow, Farnworth, Lancs.

Thomas Edward Sugden, dental surgeon, 109a, Western Road, Brighton, Sussex.

Benzoyl-Acetyl-Peroxide as an Intestinal Antiseptic.—P. C. Freer finds that benzoyl-acetyl-peroxide, although quite harmless when given internally is a very powerful germicide when hydrolised by contact with water. A solution of 1:3,000 is capable of killing vegetating germs in one minute, and is markedly more active as a germicide than phenol or hydrogen peroxide. It is given in the form of gelatin capsules, coated with celloidin in doses of 4 gr. It is specially recommended for the treatment of dysentery and other intestinal diseases due to pathogenic organisms.—*Chem. News* **87**, 112.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and 'Patent Notes for Inventors' free on application.

MARKET REPORT.

The quotations given below are the lowest net cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London, Thursday, July 9, 1903.

Business in Drugs and Chemicals shows little or no improvement, except for pressing wants after stock-taking. Buyers are holding off, and no improvement can now be hoped for before the autumn. Quinine is a little firmer. Opium, Morphine, and Codeine very firm. Iodides and Bromides are unchanged. Same can be said of Quicksilver and Mercurials. Cod Liver Oil is in *statu quo.* Acid Citric, Acid Tartaric, and Cream of Tartar steady. We give below a few quotations :—

OPIUM.—Here, while the market remains very firm, there is very little business passing. Holders ask up to 10s. per lb. for druggists' kinds and 9s. per lb. for seconds and manufacturing. Should the reports as to damage to the crop prove correct, a further advance in price would appear to be inevitable.

MORPHINE—Is firm at nominally unchanged price, some of the makers being by no means anxious to book orders of any importance at the figure lately ruling, viz., 4s. 4d. to 4s. 6d. per oz., according to quantity and packing, for the Hydrochlorate Powder and 2d. per oz. more for the Crystalline Salt.

QUININE.—Makers of the B&S and Brunswick brands still quote the Sulphate 1s. per oz. for 1,000-oz. lots in 100-oz. tins; while the speculative market is decidedly firmer, large sales having been made at 10½d. per oz. for spot and at 11d. per oz. for December delivery.

CODEINE—Without change at 10s. per oz. for the pure alkaloid, 9s. per oz. for the Citrate, Muriate and Sulphate, and 8s. for the Phosphate salts. In view of position of Opium and Morphine, an advance in the price of Codeine in the near future would appear to be more than probable.

SALICIN—Is unchanged at 15s. 6d. per lb. down to 15s. for cwt. lots.

SANTONIN—Is firm at late advance, 22s. 9d. being price for 2 cwt. lots in one delivery.

TARTARIC ACID.—English on the spot, 1s. 1½d. Foreign, 1s. 1¼d.

CREAM OF TARTAR.—First white crystals on spot, 87s.; powder, 89s.; 98 per cent. foreign powder, 91s.

CITRIC ACID—1s. 1d.

The Drug Sales.

At Thursday's Auctions new goods, and these only in small quantities, were offered. Very little business was done, and there were few features worthy of special note. Buchu Leaves were in good supply, which made prices a trifle lower. Rio Ipecac. did not sell. Only Canton Rhubarb was offered, which, although of good quality, did not appear to interest buyers. Annatto Seeds were dearer and Gum Elemi cheaper.

SENNA.—52 bales Tinnevelly were offered, and sold at 1¾d. for very small and spotty to 2½d. for medium spotty leaf. Pods sold at 1¼d. for dark. Alexandrian small leaf held for 4d. per lb. and siftings 2d. per lb.

CARDAMOMS.—No demand except for decorticated, which sold at 1s. 1d. per lb. for good dark.

WAX.—Jamaica sold at from £7 17s. 6d. to £8 5s. per cwt.

BUCHU LEAVES—Were easier at 10d. per lb. for green, but only yellow and stalky sold at 9½d. per lb.

RHUBARB.—11 cases medium round Canton, three parts pinky, 1 part grey to dark fracture, were bought in at 1s. 8d. per lb. 2 cases of small to bold flat high dried sold at 8d. per lb. 2 cases medium round Canton, part stalky, half pinky fracture, fetched 11d. per lb. 1 case medium flat Canton, half pinky fracture, sold at 9½d. per lb., and 1 round and flat at 9d. 2 cases medium flat Canton sold at 1s. per lb. 1s. 2d. was accepted for 8 cases of new round, three parts good colour, one part grey and dark Canton. 10 cases wormy, medium to bold flat, high dried, half pinky fracture, sold at from 5¼d. to 5¾d. per lb.

SARSAPARILLA.—11 bales of good bright Lima, partly chumpy, fetched 1s. per lb.

ALOES.—A bid of 18s. 6d. was refused for good bright glassy Capey Curaçoa. 8 boxes of good bright Capey Curaçoa were sold without reserve at 15s. per cwt. 24 of dull livery, part drossy, sold without reserve at 14s. Socotrine in kegs could be bought for 70s. per cwt.

CINNAMON OIL.—4 cases were offered and bought in at 1s. 3d. per oz.

ANNATTO SEED.—21 bags fair bright were sold at from 2¾d. to 3¼d. per lb.

TONQUIN MUSK.—1 caddy was offered and bought in at 67s. 6d. per oz.

PEPPERMINT OIL.—25 cases H.G.H. sold without reserve at 12s. per lb., and 1 tin rectified sold without reserve at 7s.

BALSAM COPAIBA.—A bid of 1s. 3d. was refused for 3 cases of mixed (from fair thick pale to dark thin). These were bought in at 1s. 5d. per lb.

BALSAM TOLU.—4 cases of soft and part drossy bought in at 1s. 1d. per lb.

TURMERIC.—35 bags good bulbs sold at 8s. per cwt.

GUM AMMONIACUM.—1 case loose tears very slightly blocky sold at 60s. per cwt.

GUM BENJAMIN.—10 cases fair Sumatra seconds slightly brown at sides were bought in at £6 per cwt., and 10 cases of thirds at 95s.

DRAGONS' BLOOD.—A case of good bright reboiled lump, few pieces dark, sold at £9 5s. per cwt., and 2 cases of dull, little bright, lump at £7.

CINCHONA BARK.—3 bales Calisaya fetched 1s. 5d. per lb.

WITCH HAZEL.—3 barrels (without spirit) were bought in at 1s. 9d. per gallon.

ERGOT OF RYE.—3 barrels fair Spanish sold at 1s. 1d. per lb.

GUM ELEMI.—Good white, fine flavour, fetched 50s. per cwt.

ARAROBA.—15 cases were offered and bought in at 1s. 6d. per lb.

IPECACUANHA.—7 bales fair plump well annulated Rio were bought in at 6s. per lb.; cultivated Rio, 23 bales bought in at 5s. 9d., and 5s. 3d. was refused for 30 bales fine plump selected Johore.

MENTHOL.—8 cases Kobayashi were offered, but did not sell.

ANGOSTURA TONQUIN BEANS.—Unsorted were offered "without reserve," and fetched 1s. 1d. to 1s. 2d. per lb.

QUINCE SEED.—4 bags very fair, 1s. per lb.

CINCHONA BARK.—At Tuesday's auction the supplies were again very small and unimportant. The total of all kinds amounted to only 715 packages, being 56 packages less than at the previous sale. Some idea of the comparative smallness of the sale may be judged from the fact that at the corresponding auctions of a year ago 1,960 packages were offered. A large proportion was sold at an average unit of 1¼d., being barely steady, the sale in June last realising 1⅜d., and the corresponding sale last year 1¼d. The last Dutch sale was on a parity of 1⅛d. East Indian: 519 bales were offered, and about 400 sold. Succirubra stem chips, ordinary at 2½d., branch at 2d., root at 2⅝d. to 3½d., renewed stem chips and shavings at 3⅛d. to 3⅝d.; Officinalis stem chips and shavings, ordinary to good at 2¾d. to 5½d., renewed ditto ditto at 2¼d. to 6d., broken quill at 5⅛d., branch at 2d., root at 4¼d. to 6d. Ceylon: 146 bags offered and 60 sold. Succirubra broken quill and chips at 3⅛d. to 3½d. Java: 50 bales offered and all sold, Ledger branch at 5⅝d., hybrid ditto at 4¼d.

GINGER.—At Wednesday's auction 533 packages Cochin were offered and 120 bags sold; washed rough bright medium and small and a little shrivelled fetched from 33s. to 33s. 6d. There was but a small supply of Jamaica; and the demand was still less a few barrels; middling to good middling sold at 48s. to 52s.

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

Liability to Medicine Stamp Duty.

I am directed by the Board of Inland Revenue to notify to you that they have consented to extend the time for the sale unstamped of preparations bearing a descriptive title, such as "cough mixture," until December 31 next, provided that such medicines are rendered liable to duty only by the new ruling resulting from the recent decision in the case of Ransom *v.* Sanguinetti.

H. Bartlett, Assistant Secretary.

Inland Revenue, Somerset House, London, W.C.,
July 8, 1903.

The recent altered ruling of the Revenue as to the liability to stamp duty of medicines bearing simple designations of ailments practically means a revolution in the trade in pennyworths. In regard to the ordinary "put-up" proprietaries, my own opinion is that they can well bear the stamp, as the size of bottle, value of formula, etc., can be regulated so as to cover the cost of stamp. Opinions may differ as to whether the alteration conduces to the advantage of chemists; but we have to take things as they are, and as the privileges allowed us do not apply to drug stores or other unqualified persons, it is my opinion that we may compel the matter to our advantage. My present concern, however, is not with this aspect of the question. My object, with your permission, is to suggest that the opportunity should be utilised to bring into line the remedies sold in small quantities throughout the country. In the B.P. we have a standard for what I may call the "simple" medicines, tinctures, infusions, etc. I think that in the same way an attempt might be made to compile a standard book of formulæ of compound remedies under "ailment" designations, to be sold retail in two- and three-pennyworths. Such formulæ might be made by chemists themselves, but would also be kept by wholesale houses, and could be purchased in the ordinary way like other galenicals.

I am quite aware that there are, scattered through the trade journals and in various books, formulæ which may be referred to on labels, but there is no uniformity in practice. Books published privately by the proprietors of trade journals, however good and useful in their way, do not quite meet the case, as they are only used by chemists in a sporadic way. What is wanted is a kind of unofficial, or rather semi-official, pharmacopœia of counter remedies, recognised by the Revenue as "known and approved" remedies, and adopted generally by chemists. At present a man in a certain town may be in the habit of purchasing in small quantities a remedy in which he has acquired confidence; on removal to another town he will be dismayed to find that he cannot buy the same remedy without the cost of carriage and of larger quantities than he can afford. I suggest that a committee be formed under the auspices either of the Pharmaceutical Society or Conference. Let them devise, draw up, and agree upon a simple set of formulæ for minor ailments, to be embodied in a handy book for the counter. This might be called the "Chemists' Counter Formulary," and which might be referred to on labels as "C.C.F." If such formulæ were comprehensive, suitable, and reliable, the public would quickly acquire the habit of asking in every town in the country for "C.C.F." remedies, in which case chemists generally would find it to their interests to stock the whole range of these remedies. The issue of such a book would not, of course, preclude or debar anyone so inclined from selling (I mean, of course, in two- or three-pennyworths, and free of stamp duty) any remedy prepared from any other recognised formula, but it would enable the general public to purchase in any part of the country the remedies, for any ailment, prepared according to "C.C.F." This would surely be an advantage in point of uniformity.

There seems to be a great fear that the change will entail the destruction of vast quantities of labels. I do not think that this will be necessary. I have for many years had a slip label, "Prepared in strict accordance with the British Pharmacopœia," and we can easily have a few thousands printed, giving either the formula of a remedy or a reference to the source of it. Some of your correspondents seem to be in a shrieking state about the matter and ready to demand the head of the Revenue Department on a charger without having thoroughly digested the alteration. As for the proposal to abolish the stamp licence and duty, I say, may God forbid, as in that case our last state would be worse than the first; the whole thing would be thrown open to all and sundry, and almost every other shop would be more or less of a drug shop. At present there are only two things that stand between the chemist and absolute free trade in drugs and chemicals. The first is the Poisons Schedule of the Pharmacy Act, the second is the Medicine Stamp Acts, which accords certain privileges to apprenticed chemists, and which deters people by the mystery existing in their minds on all matters of Revenue and Stamp Duty. Of these two things I think that the latter is the more valuable asset to the chemist. In regard to the small shop difficulty, I have not much sympathy with this class of trade, and it does not concern the retail pharmacist, but it may be met by putting the things up in large packages, stamped *ad valorem*, from which they may be sold, as in the case of Pritchard's, Fenning's, and other preparations.

Oldham, June 26, 1903. James Lees.

While unable to refuse compliance with your request for an expression of opinion on the new ruling of the Commissioners of Inland Revenue on the liability to medicine stamp duty, I am far from sanguine that it will have any effect. On one point I am quite clear: there is no necessary connection between the two recent legal decisions and the changed attitude of the Commissioners. The sequence can only be explained by the hypothesis of a permanent hostile feeling entertained by Government Departments towards chemists in general. A succession of varied experiences points to the conclusion that the refusal of chemists as a body to "die out" on the establishment of the stores has bred a temper akin to that in which the wolf in the fable regarded the lamb. Otherwise, why should the supposed advantage for the chemists gained by Mr. Glyn-Jones be necessarily followed by the wanton infliction of anxiety and injury on all our craft? The interests of the Revenue do not call for any such action. It is obviously absurd and impossible that an increased yield of the tax will result from a chemist being compelled to affix a 1½d. stamp to a penny box of liver pills. What will assuredly happen will be the destruction of a part of the chemist's stock of labels, and a general feeling of harassing uncertainty as to the actual state of the law. Continual changes of front will reduce the English vendor of medicine to a state of subservience to Government officialism as complete as that of the vendor of tobacco in France. To show that no really new conditions have arisen, I refer to Mr. Alpe's well-known manual on medicine stamp duty, which clearly sets out the exemption of such medicines as ammoniated tincture of quinine "if prepared by a chymist or druggist who hath served a regular apprenticeship" (page 12). That the exemption has not been more fully and frequently claimed has arisen from a reluctance to trench upon the province of the medical profession, although the editors of innumerable newspapers and magazines have not been so scrupulous. The points of the Sanguinetti case are so plainly shown by Mr. Alpe at page 83 that one wonders how any misconception could have arisen. On one part—and that a very important part—of the question, Mr. Alpe is self-contradictory—"The name of an organ of the body is understood to recommend the medicament for the ailments by which that organ is affected—*e.g.*, liver pills. But tonic remedies are not considered chargeable because they improve the health" (see page 78). But this is precisely what a liver pill or antibilious pill, in the vast majority of cases, does. It is ridiculous to suppose that everybody who takes such a pill is suffering from any disease. Further on (see page 89) we are told that "liver pills," being merely a description of the medicine by the name of the complaint or organ for which it is to be used, would not be liable to duty. The truth is that, to arrive at a workable understanding, it should be clearly recognised that such a name as liver pill merely fulfils the primary purpose of language by conveying to the hearer the idea which is in the mind of the speaker. Of the six grounds of liability to charge set forth by Mr. Alpe, the issue is narrowed down to the one point of "recommendation." And we ought to use our strenuous and united exertions to have the limits of what constitutes recommendation clearly and durably defined. How is this to be done? one may ask. Possibly we may do worse than take a hint from the advice of the favoured Irish farmer to his English brother agriculturist, "I don't be always voting the same way as they do." But unless chemists show greater unity in combination and energy in action than they have hitherto done it is a waste of time to draw the moral.

Dover, July 7, 1903. J. F. Brown.

Without the slightest disrespect towards Mr. Glyn-Jones or others whose praises have been sounded in your pages for the good they intended, and are supposed to have done, in obtaining the decisions of the courts of law as to the nomenclature by which medicines and curative agents may or may not be defined without being rendered subject to the Medical Stamp Act duty, it seems to me that by their action the flood-gates of difficulty have been opened, and are now threatening to carry us down an abyss in a torrent of "confusion worse confounded." Under existing circumstances, according to the Board of Inland Revenue, how we are to conduct our businesses with any degree of certainty and satisfaction, I know not. A pennyworth of antibilious pills, liver pills, and a thousand other simple everyday requirements for which nine-tenths of our fraternity are constantly asked, can no longer be supplied without the attachment of a medicine duty stamp, involving the accompanying increase of cost. Our label drawers will have to be thoroughly overhauled, and supplemented by a patent medicine stamp drawer, and our customers mulcted of an everlasting three-halfpenny duty, whilst the Inland Revenue income will be augmented indefinitely. Such decision on the part of the Board of Inland Revenue is absolutely too ridiculous to be countenanced, and, if attempted to be enforced, must of necessity lead to incessant litigation and annoyance, not only to ourselves, but to the general public, whose wants must be expressed in the ordinary phraseology and terms which for ages have been adopted, and the demands for which must be supplied accordingly. That the Pharmaceutical Council can allow the present chaotic state of matters to continue (based as it is upon a hitherto practically obsolete Act of Parliament), or that they can rest satisfied by delegating their duty to the Editor of the *Pharmaceutical Journal* and others to address to the Board of Inland Revenue queries whether this, that, or another article can be labelled as heretofore without being rendered liable to the stamp duty, expecting us, in silent obedience, to bow to such replies as may be given, is, to my mind, beyond possibility. The trade —(*profession*, I beg pardon!)—will, beyond doubt, look to them to take speedy action to obtain either the repealing of such antiquated nonsensical Acts, or such amendments thereto as may be needed in order to cover legitimate stamp duties, and, at the same time, to leave the ordinary supply of medicines unencumbered with such restrictions as are now being thrown upon us.

Tunbridge Wells, July 1, 1903. Edwin B. Vizer.

As a chemist of forty-three years' experience of the profession, I would respectfully submit to your notice my opinion on the subject in question. I have carefully watched and read the various opinions expressed, and legal decisions reported as affecting our position, and trust that the Pharmaceutical Council will advise all registered chemists to loyally support the Board of Inland Revenue in the full and vigorous enforcement of the recent interpretation of the Stamp Act. Surely members of the Pharmaceutical Society are never so blind to their own interests or so disloyal to their craft as to plead for a repeal of the Act, or to ask for the privileges of exemption to be granted to drug companies, hucksters, and small shopkeepers.

Abingdon, July 6, 1903. Richard Lacey, M.P.S.

I am firmly convinced that the new interpretation of the Act must ultimately prove of enormous advantage to the chemist. True, at first there will be many difficulties in respect of labels and so forth, but this will be more than counterbalanced by increased returns. Speaking locally, more drugs, pills, etc., are sold by grocers and other small shopkeepers collectively than by any one chemist; every small shop dabbles in penny lines. Doubtless it will be said that the "1d." trade is of no use to the chemist; I presume that no one sells a penny box of pills because he likes it, but, having to compete with the small dealers, hitherto he has been compelled to do so. But with these out of court, what is to prevent a minimum size or price of 3d? The fact that the unqualified will be compelled to use a 1½d. stamp will not give him a chance probably on sixpennyworth, or a tax of 25 per cent. on the returns. I am presuming that chemists generally will adopt the alternative of using a published formula, and, although this may sound rank heresy to the older generation, still it is as things should be, and ought to tend towards our further removal from quackery. In conclusion, I think that any attempt to have the medicine stamp duties abolished would be fatal to our interests; our efforts should be all in the other direction.

Wath-upon-Dearne, July 6, 1903. J. P. Norwood.

The only way I can see out of the present difficulty in regard to the medicine stamp question is, when the Pharmaceutical Society interview the Somerset House authorities, to induce them to allow a commission or committee composed of representatives of the craft to confer upon the whole subject, in order to set at rest the great anxiety it must cause to those fortunate or unfortunate enough to be in business on their own account. It cannot be expected for Somerset House officials to thoroughly understand the different classes of the chemists' business carried on without they are well informed by those who do know, and it makes them appear inquisitorial and antagonistic, whereas they only do the duties which devolve upon them, and do not want to prosecute for the sake of doing so. This is evident by the great willingness they always show in giving information and answering correspondence, so that if they could be induced to appoint a mixed commission and for the present cease to prosecute until the deliberations of such commission are finished, I think great benefits would result. Although not in business myself, but only a dispenser in a military hospital, yet, being a member of the Pharmaceutical Society, whatever concerns chemists is of considerable interest, and I think it behoves all of us to make whatever suggestion or effort we can, however feeble or without originality such suggestions may be.

London, July 3, 1903. C. H. Fentiman.

£2 or £3 for a chemist's licence and only 7s. 6d. for a dog's! Is not this unjustifiable ambition? After our past treatment, why are we to aspire to so much glory all at once?

Grimsby, July 4, 1903. Cor. Willson.

With regard to the new interpretation of the Stamp Duty Act, I have read a great number of suggestions for overcoming the difficulties, but it seems to me that the very simplest of all methods has been overlooked by your correspondents. I refer more particularly to the "penny" trade, and yet my plan seems to cover all circumstances. Why should the Inland Revenue authorities not issue a cheaper system of stamps, *e.g.*, a "penny" stamp for articles up to "eightpence" value, a "halfpenny" stamp for articles up to "fourpence" value, and, if need be, a "farthing" stamp up to "twopence" value. I, for one, would be very pleased to see the "penny" trade cease, because I consider that almost any person could afford "threepence" for a box of pills without inconvenience. By this means a very great amount of trouble and petty trade to the chemist would be missed. If the authorities have not sufficient power to issue the cheaper stamps it would not appear to be a very difficult matter to obtain it.

Blackburn, July 3, 1903. Charles A. Critchley.

Brother chemists beware! Keep quiet! Wait and see what comes. In the meantime fall in with the decisions of the Inland Revenue without being in a hurry or incurring much expense. Word your labels, when possible, so as to keep the sale of the article, pennyworths or otherwise, in the hands only of chemists. Read your trade journals and you will be able to alter your labels aright. If not, send them to the London Chemists' Association and ask their help. Do not send them to Somerset House if you can help it. He who does not read his trade journals deserves to fall into a hole. The late decisions of the law and of Somerset House may be regarded as so many steps upwards towards placing the sale of medicines in the hands only of chemists. Do not agitate to alter the Medicine Stamp Duties Act, unless it be to ask that the licence be 25s. instead of 5s. per annum. And if this could be granted only to chemists so much the better. Do not condemn this letter too rashly, study the various questions first. I speak from over fifty years' experience.

London, E.C., July 6, 1903. Geo. P. Pond.

The proposal that the Board of Inland Revenue be asked to receive a deputation from the Council of the Pharmaceutical Society on the subject of designation of medicines should meet with general approval. Whilst recognising the benefit of the decision in the case of Farmer *v.* Glyn-Jones, which should be taken full advantage of, the decision in the case of Ransom *v.* Sanguinetti will cause chemists who do a trade in pennyworths considerable trouble and expense in reprinting labels, and it is impracticable in many cases to print the formula on the label. Cannot the Act be worked to its full benefit to the chemist somewhat as follows:—A committee of chemists to be formed, representative of the retail trade, this committee to publish a book containing suitable formulæ for general use, or they could be published in the *Pharmaceutical Journal*; obtain the consent of the Board to retail any medicine in the list without a stamp (provided the conditions were complied with), and label thus:—"Cough Mixture (*Form.*, *Ph.J.*, vol., etc).; dose, one teaspoonful; name and address"? In the case of pills and powders, which have been prepared and sold in pennyworths from old recipes, the difficulty may be met by putting up, say, 2s. 9d. and 4s. 6d. sizes, stamping, and then breaking the package and retailing small quantities from them. I think it would be a mistake to repeal the Act altogether, and no doubt it would be to the benefit of chemists if the licence was raised to 10s.

Cranbrook, July 7, 1903. A. W. H. (209/22).

In your issue of July 4—and may I now congratulate you on the improvements and the changed aspect of the Journal—you ask for the opinions of chemists on the Medicine Stamp difficulty. If I may put down my views along with the rest, I should like to say most emphatically that I hope the Act will be administered with all the stringency possible. I hope that when the General Purposes Committee meet on Thursday, they will consider the advisability of asking the Inland Revenue authorities to strictly enforce the Act. It will in the end be a boon to those who come under the "chemist's privilege." I hold that if a chemist has a *secret* formula, and prepares it, and puts it up under the name of "cough syrup" or "rheumatic mixture," etc., it is only right and just that it should bear a Revenue stamp. This Act will have a beneficial effect in many ways; it will cause a chemist to stamp many of his preparations, which, owing to the concession of the Board, are not now stamped, and once having the stamp on, he will then recommend them right and left, the result being a greatly increased sale and a business built up with "own proprietaries," which no rival can assail. He will, of course, always charge the duty to the public, and I am quite certain they will pay it. On this point some of your correspondents appear somewhat illogical. I believe some of your correspondents have pointed out that if the big manufacturers protect the prices of their patent medicines and raise the price to the public, the sales will not suffer. This may be true, but some also point out that if they add the 1½d. stamp to their own preparations, and so raise the price, the public will never pay it. If they will pay one, they will pay the other.

Doncaster, July 5, 1903. "Danum" (208/44).

I find on referring to page 11, in the *Pharmaceutical Journal* of July 4, 1903, that Mr. Wootton states that "for the last twenty years the Board of Inland Revenue have stated in the printed instructions to their officers the following:—

> The Board recognise the necessity that exists for giving to a preparation such a name as shall distinguish it from other medicines, and they do not attribute any further meaning to such words as cough mixture, liver pills, lip salve, teething powders, corn paint, etc., etc. . . Labels, etc., so worded, must, however, contain no reference to an ailment if it is desired to avoid liability. The use of names of organs of the body in connection with any medicine is

held to mean and include the diseases to which such organs are subject."

This statement is incorrect, as the Board only inserted the last two sentences in the circular issued in January, 1902. The previous circular under which the Inland Revenue officers were working did not contain the portion referred to at all. The new circular of January, 1902, differed from the old one in two other particulars, which, however, are not important. I mention this so that the trade may be fully aware how much of the present regulations is new, and how much old. This paragraph is important, because for the first time it makes a statement that the mention of organs of the body may render a medicine liable. This is a very far-fetched conclusion, and in my opinion could not be sustained.

Burnley, July 6, 1903. "Accuracy" (209/2).

It has been the custom of the trade of a chemist and druggist for the last 100 years and more to sell antibilious pills, liver pills, cough mixture, cough lozenges, worm cakes, etc., etc., in any quantity, from a pennyworth upwards. Now, on October 1, 1903, it is to be criminal to say what you are selling, and what purpose it is for. You might just as well require a 1½d. stamp to be put on a 1d. bun or on a loaf of digestive bread, or a guarantee on the bun to say how many currants it contains, etc., or on the bread to say the quantities of flour and water. I am very sorry to see 10,000 chemists driven about like frightened sheep by a word from the Inland Revenue Office. We all have labels such as are now in dispute that have been passed by the Board as exempt from patent medicine stamp duty. Let us all unite, and with one voice declare we will not, and cannot, be compelled to alter our conditions of sale. Let every chemist send, on or before July 15, a ½d. postcard to 17, Bloomsbury Square, to influence the Council to insist on the same regulations remaining as always have been. I should think it would require a new Act of Parliament for the Inland Revenue to insist on their new edict. These things should be settled before October 1, as any case taken after, and an adverse decision given by a police court magistrate or J.P., would be taken as a precedent, and cause a lot of trouble.

"Chemist of Forty Years" (208/42).

London, July 6, 1903.

A Dispensing Difficulty.

Truly this is an era of reform. Innovation is in the air; it is illimitable, and amongst all the anomalies of the century the prescribing chemist and the dispensing doctor are singled out; and now efforts are to be made to re-establish the members of each profession in their original stations. Undoubtedly, sir, it would be a boon to us all were it possible for this change to be brought about, and I daresay we should all welcome it heartily. But let us see what it may mean to the chemist, and what view the great bulk of medical men would take of it. "In Continental countries the dividing line is distinctly defined." True! but where in England here will the dividing line begin, and where will it end? Daily we see increasing an antagonism amongst medical men and chemists; an unrestrained reviling of the latter by the former; and in the same ratio a malignant hostility rankling in the minds of the latter against the former; and so, this thing goes on, and will go on till an adequate compromise is arrived at. So that each will be bound by limitations that will not be humiliating to either. This line, then, is the hinge upon which a really amicable settlement revolves. In a discussion by the two fraternities, there should be no chance of misrepresentation; for, whilst there is this unaccountable ignorance, each of the other's range, there will inevitably be disputes and rancour innumerable. So long as the surgeon has a rooted conviction that dispensing can be learned in three minutes, and that no skill is required in the art of pharmacy; and, on the other hand, so long as the chemist imagines that medicine is more or less a mere farce, that medical men have but the vaguest knowledge of diseases; then, sir, I contend there will ever be hostility in the respective camps. Both appear to forget that knowledge can nowadays be obtained outside a university or a college. There are such facilities for intellectual advancement outside the cloister that to emphatically insist that a doctor or a chemist is absolutely ignorant of the other's calling is confessing an ignorance of the progress of modern times. Whilst there are up-to-date books to be had on medicine, the chemist will always endeavour to increase his knowledge of the ailments of mankind, and, after making his own observations on diseases, coupled with his book knowledge, the chemist will always be a match for that stupid person who dubs him "absolutely ignorant of diseases." It is against this systematic and persistent humiliation of the chemist by this "stupid" person, sir, that I revolt. Only a few weeks ago, in Sheffield, a pretentious surgeon-protagonist took the opportunity in an address of airing his opinions of bitterness against an imaginary encroachment by the dispensing chemist (I presume he meant prescribing chemist), and he brought upon himself a torrent of abuse which he justly merited; and I believe there have been other bubbles up and down the country very much of the same type. It has occurred to me that the change would mean the pledging of the chemist's intellectual acquirements. After reading the article in last week's issue, by a *Pharm. Journal* interviewer, I came to this conclusion, viz.:

First:—The chemist would become the tool of the medical man (whether he were an "L.S.A.," triple Edinburgh, or an "M.D." of London, and we all know the disparity between the medical degrees and the ordinary qualifications).

Second:—He would be debarred from putting up his own proprietary articles.

Third:—He would have to put a constraint upon his acquired knowledge, and by so doing he would exhibit himself a veritable puppet before the public, that has at the present time much confidence in his learning and his skill.

Servility must be abhorrent to the modern chemist, and to conduct a pharmacy with one's education in one's pocket will not commend itself to the feeblest member of the calling. Medical men have told themselves that chemists are tradesmen, and blockheads in the bargain; and the Harley Street consultant smilingly told his interviewer that there was nothing degrading in trade. Pabulum of this sort does not commend itself to me, and I shall be very surprised if other chemists permit themselves to be carried away by puerilities of this kind. At a rough computation 70 per cent. of medical men in Great Britain would reject the change, and for no other reason than that it would reduce their incomes. In the West End of London it would be an easy matter, but in the East End it would be different; and if we extend our view to the East End of other cities we shall see more and more how impossible it would be for the poorer surgeons to alter the present state of affairs. Either the chemist or the doctor would have to reduce his fee, and the chances are ten to one that the chemist would be the loser. At present, patients have but one fee to pay, including visit and medicine, whereas under the new arrangement the mass of the people would have to pay two fees, one to the doctor, the other to the chemist. From a pecuniary point of view, the chemist might do well; but what about this great British poor of ours? How will they fare? Expense will be piled upon an already intolerable burden of expense. However, should a change be effected (which I very much doubt), let chemists see to it that they meet medical men on equal ground. Insistence on this point will preserve a dignity merited by their education and their calling; but if, on the contrary, they do not uphold their prestige, then shortly there will be revolt amongst the generation that succeeds to this.

Sheffield, July 6, 1903. BERNARD ELLIS.

A Dispensing Query.

Can any reader of the *P.J.* explain a difficulty in connection with the following prescription?

℞	Liq. glonoin. (1 per cent.)	♏xii.
	Liq. arsenicalis	♏xl.
	Potass. iodid	gr.lxxii.
	Vin. ipecac.,	
	Succ. hyoscy. aa	ʒiiss.
	Aq. chloroform ad	℥vi.
	M.	

This mixture, although frequently dispensed in the same way, often shows free iodine, while at other times it remains perfectly clear.

July 4, 1903. "VOXAL" (91/17).

*** There does not seem to be any reason why iodine should be set free nor why the mixture should not be perfectly clear, even if that were the case. How has "Voxal" proved the liberation of iodine?—[ED., *P.J.*]

Pharmacy in Russia.

Your Russian contributor has given us a very interesting statement anent pharmacy in the Russias, and some of his English recalls to me a linguistic difficulty with his countrymen which occurred no later than last year. I was engaged by the A.V.D. as veterinary surgeon in charge of horses from Russia to the seat of war, and of 100 "stiffs," or *horsemen*, as the official papers describe them, there was not one who could speak my own language. The majority were Russians, with a sprinkling of the many peoples who go to make up the "little nations" of the Balkans. It was my privilege to select assistants from this polyglot lot, and among them I discovered pretty well every profession and trade represented. There were two pharmacists, both Russians, and one understood Italian and the other did not. To get dispensing done by such assistants, my only resource, outside the language of signs, was to speak bad French to the man who spoke Italian, who translated it into Russian, for the benefit of his compatriot. The misunderstandings that arose on that ship would have been exasperating but for the amusement often afforded, and for the fact that no serious consequence ever arose. We could get on all right with the signs for drachms and ounces, but my men expected me to prescribe in metric weights and measures, which I had to transpose from our own old method—not being up in the new system. It is quite wonderful what can be done in the way of signs, and before the horses were landed in South Africa we quite understood one another, and parted with quite a sense of regret at ending a relationship which had been cordial throughout.

London, July 6, 1903. HAROLD LEENEY, M.R.C.V.S.

Mr. Maben and the Preliminary Examination.

With reference to Mr. Boa's letter under this heading in your last issue, I have to say that for the most part he and I are in perfect agreement. I said in my letter that the Chairman "ruled it out of order" to discuss my motion on an amendment for the previous question. Mr. Boa says he did not rule discussion out of order; all he said was, "that as discussion was not permissible, we should now take a vote." Precisely so. I am quite willing to accept Mr. Boa's version, and leave it there. Mr. Boa proceeds to argue on the assumption that I questioned the accuracy of his ruling. I did nothing of the kind. I accepted his ruling. Consequently, on this point also we are agreed. What I said in my letter, and what I repeat, is that stopping discussion on the previous question, particularly after the mover of the amendment has had his full say, is "a method of burking discussion which fortunately is seldom resorted to." I am not imputing animus to anyone, but I maintain that the discussion was burked, for there were gentlemen at the table prepared to speak, and, of course, I had taken notes and wished to reply. Further, had the discussion not been stopped, I have reason to believe that the vote would have gone the other way. Mr. Boa thinks I wish to have a "fling" at someone; and if it pleases him to think so, by all means let him enjoy the delusion. I want to get facts stated, and if in stating these I call a spade a spade, surely there need be no imputation of motives. Having replied to Mr. Boa, will you allow me to introduce new matter, in order that we may, if possible, obtain some expression of opinion from the members of the Society whether or not the Council ought to revert to the former system of conducting the Preliminary Examination? In proposing my motion, I stated that apprentices were not coming into the business, and said that this was largely due to the Preliminary Examination requirements being altogether in excess of what the trade prospects warranted. Since my motion was voted on I have had the pleasure of meeting upwards of one hundred pharmacists in the South of Scotland and the North of England. Almost invariably these gentlemen introduced the subject of the Preliminary Examination, and as a result I am able to state these facts—facts, observe, not opinions or hypothetical generalities. In every case a desire was expressed that the Pharmaceutical Society should revert to the system of holding its own Preliminary Examination. In at least 98 per cent. of cases they believed that the present requirements were much too stringent. Leaving out girls who had been introduced into the business and chemists' own sons, at least 90 per cent. were entirely without junior apprentices, many being without apprentices of any kind, and in very many cases the dearth of apprentices was directly ascribed to the new preliminary requirements. I believe I am correct in saying that in these hundred shops there are not, all told, ten junior apprentices. Ten or fifteen years ago these shops turned out at least twenty-five assistants every year. What will be the condition of things when another fifteen years have gone by? One very cultured pharmacist said to me a few days ago that we were fast approaching a crisis, for the bringing about of which the Society was largely responsible. Many chemists were being compelled to rely on the assistance of girls, because in the country assistants, qualified or unqualified, were not to be had unless at a salary which under present conditions was prohibitive. If the same policy be continued a few years longer, Heaven help pharmacy! May I add, Heaven help the Pharmaceutical Society? I do not exaggerate in the least when I say that views similar to my own are held by the vast majority of pharmacists, but I confess I would like if more of them would say so themselves in your columns. Unless these men in some way make their wishes unmistakably known, it appears to be undoubted that the policy of "drift" will land pharmacy and the Society in a hole.

Glasgow, July 6, 1903. THOS. MABEN.

The somewhat heated letters from Mr. Maben and Mr. Boa in your last two issues indicate the desirability of the leaders of the craft in Scotland being educated in procedure. The Edinburgh Committee has such a propensity to instruct the Council of the Pharmaceutical Society (*vide* Chairman's Address page 874 of last volume) that it is quite a shock to an ordinary English member, who has been wont to admire from a respectable distance, to find that Scottish chairmen of committees are not infallible. In Parliament, as will be seen by a reference to Palgrave's 'Chairman's Handbook,' the proposal of the previous question does not debar members, "during the debate which ensues, from entering fully into the merits or demerits of the motion on which the previous question has been moved." Palgrave goes on to say that, according to the popular method of procedure, a motion on the previous question is treated as an amendment, and takes precedence over all other amendments. A complication is introduced in Parliament by the custom of putting to the vote "That the question be now put" when the intention of the mover of the previous question is the exact opposite. But it is quite definite that, although no discussion is allowed on the positive motion (the closure or "gag"), "that the question be now put," debate is clearly permissible on a motion for postponement *sine die.* Mr. Boa was thus wrong in saying, as he himself admits "that, as discussion was not permissible, we should now take a vote." Some public bodies have a special bye-law on the subject. That of the London County Council runs as follows :—

> That the Consideration of the Question be Postponed.
>
> Any member of the Council may, at the conclusion of any speech, move that the consideration of the question be postponed to any stated period, or *sine die.* . . . The seconder shall not be allowed to speak beyond formally seconding it. Upon such a motion being made the mover of the question under debate may (without prejudice to his ultimate right of reply if the motion be not carried) be heard in reply for five minutes, after which the question shall be put without further debate.

It is difficult to reconcile Mr. Boa's quotation from the 'Chairman and Speaker,' whatever that may be, with Palgrave's authoritative statements. So far as can be gathered from the cumbersome verbosity of the extract, the 'Chairman and Speaker' supports Mr. Boa's contention; but the procedure recommended is certainly unparliamentary. In addition, though there is, or at least should be, no ethical question of fairness involved, it would seem a fair thing that the mover of the original motion should have the opportunity of giving reasons against a proposal to ignore his motion. I must decline to deal with the subtle sophistry by which Mr. Boa has persuaded himself that he did not give a ruling, but said that discussion was not permissible.

London, July 5, 1903. James Walker.

The Jacob Bell and Manchester Scholarships.

At the July meeting of the Council the Vice-President expressed the opinion that the time had come when the conditions of examination for the Jacob Bell Scholarships should be revised. With that opinion few of those who are acquainted with the subject will disagree. The standard of the examinations which have replaced the old Preliminary is now so little below that of the general paper at the "Bell" examination that the original intention—to make the latter considerably more difficult—is not now being achieved. The first point then is that the general paper is not sufficiently difficult. As a result, many candidates obtain very high marks—not infrequently over 90 per cent.—and separation according to merit is proportionately difficult. Another feature which militates against the efficiency of the test is the fact that each year the questions are set on exactly similar lines. The judiciously crammed student—the "*ad hoc*" candidate—has a much better chance under present conditions than the man whose knowledge is more thorough but less specialised. To avoid the possible reproach that my criticism is purely destructive, I will venture on a few respectful suggestions for improvement. In Latin the translation of a passage from the first three books of the "Æneid" might well be replaced by a similar piece of translation entirely "unseen." The obsolete extracts from ancient pharmacopœias should be entirely abolished, modern prescriptions being substituted if thought necessary. In English the parsing, always "parrot-work," should be omitted in favour of at least two questions on English literature and constitutional history respectively. The subjects of the essay are usually ill-chosen. One might well be on some subject of pharmaceutical politics. Great importance should be paid to the manner in which the "English" questions are answered. The arithmetic questions should deal with compound interest, "present worth," and the like, while algebraical questions should also be asked. The syllabus might with advantage indicate the scope of this, as of other parts of the examination. The French or German might remain substantially the same, except that the present rigid adherence to one particular form of question is to be deprecated. Prescriptions in these languages might be given for translation. Some will doubtless advocate a more radical departure from the "old order," but, in my opinion, the alterations suggested would do much to obviate the disadvantages of the existing system. The questions now set in the second paper are fairly satisfactory, but the syllabus should be much expanded so as to indicate the lines of study required. Many candidates waste time in a vain endeavour to commit to memory the details of such processes as those for the alkaloidal determination of certain galenicals. No student should be expected to be thoroughly conversant with processes such as those mentioned. Probably he is not. But there is nothing in the syllabus except the words "the elementary . . . . of pharmacy of the Pharmacopœia" to indicate what the student is to learn. And that phrase cannot be said to be a very clear definition. No two pharmacists would give the same meaning to "elementary chemistry, pharmacy, and botany." The last suggestion I would make is that the botany questions should be omitted altogether, and that correspondingly increased marks should be given for the chemistry and pharmacy. With such modifications the examination should more nearly fulfil its supposed functions. I do not propose to enter here into another important question—whether the Bell scholar should be allowed to pass his Minor before going through a course at the School of Pharmacy—although that also is a matter which will probably receive the Vice-President's attention.

London, July 8, 1903. "B. B. S." (208/51).

Old Botanists and Their Works.

I read with much interest Mr. F. C. Lascelles' letter on "Some Old Botanists" in your issue of the 27th ultimo, and I ask your permission to supplement it with an account of some old copies of such that are in my possession. One of these is a beautifully preserved vellum bound edition of Dioscorides. It is 12½ inches in length by 8 inches in width, runs to 162 pages, and its type is clear and black as the day it left the printer's hands in May, 1516. The title page is beautifully illuminated in black and white by an oblong illumination 10 inches long by 6 wide. It is ruled by four parallel lines which divide it into unequal portions, both on the sides and top and bottom. At the top we read "Cvm Privilegio ad Qvadriennivm." At the bottom, "Habetur venale in officina Henrici Stephani E regione Scholæ Decretorum." On the left hand side, "Venter Pluma Venvs Lavdem vgienda Seqventi," and on the right, "Expvlsa vt Aivnt Cornice. Adhvc." The centre, which is 7½ inches by 4¾ inches, contains a beautiful design of intertwined flowers, within its upper half winged Cupids, two of which support a shield which is surmounted with two full blown roses. The shield contains three fleur-de-lis, one at the pointed lower extremity, and the other two placed respectively right and left on a higher plane. The superior border of the shield is ornamented with a canopy of clouds, from which projects a hand holding a bound volume. In the lower half winged angels support a shield which is free of marking or device, others of them hold cornucopiæ, and some entwine tendrils. In the centre is a circle, 3½ inches in diameter, in which appears the following:—

"Pedacij Dioscoridis Anazarbei de medicinali materia libri quinqz. De viruleris animalibus, et venenis cane rabioso, et eorum notis, acremedijs libri quattuor. Ioanne Ruellio Suessionensi interprete."

In the upper third of the circle the letters "H. S." appear, one on each side, enclosed in a loop of flowers. In his forewords the translator dates his book from Paris, "Calendis Maii, Anno Domini MDXVI." The first six books are "De Medicinali Materia," and consist of 29, 30, 28, 30, 25, and 6 pages respectively. The seventh book treats "De Venenatis Animalibus et Rabioso Cane," as do the eighth and ninth books, the three books consisting of but eight pages. To these are added a supplement, which the translator marks as "Non videntur esse Dioscoridis." If time or space permitted I should like to give a brief account of the works on medicine of Soranius, Oribasius, Pliny the younger, Apuleius, which were also published by Henry Stephanus, whose colophon was a figure of Eve reaching forth her left hand to catch the forbidden fruit, whilst she holds a large knife in her right hand to cut it off. These appear to have been printed in Basel by Andrew Cratandri, in the month of August, MDXXVIII.

"Cum gratia et privilegio Cæsareo."

Dublin, June 29, 1903. George Foy.

Pharmacy in Natal.

I am pleased to say the *P.J.* always arrives with unfailing regularity. Pharmacy in this out-of-the-way district differs very much from home. Three-fourths of the trade is done with the blacks, and a prescription is seen only once in a "blue moon." The kaffirs are very fond of "Umuti" (medicine), and the native remedies most in vogue are croton oil (Amafuta anamandhla), which means strong fat, jalap, santonine, and a host of others, the English synonyms being tiger fat, hippopotamus fat, monkey fat, hyena excreta (none being in stock, a conical lump of creta ppt. was supplied for 1s., the purchaser going away satisfied). A fortune awaits the individual who can "fake up" a white magnetic lodestone, the "litshe lentombo" of the kaffirs, and which is supposed to possess the peculiar properties of making any dusky beauty they fall in love with reciprocate their affection in tenfold degree. I have frequently been offered a couple of oxen for a small piece of this hypothetical stone. I may mention that they absolutely refuse to have anything to do with the black lodestone. I could mention many other curious remedies and beliefs which the kaffirs have, but space forbids. Customers are not particular as to the amount of garb they don when doing shopping, some of them (men and young girls) coming in a state of almost complete nudity, the little they have on being cast off as soon as they get outside the village.

Richmond, Natal, June 1, 1903. Charles A. Cheyne.

A Request for Seeds.

I require a few ripe seeds of *Stellaria nemorum*, L. If this should meet the eye of a reader living in a neighbourhood where it grows, I shall be most grateful if he will in due season send me about a dozen fully-ripened capsules.

Sheringham, Norfolk, July 8, 1903. W. H. Burrell.

BIRTH.

Wellcome.—On June 26, at 55, Welbeck Street, W., the wife of Henry S. Wellcome, of a son.

MARRIAGES.

Carpenter—Bromley.—On June 30, A. H. Carpenter, chemist and druggist, 177, Baydons Road, S. Wimbledon, to Rose Bromley.

Stuart-Fox—Umney.—On July 4, at St. John the Evangelist's, Penge, S.E., by the Rev. W. H. Stuart-Fox (brother of the bridegroom), assisted by the Rev. W. Smyly, vicar, and the Rev. W. Plant, Maurice Baldwin, youngest son of the late Rev. James Stuart-Fox, of Redland, Bristol, to Beatrice Frances, younger daughter of Charles Umney, of Sydenham and Southwark, London.

DEATHS.

Alder.—On July 6, Thomas Stamp Alder, Chemist and Druggist, Newcastle-on-Tyne. Mr. Alder, who for many years carried on business as an apothecary at New Bridge Street, was for thirty-nine years a member of the Newcastle Board of Guardians.

Chase.—On July 4, at West Norwood, Emma Chase, widow of the late Thomas Chase, Chemist, of Holborn. Aged 80.

Everson.—On July 5, at 30, Costycote Avenue, Herne Hill, Henry Collins Everson, Chemist and Druggist. Aged 60. Mr. Everson, who was a Fellow of the Institute of Chemistry, and one of the founders of the Galen Lodge, had been connected with the firm of Messrs. Hopkin and Williams for very many years, having first become associated with the firm in the early sixties, before the removal of the business from New Cavendish Street, W., to 16, Cross Street, Hatton Garden, E.C. On Messrs. Howards and Sons taking over the business, Mr. Everson became the manager of that branch, a position he retained until his death. Mr. Everson was well-known to every branch of the trade—chemical, photographic, and scientific—and his death will be greatly regretted by his numerous friends.

Foster.—On June 22, at Whitehaven, William Foster, Chemist and Druggist, Liverpool. Aged 47. Mr. Foster had been a member of the Pharmaceutical Society since 1899.

Hicks.—On July 2, Alexander Dorrington Hicks, Chemist and Druggist, Leytonstone. Aged 66. Mr. Hicks had been a member of the Pharmaceutical Society since 1899, and was for many years manager to Messrs. Wm. Fox and Sons, chemists Bethnal Green Road, but retired recently in consequence of failing health.

Higgs.—On July 7, at Richmond Road, Kingston-on-Thames, Ann Florence, the beloved wife of Alfred Higgs, J.P., President of the Thames Valley District Chemists' Association.

Lockyer.—On July 5, William Walter Lockyer, Chemist and Druggist, Deptford. Aged 49. Mr. Lockyer, who was a partner in the firm of Lockyer Brothers, died of acute peritonitis after three days' illness only.

Morton.—On June 20, Henry Morton, Pharmaceutical Chemist, Ramsgate. Aged 83. Mr. Morton had been a member of the Pharmaceutical Society since 1845, and for a great many years was the Local Secretary for Ramsgate. He was also a loyal supporter of the Benevolent Fund, his name appearing each year in the list of subscribers to the Fund.

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Chrome Green (G. W. H.—91/13).—It may consist of a hydrated oxide or phosphate of chromium.

F.C.S. (L. S. W.—91/18).—Write to the Secretary of the Chemical Society, Burlington House, London, W.

Antitoxic Serum (W. W.—91/21).—It means that the experiment was performed in the laboratory, in a glass vessel.

The Society's Arms (P. M. W.—91/11).—You will find a complete description in the *P.J.* of October 5, 1901. It is too long to reproduce here.

Green Glass Bottles (G. W. H.—91/14).—Ordinary green glass bottles are intended, the object being to avoid the use of glass containing lead compounds soluble in the liquid.

Plasters (C. J. R. P.—91/22).—The three ingredients are Emp. Oxycroci, Emp. Minii Rub., and Emp. Plumbi. The plasters can be procured from any firm of wholesale druggists.

Asylum Dispenserships (J. J.—91/16).—Vacancies are advertised as they arise, and a selection is made by the Council on the recommendation of a committee which considers the qualifications and testimonials of candidates. There is no special examination.

Notice to Assistant (T. D.—91/10).—The customary notice is one month, unless a longer or shorter notice has been agreed upon at the time of engagement. It is also customary to give a fortnight's holiday annually, but not until the first year's service is completed.

Aniline Marking Ink (F. T. P. W.—91/15).—We are informed that Mr. C. J. G. Bunker, Great Dover Street, London, S.E., supplies an aniline marking ink. A first-class article, though not an aniline ink, is prepared by Messrs. Wm. Hooper and Co., 24, Russell Street, Covent Garden, London.

Headache Powder (R. R.—91/12).—In strict law, not unless he holds a medicine licence. Entire drugs may be sold with a recommendation, without incurring liability to medicine stamp duty, by surgeons, apothecaries, chemists, or persons who are licensed to sell stamped medicines. If an entire drug be sold under the name "Headache Powder," without the name of the drug being stated on the label, the onus of proving that it is not mixed with any other drug or ingredient may be thrown upon the seller.

Colza Oil (W. W.—91/19).—If mineral oil be present it can frequently be detected by the fluorescence it exhibits when a test-tube filled with the oil is held in a vertical position in front of a window and the sides of the tube are looked at from above. But a more satisfactory method is to saponify the vegetable oil with alcoholic potash or soda, free the solution from alcohol, and shake out with ether after diluting with water in a separator. Any mineral oil present will be dissolved by the ether. For details of the process consult Allen's 'Commercial Organic Analysis,' volume 2, part 1.

PUBLICATIONS RECEIVED.

Proceedings of the Fifth and Sixth Annual Meetings of the Pharmaceutical Alumni Association of the State University of Iowa. Pp. 76. Iowa City: Iowa Publishing Co. 1901 and 1902. From the Publishers.

Compendium der Praktischen Toxikologie. By Professor Dr. Rudolf Kobert. Vierte Auflage. Mit 38 Tabellen. Pp. xii. + 206. Price 5 marks. Stuttgart: Verlag von Ferdinand Enke. 1903. From the Publishers.

Beiträge zur Kenntniss der Guajakpräparate. By Walther Frieboes. With Introduction. By Professor Dr. R. Kobert. Pp. 119. Price 4 marks. Stuttgart: Verlag von Ferdinand Enke. 1903. From the Publishers.

Encyclopædia Britannica. Volume XXXIV. Maps. London: The *Times*, Printing House Square, E.C. From the Publishers.

Proceedings of the American Pharmaceutical Association at the Fiftieth Annual Meeting, held at Philadelphia, Pa. September, 1902. Vol. 50. Pp. 1,212. Baltimore: American Pharmaceutical Association. 1902. From the Publishers.

The Photogram. Vol. X., No. 115. Pp. 193-224. Price 3d. Vignetting with Variations. London: Dawbarn and Ward, Ltd., 6, Farringdon Avenue, E.C. July, 1903. From the Publishers.

Calendar for the Week (July 12—18, 1903).

Days of M.	Days of W.	Events of the Week.	Sun Rises	Sun Sets.
12	**S**	**Fifth Sunday after Trinity.**	3.57	8.13
13	M	James Bradley died 1762; born 1692.	3.58	8.12
14	Tu	Midland Pharmaceutical Association.—Excursion to Holt Fleet.	3.59	8.11
		P.A.T.A. and C.D.A., Holborn Viaduct Hotel, E.C., at 2.30 p.m.—Annual Meetings.		
15	W	Newcastle-upon-Tyne and District Chemists' Association and Sunderland Chemists' Association.—Joint Excursion to Alnwick.	4.1	8.10
		P.A.T.A. and C.D.A.—Trip down the Thames from Reading to Windsor.		
16	Th	Sir Joshua Reynolds born 1723; died February 23, 1792.	4.3	8.9
17	F	◖ Last Quarter, 7.24 p.m.	4.4	8.8
		Poor Law Dispensers' Association, Surrey House, Victoria Embankment, W.C., at 8.30 p.m.—General Meeting.		
18	S	Boyle Lectures established, 1691.	4.5	8.7

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Bagley, Black, Bott, Cocker, Craig, Dietzsch, Druce, Dunlop, Ekins, Ferrall, Gates, Green, Guleff, Harrower, Heap, Hewlett, Hicks, Higgs, Hill, Hindle, Howorth, Hudson, Hurst, Jones, Kelf, Leger, Lockyer, Mortimer, Mumbray, Neill, Parkinson, Payne, Pickering, Plant, Pollard, Pretty, Radford, Ransom, Schollar, Shaw, Walsham, Wells, Wilkie, Willax, Wolstenholme.

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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, July 16, 1903.

The President of the Pharmaceutical Society celebrates his golden wedding on Saturday of this week. To him and to his companion of fifty years the Journal sends greetings.

Two Medical Men, practising in towns where doctors do not dispense, give their opinions on the value of local arrangements between chemists and doctors. A chemist urges an inquiry into the "dispensing difficulty."

The Medicine Stamp Act Difficulty was discussed at a special meeting of the General Purposes Committee of the Pharmaceutical Council to-day, and it was decided not to approach the Somerset House authorities on the subject.

Meetings of Chemists have been held in Hartlepool, Exeter, and Liverpool. The chief topic of discussion at each of these centres was the Medicine Stamp problem. The West Ham Association spent a pleasant afternoon in Epping Forest.

The Second Reading of the Pharmacy Bill has again been postponed, and there is less hope than ever of its being considered in the House of Commons during the present Session. The date now fixed, however, is the Saturday before August Bank Holiday.

There is Nothing New Under the Sun, and sixty years ago the intricacies of the Medicine Stamp Acts were discussed in the Journal. It is intended, from time to time, to recall to readers events and opinions which were recorded in these columns in the days of long ago.

Representatives from English and Colonial Universities met at the end of last week. Their object was to establish closer relations between those institutions. The Prime Minister, Mr. James Bryce, and Sir Gilbert Parker, were among the prominent supporters of the scheme.

Other Conferences of the Week include that of the Royal Institute of Public Health, at Liverpool, and that of the Sanitary Institute, at Bradford. The most interesting papers, pharmaceutically, read at the latter concerned "The Bacteriological Standardisation of Disinfectants" and "The Administration of the Sale of Food and Drugs Acts."

The Names of 141 Successful Minor Candidates have this week been inscribed on the Register. In London 326 students presented themselves for the Minor Examination and 95 passed, in Edinburgh 46 out of a total of 143 were successful. The Major results are as follows:—In London, twelve passed and seven failed; in Edinburgh, two passed and two failed.

The Society of Chemical Industry's annual general meeting was held at Bradford on Wednesday, July 15. The customary social functions took place on the afternoon and evening of that day, and the members visited works on the following day. The annual dinner is held to-night. The new President of the Society is Sir William Ramsay. Next year the meeting of the Society will be held in New York.

The Annual Meetings of the P.A.T.A. and the C.D.A. passed off very successfully on Tuesday last. Mr. C. H. Kirby, solicitor, read a paper at the latter meeting dealing with the recent decisions under the Medicine Stamp Duty Acts. He is of opinion that a label bearing the name of an organ of the body (not an ailment) is not necessarily liable to duty. On Wednesday the members of the two associations had a very pleasant run down the Thames from Reading to Windsor.

The Blue Pill Crusade in Surrey continues. A chemist at Oxted, whose pills were found to be deficient in mercury, was able to prove a warranty from the manufacturer, and the case was dismissed. In a similar prosecution at Reigate a fine of one shilling only was imposed, the magistrates holding that there was no blame to be ascribed to the retailers. To prosecute under the Sale of Food and Drugs Acts in Surrey does not seem so profitable to the County Council as setting traps for motorists.

The Chief Features of the Markets in drugs and chemicals concern opium, menthol, and perhaps quinine. Business on the whole has been very dull, and few changes are recorded.

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AN OLD TOPIC REVIVED.

Little time has elapsed since the subject of agricultural poisons was dealt with at length in these columns, but the intrinsic importance of the controversy to chemists and druggists renders unnecessary any apology for now returning to the matter. In the first place, Divisional Secretaries of the Pharmaceutical Society and other pharmacists are to be congratulated on the success which has attended their loyal efforts to follow the advice officially given in April by Mr. Bremridge and repeated in the *Pharmaceutical Journal*, with respect to the organised efforts of the Dobbs fraternity to obtain the support of Chambers of Commerce for their schemes. The methods adopted to secure assent to the resolution drafted by the energetic solicitor to the Traders in Poisonous Compounds Protection Society have already been described, and reports from Chambers in various parts of the country have frequently appeared. The associations that have already been reported as having refused to agree to or to discuss the proposal are the Chambers of Commerce at Plymouth, Torquay, Dewsbury, Huddersfield, Bradford, Liverpool, Tunbridge Wells, and Grimsby, while the Chambers of

Agriculture of Staffordshire, Lincolnshire, and Cheshire, the Lower Ward of Renfrewshire Agricultural Society, and the Hanley Horticultural Fête's Committee have also had the perspicacity to "see through" the suggested resolution and to refuse to take action. News is to hand this week from Mr. John Walker, of Cleckheaton, that the Chambers of Commerce at Birstall and Cleckheaton are to be added to the above list, which, doubtless, might be indefinitely increased if fuller information were to hand. Nothing, for instance, has been heard to indicate that the London Chamber of Commerce ever took the slightest notice of the communication which it certainly received from Mr. Dobbs. The names of the Chambers and other bodies above-mentioned should be sufficient answer to the contention advanced by Mr. Dobbs in a letter appearing in the current issue of *Farm and Home*, to the effect that many public bodies "have, by resolution, supported the request for an alteration of the law."

Mr. Dobbs' letter is drafted in a style which does credit to his astuteness, but it contains a number of statements which call for refutation. The report of the Committee on Poisons was based largely, according to Mr. Dobbs, upon evidence submitted by representative agriculturists. He quotes the names of Crawford, Connell, Bowen-Jones, and Voelcker, and claims that none of these can be described as manufacturers' advocates. Mr. Connell, it may be recalled, was a solicitor instructed by the only association which of its own accord complained of the incidence of the Pharmacy Act, but he could give no specific instance in support of his contention. Mr. Crawford's evidence was valuable testimony in favour of the Pharmacy Act, and showed conclusively that the alleged grievances of traders in poisons are not so extensive as has been suggested. Will Mr. Dobbs say whether Messrs. Lytle, Pettifer, Cannell, Leggett, Whiffen, Major, R. H. Smith, Le Neve Foster, and others can be regarded as manufacturers' or sellers' advocates? Perhaps he would urge, and with no little truth, that those witnesses were as disinterested as Mr. Alexander Cross. Mr. Dobbs writes one really charming sentence, which must be quoted. "The suggestion that certain manufacturers desire to promote the sale of their own particular preparations is absurd, because no one would suppose that, because sheep dips and insecticides may be more easily obtainable in the future than they are at present, people will be inclined to increase their purchases." Much has been heard of the apathy of the British manufacturer, but it would be a very unusual specimen of the class who would not "desire to promote the sale of his own particular preparation." In addition, if no increase in sales should result from an alteration of the law, the sales must be as large as is needful now, and the grievance of the ill-used would-be buyer vanishes into thin air.

Another contention which requires to be combated is that the chemist is no more fitted than anyone else to sell sealed packets containing poisons of which he does not know the nature. Further, that in these circumstances, the chemist cannot do more than supply an antidote of a general character. Precisely: but what is the moral? Surely, that the sale of secret poisonous nostrums of the Ballikinrain ant-destroyer type should be surrounded with every possible restriction, that the deadly nature of an arsenical compound should be stated rather than concealed under a fanciful trade-name, that at any rate somebody, be it pharmacist or physician, should be in a position to give where necessary something more than "an antidote of a general character." Such a reform as that might be said to be in the public interest, but somehow or other the manufacturers who have no desire to increase the sale of their own preparations have not as yet, if one may judge from certain law reports, considered that the disclosure of the nature of the poison in their preparations would be an act befitting a philanthropist. Mr. Dobbs concludes with the statement that the Traders' Society has always been in favour of the sale of poisons being conducted under proper restrictions, an entry being made of each sale, and other precautions taken. The Traders' Society, with the sophistry peculiar to itself and its members, succeeds apparently in reconciling that statement with the approval of the sale to an unknown person of a "secret" arsenical nostrum, in a plain glass bottle without the name and address of the vendor, and without any entry being made of the sale. Verily, the nut is too hard to crack.

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STAMPED MEDICINES.

The paper read by Mr. Cyril Kirby to the Chemists' Defence Association on Tuesday (see page 75) does not advance the position very materially, but is worthy of thoughtful perusal by chemists and druggists. As the solicitor mainly concerned with the Sanguinetti and Glyn-Jones cases, Mr. Kirby is in a particularly good position to speak with authority and knowledge. He emphasises the point that, while the "Influenza Pastilles" case was decided on the wording of one particular label, the decision in Mr. Glyn-Jones' case was given on a broad question of principle. The Sanguinetti judgment does not in the least alter the previous position with regard to labels such as "Liver Pills" or "Throat Lozenges," and Mr. Kirby doubts whether the Inland Revenue's contention that such descriptions involve liability to duty could be sustained. The Board of Inland Revenue has stated that it has now no option but to regard such labels as "Cough Mixture" and "Antibilious Pills" as dutiable. But there does not seem any reason why the previous "concession" should be withdrawn. Doubtless "Cough Mixture" has always been regarded at Somerset House as a dutiable description, but that interpretation of the law was not enforced. On the ground of public convenience—apart from any consideration of the fact that, by an accident of circumstance, the Revenue was forced to abandon its position with regard to known, admitted, and approved remedies—the Board might conceivably continue its old practice unchanged. But, as Mr. Glyn-Jones contends, and as many correspondents have also urged, it is doubtful whether any attempt to interfere with the Board's arrangements would really be in the interests of pharmacists. It is interesting to note, by the way, that Mr. Kirby thinks the penny trade—of which some are compelled, *nolentes volentes*, to think a great deal—may in the present circumstances actually come in its entirety into the hands of the qualified man.

THE PHARMACY BILL.

The consideration on Tuesday night by the House of Commons of a Bill for the amendment of the Licensing Acts in Scotland occupied the whole of the time of the House until midnight. As a result, it was impossible to reach the Pharmacy Acts Amendment Bill, which was on the orders of the day for second reading. A representative of the *Pharmaceutical Journal*, who paid a visit to the lobby of the House, found there a member of the secretarial staff of the Pharmaceutical Society, but otherwise there was nothing to indicate any active interest on the part of pharmacists in the proceedings of the day. It was almost a foregone conclusion that another postponement would be necessary, and the Bill now stands for second reading on Saturday, August 1. The increase in the opposition to the Church Discipline Bill and the Port of London Bill renders it distinctly improbable that any attempt will be made in the short time still available this session to introduce fresh legislation dealing with the sale of poisons.

SELF-DRUGGING.

On the somewhat well-worn text of "Every man his own physician," the *British Medical Journal* bases a homily in which blame is thrown on the cheap and enterprising daily and weekly papers which recommend "cures,'' on the medical men who order the ready-made preparations of the wholesale druggists, and, most of all, on the chemists who supply potent drugs without the authority of a prescription. While the *British Medical Journal* is prepared to admit that there is much to commend the advance of pharmacy in the direction of minimising the nauseous properties of many useful remedies, and considers capsules, tabloids, and cachets to be excellent in their way, "the popular demand for refinement in pharmaceutical methods carries with it a danger of which the public are not sufficiently cognisant." Again, the tendency of modern prescribers to order the combinations of manufacturing chemists is to be regretted and discouraged, but, in the opinion of our medical contemporary, "stronger measures than the force of professional opinion ought to be brought to bear against chemists who supply potent drugs without the authority of a prescription, or without any better warrant than that of obvious illiterate ignorance."

Pharmacists will agree with much of the homily, especially with that portion which reproves the ignorant and lazy prescribing methods of the practitioner whose private pharmacopœia is a hotch-potch of advertised and secret proprietary medicines. As a matter of fact, however, chemists and druggists do not to any extent supply potent drugs without any better warrant that that of obvious illiterate ignorance on the part of the purchaser, and requests by the public for such things as "Strophanthus tabloids" are in almost all cases directly due to the indiscretion of the medical profession in ordering such drugs by word of mouth or by means of a so-called "prescription" written in the vernacular. Capsules and compressed tablets have "arrived," and will undoubtedly, and very deservedly, stay; but if pharmacists could rely on the medical profession taking practical steps to prevent the abuse of such forms of medicaments by the self-doctoring and self-drugging public, they could be trusted, as a matter of personal expediency as well as of general morality, to second so laudable and desirable a course.

The *Medical Press* refers to the "custom of pharmaceutical chemists" in supplying patients for an indefinite time with medicine containing opiates on the strength of a single prescription. The suggestion is made that if it is not found to be sufficient for a medical man to mark his prescription "not to be repeated," a short Act should be passed regulating the sale of poisons from physicians' prescriptions. Further, a general prohibition should be put on the repetition of any prescription containing a hypnotic three months after date. "Why should a pharmaceutical chemist be permitted to go on year after year supplying a confirmed opium-eater with the crude drug or its alkaloids?"

TRADE POLITICS.

The Annual Conference of the Grocers' Federation was held last week at Birmingham. Nothing of direct interest to pharmacists took place, but the subjects discussed might usefully be noted by the officers of local associations of chemists and druggists, some of which have seemed at times rather restricted and limited in a choice of topics for discussion. The following subjects were among those brought before the Conference:—Early Closing Legislation, Betting (resolution passed urging grocers to dismiss any assistant found to be gambling), Profits on Proprietary Articles, Trade Organisation (resolution passed urging local associations to extend the work of organisation by urging the formation of associations in neighbouring towns or by extending their own field of membership), Administration Orders from County Courts (suggestions made for improvements), the Proposed Fiscal Changes, Railway Classification of Goods, Delegates' Railway Fares (the railway companies to be asked to make reductions). Some of the last-mentioned subjects seem to have been entirely neglected by pharmaceutical associations.

THE PAYMENT OF WITNESSES.

The report of the Departmental Committee appointed to inquire into the allowances to prosecutors and witnesses in criminal prosecutions has just been issued. The Committee, in making certain recommendations, repudiates any scale of allowances based merely or mainly on social position; although the Committee does not think that the principle of absolute equality of payment can or ought to be pushed to its logical conclusion. The principle the Committee has adopted is that of preserving from loss the witness of the poorer classes who earns a daily wage, which he loses by attendance in Court, and the aim kept in view by the Committee throughout has been that of making such payments as will secure the efficient administration of justice, without imposing an undue burden on local rates. The Committee is practically unanimous in the opinion that the present allowances to ordinary prosecutors and witnesses are inadequate, and involve a considerable number of witnesses of the poorer classes in serious loss, so much so that the common experience of taxing officers has been that witnesses declare that they will do their utmost to avoid giving evidence in a criminal case again. The Committee thinks it probable that it is only because the same individual is rarely called to give evidence in a prosecution twice in a lifetime that the administration of justice is not seriously injured. The Committee, therefore, makes the following leading recommendations:—

> To members of the legal and medical professions, and of such other professions as the Secretary of State may decide hereafter to include by Order in this scale, when giving professional evidence, there may be allowed:—
>
> For giving evidence in the town or place of residence: one guinea per case, but not more than two guineas for one day.
>
> For giving evidence away from the town or place of residence: one guinea per day in addition to the above.
>
> Travelling expenses are also to be included.
>
> To expert witnesses, such allowance as the Court may think reasonable.
>
> To interpreters, a reasonable sum at the discretion of the Court.
>
> Police-constables and sergeants 4s. for the day and 4s. for the night, and travelling allowance when outside their own area, and higher police officials same scale as ordinary witnesses—namely, 7s. per day and 5s. per night, with travelling allowance.

The amounts mentioned, however, are in each case the maximum allowance, the Committee recommending that the minimum allowance should be 1s., and that this should be the general allowance for adults of the unemployed or partially unemployed classes, and for young children. The Committee also recommends that a witness should, as a general rule, not be paid a day allowance larger than the amount of any wage he may lose by attendance. The Committee defines an expert witness as: "A person to whose notice a case, with which he was previously unacquainted, is brought expressly in order that he may qualify himself by his special knowledge to give evidence of facts ascertainable by him, or evidence of opinion, where such opinion is admissible."

THE COUNCIL AND THE STAMP ACT.

A special meeting of the General Purposes Committee of the Council of the Pharmaceutical Society was held on Thursday, July 16, and, after a prolonged discussion, it was decided that the Council be recommended to adopt the following resolution:—

> That, in the present uncertainty as to the effect of the two recent decisions on cases under the Medicine Stamp Act in the High Court, it is undesirable that the Inland Revenue authorities be approached by this Council on the subject.

The meeting at which the foregoing recommendation was agreed to was attended by all but three of the members of the Council, and we understand that those present were almost unanimous upon the subject.

A GOLDEN WEDDING CELEBRATION.

All the members of the Pharmaceutical Society, throughout the length and breadth of the land, will unite in congratulating the venerated President of the Society on the celebration of his golden wedding. It was on July 18, 1853, that the marriage of Mr. Samuel Ralph Atkins and his life-companion was celebrated, and to-day Mr. and Mrs. Atkins are receiving the hearty congratulations of their numerous friends on their golden wedding-day. The President's colleagues on the Council, of which he has so long been a distinguished member, have presented him on this very interesting occasion with a large one-handled sterling silver-gilt loving-cup, standing about eighteen inches high. The design is a battle-scene, on the hinged cover is a lion rampant, and round the rim is the inscription: "Samuel Ralph Atkins, President of the Pharmaceutical Society, from his Colleagues of the Council and the Registrar. July 18, 1903." The presentation was made by Mr. Carteighe on Thursday afternoon

RADIUM APPLIED TO CANCER.

The "cancer-cures" reported in the daily newspapers have so frequently proved to be mythical that it is difficult to avoid looking with some suspicion on the latest addition to the number. A Reuter telegram from Vienna chronicles the cure, by exposing the parts affected to the rays given out by radium bromide, on a patient suffering from cancer of the palate and lip. The report was communicated to the Vienna Society of Physicians, and it was stated that the tumour had completely disappeared. The well-known treatment of lupus and other skin diseases by radiopathic means gives ground for hope that radium rays may actually become an established curative agent for cancer.

THE SOCIETY'S CALENDAR.

Secretaries of local associations of chemists and druggists are reminded that, if they desire their fixtures for 1904 to be published in the 'Calendar' of the Pharmaceutical Society, particulars should be sent as soon as possible to Mr. Chater, 17, Bloomsbury Square, W.C.

BRITISH PHARMACEUTICAL CONFERENCE.

Intending visitors to the Conference who have not already taken tickets are asked to inform Mr. H. E. Boorne, 49, Woodstock Road, Redland Green, Bristol, of their requirements as soon as possible, as it will facilitate matters if he is able to issue the tickets in advance.

GENERAL MEDICAL COUNCIL.

At a special meeting held on Wednesday, July 15, 1903, Sir William Turner, President, in the chair, it was moved by Sir Victor Horsley, seconded by Dr. Bruce, and carried:—"That the examination in Chemistry, Physics, and Biology of the Examining Board in England is, in the opinion of the General Medical Council, insufficient." A further motion, by Sir V. Horsley, that the Council should represent to the Privy Council that the courses of study and examination imposed by the Royal Colleges of Physicians and Surgeons are not such as to secure the possession of the requisite knowledge and skill, was under consideration when the Council adjourned.

THE ASSAY AND IDENTIFICATION OF POWDERED IPECACUANHA.*

BY A. G. C. PATERSON,

E. Northway Butt Scholar.

Assay by Paul and Cownley's Method—Assay by Bird's Method—Assay by Frerich's Method—Separation of Emetine from Cephaeline by Paul and Cownley's Method—Experiment with the Mixed Alkaloids—Experiment with Emetine alone.

Two varieties of ipecacuanha root, namely Brazilian and Cartagena, differing from one another in certain fairly well-marked characters, have long been known upon the London market, and have been the subject of numerous researches.

Paul and Cownley have shown[1] that the Cartagena root contains the same alkaloids as the Brazilian—viz., emetine, cephaeline, and psychotrine, and to about the same extent, but that the two varieties differ in the relative proportions of the emetine and cephaeline contained in them.

This difference is clearly shown in the following table, which gives the percentage composition of the alkaloid obtained from each variety of root:—

	Brazilian.	Columbian.
Emetine	72·14	40·5
Cephaeline	25·87	56·8
Psychotrine	1·99	2·7
	100·0	100·0

Researches by Dr. Wild have shown that the physiological effects of the two varieties are markedly different, and therefore the drugs are not interchangeable from the therapeutic standpoint.

As a result of these investigations, the Cartagena variety has been excluded from the British Pharmacopœia, and in consequence it has become necessary to ascertain means whereby the two varieties might be distinguished in the powdered condition. That the microscopical examination of the drug cannot altogether satisfactorily accomplish this has already been shown[2], and in a paper published in the *Pharmaceutical Journal*[3] it has also been shown that the determination of the ash is equally insufficient for this purpose. The composition of the ash of the two varieties has not, however, yet been determined, so that the possibility of such an examination throwing some light upon the source of the root must be admitted.

There still remains the difference in the proportion that the cephaeline bears to the emetine, which might be made available for the purpose of recognition.

Paul and Cownley have already published a method by which the alkaloids can be separated from one another and their proportions determined[4].

Their process naturally involves the determination of the total alkaloid present, and as several methods have been recently devised for that purpose it appeared desirable to test them as to their accuracy, ease and suitability for the purpose indicated. The following experiments were accordingly made with that object:—

Assay by Paul and Cownley's Method.

Paul and Cownley's method, which was first tried, is as follows:—The powdered root—about 50 Gm.—is mixed with one-fifth its weight of lime, moistened with water and extracted by percolation with amylic alcohol. From the amylic percolate the mixed alkaloids are extracted by shaking with dilute sulphuric acid, the acid solution is then mixed with ammonia in excess and shaken out with ether, which dissolves both emetine and cephaeline, but leaves a small quantity of a third base for the most part dissolved in the alkaline solution. After separating the ether solution and evaporating off the ether, the residue left is to be titrated with semi-normal hydrochloric acid, noting the measure required for neutralisation and calculating from it approximately the joint amount of emetine and cephaeline.

A good commercial sample of powdered Brazilian root was procured, and all the assays of this variety were conducted on the same sample.

In accordance with the above directions, two assays of the root were made as follows:—10 Gm. of the drug was taken and mixed with 2 Gm. of calcium hydrate (freshly prepared), moistened with water and allowed to stand, packed in a small glass percolator, and percolated with amylic alcohol. The percolate was tested from time to time, to ascertain if alkaloid were still being extracted, by evaporating three to five drops to dryness on a watch-glass, taking up the residue with dilute hydrochloric acid, and adding a drop of Mayer's reagent; when alkaloid could no longer be detected as indicated by the absence of any opalescence, percolation was stopped, 130 C.c. of amylic alcohol being used in the first case to exhaust the drug, and 175 C.c. in the second.

The percolate was then shaken out with 20 C.c. N/10 sulphuric acid, followed by 5 C.c. N/10 acid with 10 C.c. water, and 2 C.c. N/10 acid, with 8 C.c. water; excess of solution of ammonia was then added, and the alkaloid extracted with ether (50 C.c., followed by 20 C.c., 20 C.c., and 10 C.c.). The ethereal solution was then evaporated, but, owing to the great heat required to remove the traces of amylic alcohol in solution, evaporation was stopped before the residue was quite dry. This residue was then taken up with N/10 hydrochloric acid, and the excess titrated with N/10 sodium carbonate. The number of C.c. of N/10 hydrochloric acid neutralised by the alkaloid, multiplied by the factor 0·0244 gives the weight of total alkaloid in grammes. The factor 0·0244 is the amount in grammes of the alkaloids in the proportions found in Brazilian root, which neutralises 1 C.c. of N/10 acid.

The assays yielded 1·703 per cent. and 1·69 per cent. respectively. As these results were lower than was expected the marc of one percolation was then percolated with ether, and as more alkaloid was extracted by this solvent the percolation was continued until the drug was exhausted. The ether was washed with N/10 acid and water, the acid solution was then made alkaline, and the alkaloid extracted with ether. The ether was evaporated to dryness and the residue weighed. The weight of the residue corresponded to 0·975 per cent., which, added to 1·69 per cent., yielded from amylic alcohol, gives a total of 2·66 per cent.

By Paul and Cownley's method I therefore failed in two assays to extract the whole of the alkaloid. Probably this is due to a difference in my manipulation as compared with Paul and Cownley's, but the fact remains. It is also quite possible that under certain conditions the amylic alcohol may possess less penetrative power than under others, but I did not consider it desirable at this point to test the method further. It seemed to me that a menstruum containing ether was much to be preferred, as it extracted alkaloid after amylic alcohol had ceased to do so.

Assay by Bird's Method.

The next method tried was Bird's, which is as follows:—

Powdered ipecacuanha	10 Gm.	
Sodium bicarbonate	2 Gm.	
Water	5 C.c. Mix.	
Amylic alcohol	1 volume	as alkaloidal solvent.
Chloroform	1 volume	
Ether	3 volumes	

Add 20 C.c. of the menstruum to the mixed powders, macerate and blow the liquid through the drug by air pressure.

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* Communication from the Pharmacy Research Laboratory of the Pharmaceutical Society.

[1] *Pharmaceutical Journal* [4], **2**, 321.

[2] Greenish, *Pharmaceutical Journal* [3], **25**, 685.

[3] Paterson, *Pharmaceutical Journal* [4], **15**, 337.

[4] *Pharmaceutical Journal* [4], **2**, 321.

Repeat the process with quantities of 10 C.c. of menstruum until the drug is exhausted.

Extract the alkaloids from the percolate by shaking with diluted sulphuric acid, separate and wash three times with water 5 C.c. To the mixed acid solutions add ammonium bicarbonate 0·5 Gm. Shake out the alkaloid four times with ether-chloroform (1 to 6), 20 C.c., 10 C.c., 10 C.c., 10 C.c. Agitate the mixed chloroforms with 30 C.c. of saturated brine solution to remove an inert coloured substance. Wash the brine solution with a few cubic centimetres of chloroform, which is then added to the first portion. Evaporate to dryness and weigh, or titrate, using the equivalent 0·0244. Percolation may be used instead of pressure maceration if time be no object.

Following these directions as closely as possible, an assay was made upon the Brazilian drug. The only variations from the above method were that the drug was first macerated with 30 C.c. of the menstruum instead of 20 C.c., and subsequent quantities of 15 C.c. were used in place of 10 C.c. additions. This increase was doubtless due to the very fine state of division of the powder experimented upon. The drug was exhausted by 150 C.c. of the menstruum. The alkaloid was determined by titration, and was found to amount to 2·464 per cent.

In a similar assay, using the percolation process and replacing the sodium bicarbonate by lime, the alkaloid obtained was 2·45 per cent. Lime was used, as it had been noticed that the addition of sodium bicarbonate to a solution of the alkaloids had the effect of considerably deepening the colour. The brine treatment was omitted, as it was thought that the colouring matter removed was practically nil and the treatment with brine therefore unnecessary. 160 C.c. of the menstruum were used to exhaust the drug by percolation.

In the main Bird's process proved to be very satisfactory, the chief objection being the continual attention necessary when the pressure maceration method was used, the saving in the time occupied by the whole process being considerably discounted by the time spent in shaking and blowing the liquid through.

In place of the ammonium bicarbonate used to liberate the alkaloids from the acid solution, it is suggested that solution of ammonia be used on account of its greater convenience.

Assay by Frerich's Method.

Frerich's method, the third method tried, is as follows:—Agitate 6 Gm. of the powdered root with 60 Gm. of ether and 5 C.c. of ammonia solution (or sodium carbonate solution, 1 in 3) for one hour, then add 10 C.c. of water to make the powder agglomerate. Separate 50 Gm. of the ethereal solution and evaporate to one-half. Shake out with 10 C.c. of N/10 hydrochloric acid and wash twice with 10 C.c. of water. Titrate the excess of acid with N/10 potash solution, or shake the acid solution with ether and ammonia, evaporate the ethereal solution to dryness at 100° C., and weigh or titrate the dried residue.

Several assays by this method were conducted, using both ammonia and sodium carbonate to liberate the alkaloids. In all cases the alkaloids were titrated, the results being:—

With ammonia as liberated alkali.	
Total alkaloid (1)	2·576 per cent.
Total alkaloid (2)	2·586 per cent.
Total alkaloid (3)	2·57 per cent.
With sodium carbonate as alkali.	
Total alkaloid	2·56 per cent.

By comparison it will be noticed that the figures obtained by the aliquot part process are slightly higher than those obtained by total exhaustion, but this is generally the case with any modification of Keller's process. The excess varies from 0·12 to 0·14 per cent. only, and this difference when working with very small quantities of alkaloid may perhaps be introduced by the personal element of the operator. An aliquot part method of assay using Bird's menstruum and sodium carbonate solution gave a result of 2·66 per cent. total alkaloid, by weight. Another similar assay gave a result of 2·6 per cent. by weight. An attempt was made to exhaust the drug by warm percolation with ether in a Soxhlet, but the result was not satisfactory, a considerable proportion of the alkaloid not being extracted. In addition, heat is undesirable, therefore this method was not proceeded with.

Separation of Emetine from Cephaeline by Paul and Cownley's Method.

Before drawing any conclusions as to the relative merits of these processes for the purpose in view, it was necessary to ascertain whether Paul and Cownley's method of separation was adapted to the determination of the relative quantities of emetine and cephaeline present in the drug. Barclay[5] has thrown some doubt upon this point. It was thought, therefore, that a trial of the process should be made, with the object of finding its suitability for separating small amounts of the alkaloids. A trial separation made with a residue obtained in one of the foregoing assays, in which Paul and Cownley's method was followed as closely as possible, gave unsatisfactory results. It became necessary, therefore, to obtain samples of the pure alkaloidal salts and test the process upon them. These were purchased from Merck, and were said to have been prepared by Paul and Cownley's process, which is as follows:—For separating the two bases advantage is taken of the differences between them in regard to solubility in ether and caustic alkalies; the hydrochloric solution is mixed with caustic soda solution in excess, and then shaken with ether; the separated ether solution is acidified and again treated with caustic soda, this operation being repeated until the cephaeline has been sufficiently removed, which can be ascertained by the absence of precipitate on adding ammonic chloride to the alkaline liquor. When the separation has been effected, the ether solution of emetine is evaporated, the residue titrated with semi-normal hydrochloric acid, the quantity required being expressed as emetine. From the alkaline soda liquor cephaeline is precipitated by addition of ammonic chloride and shaken out with ether, the residue left after evaporating the ether solution being titrated to ascertain the quantity.

The salts procured were found to be mixtures of the hydrous and anhydrous hydrochlorides, which necessitated drying them in a water oven till of constant weight and then calculating the actual amount of alkaloid contained in the salt.

1 Gm. of dry emetine hydrochloride ($C_{15}H_{22}NO_2HCl$) contains 0·8717 Gm. of emetine, and 1 Gm. of dry cephaeline hydrochloride 0·8650 Gm. of cephaeline. By multiplying the quantity of dry salt taken for experiment by each of these factors respectively, the quantity of alkaloid present was easily calculated. In the following experiments this has, for the sake of clearness, been done, and the amounts of the alkaloids are given instead of the amounts of the salts taken.

Experiment with the Mixed Alkaloids.

The alkaloids in the proportions found in Brazilian root, namely three parts of emetine to one part of cephaeline, were taken, the weights being 0·240 Gm. of emetine and 0·083 Gm. of cephaeline. The salts were dissolved in water, and excess (2½ C.c.) of normal potash solution added. This solution, after being allowed to stand to dissolve the cephaeline, was treated with three successive quantities of ether of 10 C.c. each.

(1) The ethereal solutions were mixed and excess of normal hydrochloric acid was added. Excess of normal potash solution was added and the solutions separated.

(2) The treatment No. (1) was repeated. On adding the alkaline aqueous solution to the reserved portion from No. (1)

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[5] *Chemist and Druggist*, 62, 349.

a white precipitate, which dissolved on shaking, was formed. It is doubtful whether this precipitate was cephaeline or emetine, as no sufficient reason can be assigned for its appearance. Possibly it is due to the solution of emetine in *strong* potash solution.

(3) This treatment was repeated and the alkaline aqueous liquid tested for cephaeline with excess of ammonic chloride. No precipitate was formed, but on acidifying with hydrochloric acid, a heavy precipitate was formed with Mayer's reagent. The precipitate observed in No. (2) was again formed on mixing the two alkaline liquids, but did not entirely dissolve on shaking.

(4) The ether was then washed with 2 C.c. N/1 potash solution, and the aqueous liquid tested for cephaeline with ammonium chloride. A very faint opalescence was observed, but acidifying and applying Mayer's reagent, a heavy precipitate was again formed. It was obvious that further washing with potash solution would remove alkaloid indefinitely, so this treatment was discontinued. The ethereal solution was evaporated by means of a current of air, and then *in vacuo* over a water-bath. The weight of alkaloid obtained was 0·116 Gm. The amount of emetine placed in the solution was 0·24 Gm. Therefore, about 51 per cent. of the emetine was not recovered as such. To the alkaline aqueous solution excess (0·6 Gm.) of ammonium chloride was added, and the solution then treated with six successive washings of ether, each of 10 C.c. The last portion showed very slight traces of alkaloid, but the mother liquor contained a considerable amount. The ethereal solutions were evaporated to dryness and yielded 0·2 Gm. of alkaloid. The mother liquor was extracted with heavy ether-chloroform (1 to 5), using three quantities of 10 C.c. each. The mixed ether chloroformic solutions were evaporated to dryness, yielding 0·006 Gm. of alkaloid. The results may be summarised as follows:—

	Calculation in Solution.	Recovered.
Emetine	0·240 Gm.	0·116 Gm.
Cephaeline	0·083 Gm.	0·206 Gm.
Total	0·323 Gm.	0·322 Gm.

As will be seen, the result is most unsatisfactory. This perhaps is due to the lack of detail given in the process as published, all quantities, strengths of solutions, etc., being left to the discretion of the operator. One fact, however, has been demonstrated, and that is, that the whole of the alkaloid placed in the solution was recoverable.

Experiment with Emetine Alone.

It was then thought desirable to treat emetine hydrochloride alone by the method of separation to find whether, in the absence of cephaeline, the repeated acidifying, etc., caused loss of alkaloid from its proper place in the separated liquids. 0·1814 Gm. of emetine was treated in substantially the same manner as the mixed alkaloids had been treated. The ethereal solution, which should contain all the alkaloid, was evaporated and yielded 0·165 Gm. of alkaloid, or about 90 per cent. The alkaline liquor was allowed to stand for two days, and was then found to have deposited a white precipitate. This liquid was washed with 15 C.c. of ether, which on testing with Mayer's reagent gave a heavy precipitate. Following the method for separating the alkaloids, excess of ammonium chloride was then added, and the liquid extracted with ether which, together with previous ethereal solution, yielded 0·017 Gm. of alkaloid. The mother liquor still retained traces of alkaloid, which were removed with heavy ether-chloroform, but were of inappreciable weight.

Amount of alkaloid recovered as emetine	0·165 Gm.
Amount of alkaloid recovered as cephaeline	0·017 Gm.
	0·182 Gm.

(*To be concluded.*)

THE RECENT MEDICINE STAMP DUTY DECISIONS.*

BY CYRIL H. KIRBY.

The Origin of the Cases—The Sanguinetti Judgment—Liver Pills—The Glyn-Jones Judgment—Qualified Chemists' Privilege—Maker and Compounder—The C.D.A.'s Position.

I suppose I have been asked to read a short paper on this subject because there has been some misapprehension, and even a suspicion of alarm, in the trade about the effect of the recent judgments in the cases of Ransom *v.* Sanguinetti and Farmer *v.* Glyn-Jones, and the subsequent announcements of the Inland Revenue. I hope to show that alarm can only be due to misapprehension, and that in reality, upon the whole, the trade have obtained a very substantial benefit.

THE ORIGIN OF THE CASES.

In the first place it is, perhaps, desirable, in view of some of the letters which have appeared on the subject, to state the circumstances under which the two cases arose, and to show that they were in origin entirely independent of one another. This can be done by a reference to the principal dates in the cases. In Ransom *v.* Sanguinetti, the influenza pastilles case, the purchase of the pastilles by the Revenue officer, upon which the prosecution was based, was made as far back as December 14, 1901. The Commissioners wrote on January 1, 1902, the usual letter inviting an explanation before taking proceedings, and, after some correspondence on the subject, issued their summons on March 10. On March 24, 1902, the summons was heard at Brentford, and the case dismissed. Within a week from that time the Revenue gave notice of appeal, but as the magistrates refused, except upon condition, to state a case, a mandamus had to be applied for, and the preparation and hearing of the special case were delayed in consequence. Had it not been for this circumstance the appeal in this case would have been decided in the ordinary course during the summer or autumn of 1902. The case of Farmer *v.* Glyn-Jones arose in an entirely different way and at a different time. It was initiated really by Mr. Glyn-Jones and not by the Revenue, for he wrote to the Revenue authorities on March 17, 1902, a letter in which he indicated the proposition which the High Court afterwards confirmed—viz., that the third exemption gave to qualified chemists a privilege not theretofore recognised. At that date, which was the first intimation the Commissioners had of Mr. Glyn-Jones's intention to raise this claim, the summons against Mr. Sanguinetti had already been issued. The purchase of ammoniated tincture of quinine, upon which the prosecution of Mr. Glyn-Jones was based, was not made until April 8, 1902, after the Sanguinetti case had been decided by the magistrates, and the summons against Mr. Glyn-Jones, which was issued on April 29, was not finally decided until its third hearing on June 25, 1902. It is plain, therefore, that, so far from the proceedings in the influenza pastilles case being consequent on Mr. Glyn-Jones's claim to the benefit of the third exemption, the fact is the other way; the proceedings against Mr. Sanguinetti had been begun before the authorities had any knowledge of Mr. Glyn-Jones's idea, and, in fact, before he himself had that idea. The two cases were heard in the High Court on the same day for the reason that the same counsel were engaged in both, and for their convenience.

THE SANGUINETTI JUDGMENT.

Let us now consider shortly the effect of the judgment in Ransom *v.* Sanguinetti. It will be remembered that the label in that case, besides the name and address of the vendor, contained the words, "Pure Gum Pastilles, Influenza. Delightfully soothing to Singers and Public Speakers." The Divisional

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* Read before the Chemists' Defence Association, on Tuesday, July 14, 1903.

Court held that that label made the pastilles liable to duty, as being a holding-out or recommendation of them as beneficial to the "prevention, cure or relief of an ailment affecting the human body." That decision was given by the same Court as decided the Glyn-Jones case, and upon the arguments of the same counsel; but it is impossible for anyone who was present in the Court to consider the value of that judgment so great as that in the Glyn-Jones case. It is, however, impossible to convey accurately in words the reasons for this conclusion, and, of course, it must be admitted that, whatever the value, the authority of the two judgments is the same. The judgment in the Sanguinetti case, however, is not a judgment upon a question of principle, but merely of the construction of that particular label. The Court held that that label amounted to a recommendation, and was, therefore, liable, and probably other Courts whose attention might be called to that judgment would say that it was an authoritative illustration of what was intended by the Legislature to come within the Act, and this is really, I think, the full extent to which the decision goes so far as regards any other labels than that in question there. It will be observed that the label contained a good deal more than the bare name of the article sold. It contained one distinct recommendation in the words "Delightfully soothing," etc., although it was an arguable question whether that recommendation was connected with the name of the article sold. There is, therefore, a good deal of difference between the label adjudicated upon in Ransom *v.* Sanguinetti and a label, for instance, with the words "Cough Mixture" only, and the name and address of the vendor. At present it has not been decided by the High Court, or, so far as I know, by any other Court, that such a label as this latter is liable to duty.

Liver Pills.

Further, it will be observed that Mr. Sanguinetti's label contained the name of an ailment. This materially distinguishes it from such labels as "Liver Pills" and "Throat Lozenges," which, at most, mention only the name of a part of the body upon which the medicine is supposed to have some action. There is nothing, therefore, in the Sanguinetti judgment which alters the previous position with regard to labels of this kind. It may be that they will be held liable to duty, but at present they have not been so held, and at least until they are I see no reason why chemists should pay duty upon them. The practical effect of the Sanguinetti case is undoubtedly to render liable to duty some preparations which previously were within the area of doubt, and upon which the Inland Revenue did not usually choose to enforce payment. This result, however, although at first sight detrimental to the chemist, is, I think, really only a part of a material alteration in the chemist's position, which is in the end of great advantage to him.

The Glyn-Jones Judgment.

A month after the Sanguinetti decision came the judgment in Farmer *v.* Glyn-Jones, which, stated shortly, is that a qualified chemist may sell standard remedies, free from duty, although he recommends them. This judgment, unlike the Sanguinetti one, is not a júdgment upon one particular labal, but is a judgment based upon a principle of a very comprehensive kind. It applies to all medicines known and approved which have never been proprietary, using that word in a wide sense, in their nature. The Revenue have interpreted it for practical purposes as applying to all medicines in the British Pharmacopœia, and the French Codex, and, so far as my information goes, this interpretation is by no means too wide, for it may very probably be found that in practice other medicines besides those in the two Pharmacopœias are within the scope of the third exemption. Certainly, if they are not so now, other medicines will be brought within its scope if the trade take full advantage of their legal rights. It may be, in some cases, a matter of some difficulty to prove the necessary facts, but that difficulty can be overcome with the help of a trade organisation, as it was in the ammoniated tincture of quinine case. Assuming, however, that only the medicines in the Pharmacopœia and the Codex are within the third exemption at the present time, that means that all those medicines can be sold with as flowery and emphatic recommendations as those of the best advertised proprietary article, or, if the chemist prefers it, with a mere statement of the purposes for which they are applicable and the dose of them which should be administered. Such a label as was held liable in Mr. Sanguinetti's case would be, under the Glyn-Jones judgment, exempt from duty if the article sold was one which was not, and had never been, proprietary. The small trade in domestic remedies can be carried on by the chemist just as free from restriction as, and, indeed, more freely than it was before, under the authority of the Glyn-Jones judgment. The difference will be that the chemist must sell non-proprietary medicines in place of proprietary ones in order to be free from duty. I think that after a short time it will be found that this is, in reality, no hardship, but if it is, it is a hardship for which the blame must be laid upon the legislators of George the Third's time, and not upon the administrators of the Acts at the present day. I say that the small trade will really be more free from restriction than heretofore, because in future the chemist will have the advantage of knowing when he sells non-proprietary articles that he is absolutely free from duty, whereas before he never knew but what he might innocently overstep the narrow line which the Revenue authorities considered divided bare descriptions from implied recommendations, or subject himself to the more annoying difficulty of having a claim made against him upon a label which had previously been passed by Somerset House itself as not liable.

Qualified Chemists' Privilege.

When the effect of the Glyn-Jones judgment is further considered, it will be seen that the position of the chemist is further improved. The exemption is, for practical purposes, at any rate, in favour of the qualified chemist only. It also applies to surgeons and apothecaries, but this association may well leave the medical profession to look after their own interests. The exemption does not extend to confectioners or other shopkeepers unskilled in the uses of medicines, and the Revenue maintain, with some reason, that it does not extend to joint stock companies, even though calling themselves chemists. The consequence of this is that while the qualified chemist can sell approved remedies free from duty, even though recommended, whether by name or by additional matter, the confectioner and, apparently, the joint stock company cannot compete with him on equal terms, for they, although within the scope of the Act, are not within the scope of the exemption, and must therefore pay duty if their labels contain a recommendation. It appears to me, looking at the matter from an outside point of view, that here is a means by which the chemist can benefit largely; for instance, if he goes the right way about it, I think that he can get into his own hands the greater part, at least, of what is called the "penny trade." I observe that the Revenue make it a condition of their recognition of non-liability that the formula shall be disclosed or its source indicated on the label. Of course, they are not in a position to enforce this condition in law, because if the medicine *is* "known and approved," and has never been proprietary, it fulfils the terms of the exemption, but if a chemist wants to avoid a claim for duty and the possibility of a summons, he will no doubt prefer to comply with the Revenue's wishes on this point.

Maker and Compounder.

The question has arisen whether it makes any difference to the benefit conferred by the third exemption if the chemist himself compounds the medicine instead of buying it from a wholesale house. In the Farmer *v.* Glyn-Jones case, for tactical reasons solely, the bottle of ammoniated tincture of quinine sold by the respondent to the Revenue officer was purchased from a wholesale house, but, in my opinion, it would have made no legal difference whatever if Mr. Glyn-Jones had compounded it as well as sold it. I know that this opinion is not shared by everyone, at any rate in the trade. I observe also that, in a case decided since the judgment in Farmer *v.* Glyn-Jones, a barrister (for whose opinions I have the utmost respect) is reported to have said something to the effect that the defendants in that case being the compounders of the articles on which they were summoned were not within the exemption, but I have the authority of the barrister in question for saying that he did not intend to lay that down as a general proposition, and even if he had done I should still have maintained that the compounder is within the exemption. It seems to me that the reasoning of the Glyn-Jones judgment applies in exactly the same degree to "makers and compounders" as to "owners, proprietors, original or first vendors." To put it another way, there is no reason for saying that the word "thereof," which in the exemption follows the list of persons dealing with the medicine, is to mean a different article in the case of some of those persons from the article meant by the same word in the case of the other persons in the same phrase. The general principle which was submitted in argument for the respondent that if a medicine is not made liable at the time of its first introduction, it can never become liable, whatever is done with it subsequently, which was expressly affirmed by the judgment of the High Court, seems to me to exclude any distinction between the position of the compounder and the vendor.

The C.D.A.'s Position.

Some comment has been made upon the wisdom of this association in fighting the case of Ransom *v.* Sanguinetti at all. I do not see how their not fighting the case would have gained anything. If the Revenue claim against Mr. Sanguinetti had been paid without proceedings it would merely have been followed by other claims, which would either have been paid or fought. If paid, they would have admitted the Revenue's contention; if fought, the result would have been the same—at any rate, upon similar labels to that in the case actually contested—and, as I have pointed out, it is only labels really similar that are affected by that judgment. Besides, for some time before the Sanguinetti case the Revenue authorities had been gradually increasing the stringency with which they administered the Acts, so that sooner or later the case was bound to be fought. The contest of the appeal is even less open to question, for the position, when it was decided to contest the appeal, was stronger; a definite advantage had been won by the dismissal of the summons in the magistrates' court. The trade would have had good ground for complaint if no effort had been made to maintain that advantage. It is quite true that the advantage was not maintained, but at least it could not have been maintained without fighting, and it is obviously impossible to judge whether any action is right or not merely by the result of it. One other matter should be borne in mind which may be overlooked because the recent decisions do not affect it, *i.e.*, that the other grounds of liability to medicine stamp duty, namely, the claiming of a secret in the formula or an exclusive right thereto, or its being the subject of a patent, remain precisely as before, and that the second exemption, commonly called the "pure drug exemption," is also as effective as it ever was.

VETERINARY NOTES.

BY "CENTAUR."

Over-stocking in Cows.

Readers with agricultural experience would probably all agree that to leave a freshly-calved cow unmilked, yet deprived of her calf, was an act of cruelty; and magistrates have so held. All works on veterinary surgery have given as causes of garget, neglect to milk, or even bad milking, not "stripping" the udder. What, then, is our surprise to learn from Professor Dewar that a recently-calved cow may be deprived of all means of relieving the milk glands without serious consequences? Before the Scottish Metropolitan Veterinary Medical Society he said: "I once practised in a district where calves were very dear. . . At calving times the calves were taken from the heifers, and they were never milked. Their teats were not even drawn, and they were sold in a month or a little over, fat to the butcher. He never knew of mammitis resulting from this method of treatment."

Poisoning Dogs and Cats.

Poor people who cannot afford to employ a veterinary surgeon naturally go to a chemist (it is the habit of people who want something for nothing to seek the nearest pharmacy), and are frequently turned away, as those chemists who do not happen to be "doggy" men themselves fear to administer hydrocyanic acid or other poisons lest they should incur personal injuries. This note is to remind them that there are two termini to the digestive apparatus, and that the introduction of a drachm of acid *per rectum*, by means of a syringe, is very easy, while the owner holds the animal by the head. If chloroform is asked for, and owners are disposed to pay a better fee, the animal need only be put into a box, with a sponge saturated with it. So-called "lethal chambers" consist merely of a box with a partition at one end, and a small lid, through which the chloroform sponge can be introduced, after the subject has been comfortably installed in the other and larger apartment. The length of time occupied in killing small animals with chloroform is its chief objection; the more rapid but necessarily painful death by hydrocyanic acid being generally preferred by the public, there being an ineradicable tradition that there is some sort of poison which has only to touch a dog's nose and it will instantly fall dead.

Elephants as Patients.

Veterinary surgeons have a great variety of patients. Army "vets." are called upon to treat oxen, camels, and elephants, while private practitioners are consulted upon sick canaries, parrots, cavies, rabbits; and for prize-bred cats and dogs, many fees are paid which would make the mouth of the average medico "water." Diagnosis is not the only difficulty among the less familiar species of domesticated animals; administration of medicines to the members of a menagerie, or a truculent elephant, often tax the ingenuity of doctor and attendant, and many are the schemes to get physic taken by animals which are too big to control and too cunning to be tricked. A circus proprietor in Berlin (Busch) has recently lost two elephants from perforation of the bowels, caused by parasites (*Uncinaria papiliatum*), and the remainder of the herd have been put on santonin. The dose has not been stated, but it would necessarily be a very large one, and for tæniæ, if reckoned on the scale employed for dogs, would be enormous; most veterinary surgeons agreeing that two grains of areca to each pound weight of the patient is not too much. How much, therefore, would an elephant, weighing two tons or more, require?

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Action of Bismuth Salts.

G. Fuchs attributes (*Deut. Med. Woch.*) the favourable action of bismuth salts not, as has been stated, to their mechanical action in forming a protective layer, but to the fact that in the stomach they are reduced to the bismuthous state, in which condition they penetrate the granulation tissue of the ulcerated surface in the case of gastric ulcer, and thus form a protection to it. The secretion of mucus occasioned by bismuth is due directly to the specific action of its salts. It follows that the most easily reduced bismuth compounds are the most effective; for this reason the author considers bismuthose to be the best form of the metal for internal administration.—*B.M.J. Epit.*, **1**/1903, 104.

Cæsium Ammonium and Rubidium Ammonium.

H. Moissan has prepared the ammonium compounds of cæsium and rubidium with ammonium, NH_3Cs and NH_3Rb, by the action of gaseous ammonia on the respective metals. The operation is somewhat delicate in the case of cæsium, since that metal takes fire in air, and has to be kept immersed in an inert atmosphere of hydrogen or of carbonic acid gas. Ammonia gas attacks cæsium at ordinary atmospheric pressure at 40° C. On cooling the containing tube with a mixture of acetone and carbonic acid, a blue liquid with a reddish-brown reflection is formed. It is crystallised on cooling, and takes fire on contact with the air. It is very soluble in liquefied ammonia, forming a deep blue oily liquid. If the temperature of this solution be raised, dissociation takes place and small brilliant crystals of metallic cæsium are deposited on the sides of the tube. Rubidium ammonium is more easily obtained than the cæsium compound, since the former metal is more manageable in the air. Action between gaseous ammonia and the metal takes place a few degrees above —75° C., with the formation of an intensely blue solution. It is also extremely soluble in liquefied ammonia, and when dissociated by heat the rubidium is deposited in very brilliant silvery crystals.—*Comp. rend.*, **136**, 1177.

Detection of Quinine by its Fluorescence.

G. Denigès finds that the fluorescence of a solution of quinine sulphate, as made more evident by means of the light of incandescent magnesium, affords a very delicate test for the presence of that base in extreme dilution; two parts per million may be thus detected directly, and even smaller amounts by extracting the solution with immiscible alkaloidal solvents. The method is applicable to the detection of quinine in urine and other animal secretions. In the case of urine, 10 C.c. is rendered alkaline with 10 drops of ammonia and shaken out with 15 C.c. of ether. The ethereal layer is removed, filtered, and again shaken out with 1 C.c. of 5 per cent. sulphuric acid. Then the liquid is observed by the light of an ignited magnesium ribbon held 6 or 8 Cm. from the lower part of the tube. A distinct fluorescence will be observable with 0·0005 Gm. of quinine per litre. Saliva and bile are treated in a similar manner, using more ether and taking care to avoid emulsification. Bile normally yields a fluorescent body to ether, but the fluorescence is confined to the ethereal layer, while with quinine it is the acid aqueous layer which is fluorescent. Ten C.c. of blood is first treated with oxalic or hydrofluoric acid, and then with 10 to 15 C.c. of 5 per cent. sodium metaphosphate solution and 3 to 5 C.c. of 5 per cent. sulphuric acid, with enough water to make 25 C.c. The mixture is agitated, heated for a few moments on the water bath, and filtered. The filtrate is then treated as described above. Milk is treated with 10 C.c. of sodium metaphosphate solution for each 20 C.c. of milk taken and 10 C.c. of water, heated to boiling, acidified with 2 C.c. of 5 per cent. sulphuric acid, and again boiled and filtered. The clear filtrate may then be treated for quinine as described. When conducting these experiments care should be taken to shield the eyes from the vivid magnesium light by means of a suitable glass screen or spectacles.—*Journ. Pharm. Chim.* [6], **17**, 505.

Keeping Battery Zincs Amalgamated.

C. N. Turner describes a method of keeping Leclanché zincs amalgamated, which may prove of value to those who employ such zincs in batteries where acid is used, in which case, of course, they require to be kept well amalgamated, although this is sometimes hardly necessary with sal ammoniac. Cut out from a zinc sheet a disc, about 1½ in. in diameter, and next solder it to the bottom of the zinc rod centrally. The edges are now bent up so as to form a cup; and the whole of the cup and soldered part of the rod painted with Brunswick black. Mercury is placed in the cup, and by the capillary attraction creeps slowly up the surface of the zinc, which is thereby kept uniformly amalgamated. When the zinc requires renewing, the mercury is tipped out and placed in the new cup, and in this way there is absolutely no waste.—*Model Engineer and Electrician*, **8**, 556.

Aid to the Fehling Process for Sugar Determination.

S. A. Vasey describes a simple expedient to make the end of the reduction process in Fehling's method for sugar determination more accurately and easily observable. To the measured quantity of Fehling's solution he adds about two teaspoonfuls of finely precipitated calcium carbonate or barium sulphate. The mixture is then raised to the boiling point, being gently stirred with a glass rod during the whole time. The sugar solution is then run in, and the cuprous oxide is deposited on the subsident chalk slime and barium sulphate, so that the colour of the clarified supernatant liquid can easily be seen. The exact point of transition from a trace of blue colour to a colourless solution can in this way be sharply noted.—*Lancet*, **164**, 1,737.

Coffee Substitutes.

It is difficult to understand why coffee substitutes should be manufactured, except on the ground of the small profit that coffee ordinarily bears; nevertheless, it is necessary for chemists who are also analysts to be awake to the fact that such preparations are offered. Besides the seeds of *Hibiscus esculentus*, recently mentioned in the *Pharmaceutical Journal* [4], **16**, 233, there have recently been used the small seeds of *Spermacoce hispida*, imported from India, which are about the size of plantain seed, but in shape like miniature coffee seed; also roasted malt, which appears to be used as a substitute for coffee in Germany more frequently than in this country. The seeds of *Cassia occidentalis* have long been used for this purpose in France, under the name of negro coffee.

Hydrogen Cyanide in Fodder Plants.

J. C. Brünnich, on behalf of the Queensland Department of Agriculture, has carried out a series of experiments in order to ascertain at what stages and conditions of growth the fodder plants belonging to the sorghum family are most dangerous. Two varieties of sorghum, and also a variety of maize were grown on unmanured and heavily manured plots, and analysed at various stages. The results show that sorghums should never be used as fodder in very young and immature stages of growth.—*Proc. Chem. Soc.*, **19**, 148.

Determination of Aconite.

A. B. Stevens has compared the chemical and physiological methods of determining aconite. He finds that the decomposition products of aconitine obtained by heat are not the same as those formed by natural decomposition, as the former neutralise acid, while the latter do not. The lethal frog dose is not at all suited to standardisation. Squibb's physiological test, though reliable for determining the quality of aconite or its preparations, is not as valuable for standardisation as the chemical assay. The ordinary chemical method of assay is not reliable for the assay of the extract, but gives very satisfactory results when applied to the assay of aconite root or its preparations, provided they have not been subjected to heat.—*Pharm. Archiv.*, **6**, 49.

Assay of Ipecacuanha.

E. Weiss discusses the conditions necessary for the accurate assay of ipecacuanha, and arrives at the conclusion that the determination must be a gravimetric one, and may be restricted to the two alkaloids emetine and cephaeline. A number of processes, amongst which are Paul and Cownley's and one of Bird's, are dismissed by the author as being too complicated, and Keller's is selected as the one upon which a new and simple assay may be based. That other substances besides alkaloids pass into the ether-chloroform assay by Keller's original process is well known. Keller suggested three different means of avoiding the error that might be caused by weighing them as alkaloid. First, he titrated the evaporation-residue of the ether-chloroform solution; secondly, he prefaced the extraction of the alkaloids by a somewhat complicated process of defatting; thirdly, he purified the alkaloid by transferring it to acid and thence back to ether, dried and weighed it. Weiss has now devised the following process:—6 Gm. of finely-powdered ipecacuanha are shaken with 60 Gm. of pure ether for twenty-four hours; the ethereal solution is filtered off and the residue returned to the vessel; 60 Gm. of ether are added and 5 C.c. of ammonia. After frequent shaking for one hour, 10 C.c. of water are added to induce the separation of the root, 40 Gm. are poured off, evaporated to dryness, and weighed. Whilst the results of several assays of the same sample by the author's method agree very closely with one another, the analytical data in support of the new process appear insufficient; the one residue which was titrated as well as weighed shows a distinct discrepancy (gravimetric 2·30 per cent., volumetric 1·95 per cent.), and indicates that the residue weighed was impure. The author states that the ipecacuanha alkaloids are not dissolved by the first treatment with ether, but adduces no evidence to show that this is so.—*Oesterr. Zeits.*, **41**, 621.

A Fat Ferment.

Green and Sigmund have shown that when oily seeds are crushed in water the liquid acquires an acid reaction, and free fatty acids are liberated. Connstein, Hager, and Wartenberg confirm the hypothesis that this action is due to a specific ferment which is only active in an acid medium, the acid combining with the ferment, splitting up all glycerides, and liberating the fatty acids. This process takes place in nature when oily seeds germinate, just as diastase reacts on starch in those containing that substance. It is anticipated that this discovery will have practical value in the commercial preparation of fatty acids. The ferment is derived from the residual press cake, after extracting the oil by pressure. These at present have but little value, except as cattle food. It is stated that the fatty acids obtained by this method are of greater purity than those obtained by means of chemical processes.—*Berichte*, **35**, 3,988.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

EXAMINATIONS IN LONDON.

July, 1903.

MAJOR EXAMINATION.

Candidates examined 19
„ failed 7
„ passed 12

The following candidates were successful:—

Allen, William Herbert; London
Bellamy, Clement J. V.; Stockwell
Eaddie, Walter; Clapham
Heely, Frederick Wm.; Kennington
Hensman, Leonard N.; London
Hodgson, Harold F.; London
Lewis, Llewelyn; Stockwell
Moore, Francis Howard; London
Squires, Seth Steggall; Leicester
Whatmough, Wilfred A.; Dulwich
Williams, Arthur W.; Stockwell
Williams, Gwilym Ivor; Kennington

MINOR EXAMINATION.

Candidates examined 325
„ failed 230
„ passed 95

The following candidates were successful:—

Bedell, Margaret I.; Sandgate
Beeham, Reginald S.; Oundle
Beesley, William; Lancaster
Bickford, John; Exmouth
Binns, John E.; Sowerby Bridge
Caws, Hilda B.; Sea View
Chalmers, Edward; Willesden
Clarke, Arthur S.; Malvern
Corkill, William S.; Ramsey, I.M.
Dale, William A.; Marske
Davies, Charles A.; Mountain Ash
Davies, Frank H.; March
Davies, Thomas H.; Crugybar
Davies, Thomas W.; Caergwrle
Douch, Walter; Southborough
Downing, Thomas A.; Macclesfield
Eaton, Edgar Smith; Swinton
Edwards, Joseph H.; St. Asaph
Ellison, Charles K.; Skipton
Evans, Charles H.; Holborn
Findlay, Robert M.; Kilmarnock
Fortnam, Walter J.; Willenhall
Fouracre, Robert; London
Fowler, William H.; Southborough
Gardam, William J.; Ripon
Gibson, George W.; Douglas
Gilliatt, Alice; Boston
Hall, Edgar; Burnley
Hall, William D.; Morton
Hamlin, Hourston; Dartford
Hebditch, John R.; Selby
Henshaw, John L.; Alsager
Hepworth, Raymond; Barnsley
Hill, Wilfrid; Ashton-in-Makerfield
Hirst, Joseph Luther; Slaithwaite
Hothersall, Robert H.; Gunnersbury
Huck, John R.; Darlington
Inman, George; Manchester
James, Alexander; London
Jones, John Ellis; Penycae
Jones, T. A.; Llandrindod Wells
Keene, Hedley H.; Bournemouth
King, Katherine M.; Richmond, Yks
Lewis, John Rees; Ferndate
Lister, Willie; Bingley
Llewellyn, Algernon D.; Ystrad
Lomax, Leonard; Holmfirth
Macdonald, Charles A.; Elgin
Mansell, Thomas C.; Wandsworth
Maudling, Walter H.; York
Mills, James Q.; Rochdale
Mogg, Ernest H.; Wells, Som.
Morgan, Percy; Ryde
Morley, Cecil J.; Nottingham
Mosley, Wilkinson; Driffield
Newill, Ethel C.; Birmingham
Oliver, John J.; Liverpool
Paine, Charles B.; Newport
Penney, Harry C.; Chichester
Pickles, Walter H.; Liverpool
Pike, Herbert W.; Andover
Privett, John W.; London
Punch, Herbert S.; Sedbergh
Raine, Frank H.; Darwen
Rees, Alcwyn; St. Clears
Richardson, Joseph; Louth
Riddle, William; Bellingham
Salter, Leonard Eli; Worthing
Sawyer, Albert E.; Wrentham
Seymour, Joseph J.; Cambridge
Shepherd, Fredk. W.; Nottingham
Short, Latimer J.; Bristol
Smith, Edgar; Easingwold
Smith, Herbert J.; London
Stancombe, Sydney J.; Plymouth
Storey, Richard; Liverpool
Sweetman, Robert V.; Ludlow
Tunnicliff, George W.; Rugeley
Wade, Alfred; Harlesden
Walker, Frederick G. C.; Kendal
Watkins, Thomas B.; Croydon
Watt, George G.; Hingham
Webb, James T.; Dukinfield
Webster, Digby; Chester
West, Tom E.; Keighley
Whitley, William O.; Rhyl
Wiles, Henry; Grayshott
Willoughby, George E.; Camborne
Wilson, Robert; Liverpool
Wilson, Wm. S.; Stratford-on-Avon
Withers, Arnold B.; Faversham
Wood, Charles E.; Rock Ferry
Wright, Ernest J.; Witney
Wyse, Monckton H.; Southport
Yeoman, Cyril; Hartlepool

EXAMINATIONS IN EDINBURGH.

July, 1903.

MAJOR EXAMINATION.

Candidates examined 4
„ failed 2
„ passed 2

The following candidates were successful:—

Robinson, John L.; North Ormesby
Wade, Margaret C.; Larbert

MINOR EXAMINATION.

Candidates examined	143
" failed	97
" passed	46

The following candidates were successful:—

Aitken, Arthur C.; Edinburgh
Bacon, Joseph W.; Sheffield
Balfour, Andrew C.; Jedburgh
Banner, John F. H.; Sunderland
Boyd, John; Comrie
Bruce, George; Thurso
Donaldson, George; Portknockie
Drewett, Percy C.; Whitby
Duncan, Elizabeth L.; Portobello
Fergusson, James; Edinburgh
Garbutt, Henry; Stockton-on-Tees
Gray, Alex. McKilligan; Portsoy
Hardie, Robert M.; Dundee
Harkness, George B.; Cockermouth
Holliday, Donald; Liverpool
Hollingsworth, Arthur; Newcastle
Hunter, John R.; Edinburgh
Hutcheon, James; Turriff
Jack, Alexander B.; Dingwall, N.B.
Jameson, William; Balerno
Knox, George; Old Meldrum
Lochhead, Gavin W.; Musselburgh
Lunan, Alex. G.; Banchory, N.B.
McVitie, Joseph E.; Maryport
Middleton, Harold P.; Nottingham
Minikin, J. W. S.; Newcastle-on-Tyne
Overton, Llewellyn; Edinburgh
Pirie, Alexander; Keith
Rioch, John; Stonehaven
Robertson, James C.; Edinburgh
Robertson, William; Insch
Rodger, David; West Linton
Sales, Thomas A.; York
Simpson, William; Kirkcaldy
Smith, Francis L.; Wolverhampton
Spoor, Herbert M.; Edinburgh
Stainsby, Frederick; Darlington
Stewart, Ernest A. Glasgow
Storm, James; Nairn
Thompson, Henry M.; Hull
Thomson, Daniel; Glasgow
Thomson, Graham D.; Edinburgh
Turner, George Venables; Consett, Co. Durham
Verrall, Ada; Filmer, Sussex
Waterhouse, Percy; Hull
Yeats, John; Grangemouth

Registration as Apprentices and Students.

Certificates by approved examining bodies were accepted by the Board in London from the undermentioned thirty-one persons desirous of being registered as Apprentices or Students:—

Adams, James E.; Northampton
Bailey, John; Ashton-under-Lyne
Brand, Thomas H.; London
Brown, Matthew; Newmilns
Canham, Thomas A.; Norwich
Clapham, William; Lancaster
Daniel, Joseph A.; Kilburn
Davies, Frank; Oldham
Empringham, Edgar E.; Terrington
Evans, Herbert J.; Haverfordwest
Foss, Sydney E.; Broadway
Giles, Robert S.; Lincoln
Gordon, James G.; Cornhill
Gregory, John L.; Wellington
Harper, Matthew; Loanhead
Key, Vincent J.; Chesterton
Münster, Morten W.; Aberdeen
Murphy, James K.; Ayr
Perfect, Richard; Kennington
Postlethwaite, Herbert; Liverpool
Ransford, Leonard; Clapham
Sim, George; N. Berwick
Skidmore, Bertrand; Nantwich
Stocker, Edgar P.; Exeter
Taylor, Archibald Smith; Glasgow
Taylor, Frederick; Wigan
Thomas, Edward R.; Llandilo
Turner, Arthur G.; London
Weekes, William H.; Okehampton
Williams, Gomer; Swansea
Wilson, Thomas Alexander; Ayr.

PHARMACEUTICAL SOCIETY OF IRELAND.

Examination Results.

Preliminary Examination.—J. F. McAlister, D. F. M. Simpson, D. Gray, Annie E. Flanagan, R. Bryan, C. E. Hill, P. T. Keenan, E. W. Hinds, A. C. J. Austin, D. A. Dolan, W. D. Sproule, passed. Twelve candidates were rejected.

Pharmaceutical Licence Examination.—J. G. Ferrier, R. H. Orr, D. Henderson, O. B. Arkle, F. W. Spinks, S. S. Badger, W. G. Whittaker, G. R. Calvert, W. J. Jones, R. A. Caldwell, passed. Eighteen candidates were rejected.

Pharmaceutical Assistant Examination.—T. E. Yarr, T. Kearney, F. A. Reilly, passed. One candidate was rejected.

Registered Druggist Examination (at Belfast).—J. F. McKee, E. Dwyer, T. Gibson, T. V. L. Watson, passed. Three candidates were rejected.

GLASGOW UNIVERSITY EXTENSION.

The work of erecting the new buildings for the extension of Glasgow University is to be commenced forthwith. Provision will be made for the departments of physiology, materia medica, forensic medicine, and public health in one building, while another will be devoted to the department of natural philosophy. The entire cost, including equipments and fittings, will be between £90,000 and £100,000. The Department of Materia Medica and Therapeutics is entered by a porch and vestibule at the east end of the building. Descending a few steps from the entrance hall is the pharmacy laboratory, 50 ft. by 30 ft. Communicating with it will be the preparation room, 14 ft. by 13 ft., and a large store in communication with the latter. The museum for students and the museum preparation room will be at the end of the corridor. Large chemical and research laboratories and store-rooms will be on the top landing. Westwards is placed another pharmacy laboratory, 50ft. by 27ft.; its position here is more retired and greater quietness is secured for the more advanced students. The departmental museum and library is a large and beautifully-lighted apartment, containing 2,150 superficial feet of floor area. All rooms and laboratories will have direct communication with the corridors.

LIVERPOOL CHEMISTS' ASSOCIATION.

SPECIAL MEETING.

Wednesday, July 15, 1903, Mr. T. F. Abraham in the chair. The meeting had been called to discuss the recent action of the Inland Revenue, in enforcing

Stamp Duty

upon what the Revenue considers should be classed as proprietaries.

After the reading of several letters from members, the discussion was opened by the Chairman and subsequently taken up by Dr. Symes, Messrs. Buck, Smith, Evans, Wellings, Shaw, and MacKinlay.

The following resolutions were passed:—

No. 1 (to be forwarded to the Council of the Pharmaceutical Society), proposed by Mr. A. S. Buck, seconded by Dr. Symes:—

> That this meeting learns with regret of the intention of the Board of Inland Revenue to exercise with greater severity than hitherto an ancient Act of Parliament known as the Medicine Stamp Act, whereby the poor will suffer considerably, the safety of the public will be endangered, the chemists throughout the country will be greatly prejudiced, and the Exchequer will receive but little benefit, and that the Council of the Pharmaceutical Society of Great Britain be requested to take such steps as may be necessary to obtain an alteration of the recent decision of the department.

No. 2 (to be forwarded to the Commissioners of Inland Revenue), proposed by Mr. T. F. Abraham, seconded by Mr. Hocken:—

> That the Liverpool Chemists' Association desires to draw the attention of the Board to the difficulty in which chemists, particularly in poor districts, will be placed in their endeavour to obey the law, and at the same time to satisfy the reasonable requirements of their poorer customers. Under the recent pronouncement the sales of two-pennyworth of cough syrup, cough lozenges, corn paint, diarrhœa mixture, etc., will involve the use of a 1½d. stamp.
>
> Also the sale in small quantities of lozenges which have already paid a duty of 6d. per lb. will involve the payment of a further duty of 1½d. per ounce.
>
> They would suggest that it is probably possible to adjust the duty to the value, and a short schedule of permitted titles of popular remedies should be published.

MIDLAND PHARMACEUTICAL ASSOCIATION.

EXCURSION.

Tuesday, July 14, 1903. The members, to the number of forty-nine, had a very enjoyable trip to Holt Fleet, Worcestershire. The party went by train from Snow Hill to Kidderminster, then by electric car to Stourport, and from Stourport by boat to Holt Fleet, where a cold collation awaited the party. This was partaken of with great relish. Unfortunately the weather turned out wet, and no outdoor games could be proceeded with; so, after a very pleasant and social chat, the party left Holt Fleet in the downpouring rain on their return journey, which was accomplished with comfort, and Birmingham was reached about 10 p.m., when the party dispersed.

SOCIETY OF CHEMICAL INDUSTRY.

ANNUAL GENERAL MEETING.

The Annual General Meeting of this Society was opened at Bradford on Wednesday, July 15, 1903, under the presidency of Mr. Ivan Levinstein.

The subject of Mr. Levinstein's Presidential address was

Recent Legislation and Other Matters Affecting our Trade and Industries.

In dealing with the question of education, Mr. Levinstein stated that too exclusive importance had been attached to superior education as a special factor in industrial progress. He was convinced that in general technical education we were in no way behind America, except, perhaps, in that branch which dealt with the treatment of iron in its numerous phases, and in mining. Again, the special advantage of German education lay in the fact that the student only began to specialise at an age which admitted of a previous thorough and systematic training in general subjects and of a broad cultivation of the mind. With regard to

The Education Act, 1902,

whilst it was generally admitted that the Act would be of value in the improvement of primary education, it was doubtful whether it would, in the immediate future, advance secondary education. To raise secondary education to something like the German standard would be very costly, and, having regard to the large expenditure on primary education under the Act, it is only natural that the Education Committees, constituted as they were, should be very reluctant to incur the additional expenditure needed to make secondary education efficient. What appeared to be urgent, in order to prevent the work of our technical schools and university colleges being kept at a standstill for lack of a sufficient number of boys ready prepared to take the real advantage of their teaching, was the equipment, in all important centres, of first-rate secondary schools of the German "Real Gymnasium" type, staffed with the very best and most able teachers, and with low school fees, in order to give proper chances to able youths of moderate means. The leaving-certificate of such secondary schools ought, as in Germany, to give the right of entrance, without further examination, to our best technical schools and universities. In referring to the proposal to erect a

"London Charlottenburg,"

as set forth in the recent letter of Lord Rosebery, Mr. Levinstein seriously questioned Mr. Haldane's opinion that the erection of five or six "Charlottenburgs" would greatly improve our position, so far as technical education was concerned. A comparison of the number and character of the students at the ninety British educational institutions in which technological subjects were taught with those of the students at the nine technical high schools in Germany showed that our real difficulty was not the want of technical schools, but of properly-prepared students for existing schools. It was probable that of the 3,873 students taking technological courses in this country not more than 10 per cent. could pass the entrance examination of the Charlottenburg school; whilst of 15,442 day students attending in 1902 the nine German technical high schools, 12,422 had passed the very difficult matriculation examination of these secondary schools. If a system of high-class secondary education, accessible to all grades were established, and sufficient inducement were given for the boys to stay long enough at school, then efficient scientific and technical education would follow here, just as it did in Germany.

In discussing the proposed inquiry into our

Fiscal Policy,

Mr. Levinstein stated that to-day we were threatened from almost all parts of the world simultaneously with a great increase of duties on a number of articles which this country produced, and upon the export of which its prosperity largely depended. Although by reason of the most-favoured-nation clause any reduction of duties which might be arranged amongst the fighting tariff countries would also apply to British goods, this would, in many instances, be of little practical value, as the staple articles which we exported to protected countries were not articles which were exported to an appreciable extent by any of them, and would, consequently, not form the subject of negotiations. In these new tariffs the proposed higher duties were excessive for more refined articles and goods, and comparatively moderate for crude articles, so that very shortly we should only be in a position to export, to tariff-ridden countries, raw materials or goods in a partly finished condition, whilst the task of converting these goods into finished products —the really profitable part of manufacturing, and that part which called for the highest skill and technical knowledge—would be left to our foreign competitors. As an illustration of this point, Mr. Levinstein quoted the case of the velveteen, or Manchester velvet, industry. Velveteen was first produced on an industrial scale in Lancashire, and formerly we supplied the markets of the world with this fabric. At the present time, the foreign import duty on finished velveteen was practically prohibitive, but the crude velvet cloth was only subjected to a comparatively low duty, and even this was refunded if, after refining, the finished product was re-exported. The consequence of this protection was that foreign manufacturers now not only supplied their own markets, but sold a considerable and increasing amount to our country and colonies. The decline of the silk, plush, carpet, and other textile industries were further instances of the effect of scientific foreign tariffs. As an answer to the question whether these and other allied trades had declined on account of our alleged inferior technical education or owing to the imposition of high tariffs, Mr. Levinstein pointed out that these trades were established in America and elsewhere by the importation of British spindles and looms, and of British spinners, weavers, dyers, printers, and finishers; and that whilst no doubt some of the machines, etc., had been improved by American makers, this had been with a view to turning out larger quantities rather than to improving the quality. Mr. Levinstein also asked whether the reasons that our merchants could occasionally get certain goods better dyed and finished abroad might not be that foreign producers, wih their lower wages, longer hours, and higher profits secured by tariffs in their home markets, could devote more attention to the handling and finishing of the goods than we could afford? A further instance of

The Effect of Foreign Tariffs

was afforded by the caustic alkali and bleaching powder industry. By means of high tariffs, Germany and America had not only reduced our exports of these articles to comparatively small proportions, but their manufacturers were in a position to dispose of their surplus bleaching powder in this country at a price which was ruinous to our manufacturers. Mr. Levinstein stated that these facts showed that neither superior technical nor commercial education would enable us to scale the walls which foreign nations were building higher and higher for the purpose of preventing us from selling our goods in their markets. In connection with the tariff question, Mr. Levinstein drew attention to the slackness on the part of the Government in making known at the earliest moment contemplated alterations of foreign tariffs. The proposed alterations in the Russian, Austrian, and other tariffs were given in Continental newspapers about the end of January. The earliest information available in this country, so far as chemical and allied trades were concerned, was given in the March number of the *Journal of the Society of Chemical Industry*, but the Board of Trade only issued the Russian tariff in May, and had, in spite of continuous applications, not yet published the Austrian tariff. Mr. Levinstein also reiterated the need of a Ministry of Commerce, and stated that what was required was not merely a redistribution of work among the various Government departments, but a special Department of Commerce, with a Minister of exceptional commercial ability and knowledge.

Conclusion.

In conclusion, he urged that the question whether or not a change in our fiscal policy was desirable should not be really decided by phrases or catchwords, but that the spirit of science, the search for truth, careful inquiry and investigation should prevail, and guide the minds of those who had on their shoulders the very grave responsibility of shaping the future prosperity of this great country.

Annual Report.

The report of the Council shows an increase of membership of 154, the number now standing at 3,948. The steps taken in connection with duty-free alcohol for industrial purposes, and with regard to the International Congress of Applied Chemistry are detailed. In May a section of the Society was formed in Sydney, New South Wales. The Council proposes to ask the members of the Society to authorise the presentation of a petition to the Privy Council for a charter of incorporation. The President for the year ending July, 1904, is Sir William Ramsay, K.C.B., D.Sc., LL.D., F.R.S. Messrs. N. H. Martin and David Howard are among the ordinary members of Council, on which Mr. Thomas Tyrer also sits as a Vice-President.

Next Year's Meeting.

Professor Hart gave a sketch of the programme for the meeting of the Society next year in the United States, and a resolution was passed deciding to accept the invitation to meet next year in New York.

Social Functions.

On Wednesday, after the general meeting, luncheon was taken at the Midland Hotel, and later in the afternoon many of the members attended a garden party given by Mr. W. E. Aykroyd, J.P. In the evening the Mayor of Bradford, Alderman David Wade, held a reception at the Town Hall. A number of excursions to manufacturers' works took place on Thursday, the processes seen including combing, spinning, dyeing, loom making, cotton warp dyeing, sizing and mercerising, piece dyeing and finishing. In addition, individual visits were paid to the Municipal Technical College, the Art Gallery, and the Exhibition of the Sanitary Congress, and a special turn-out of the City Fire Brigade interested many. The annual dinner of the Society was held on Thursday evening at the Midland Hotel.

HARTLEPOOLS AND DISTRICT CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Thursday, July 9, at the Cleveland Hotel, Hartlepool, Alderman Thos. Clarkson in the chair.

Mr. M. Harrison, West Hartlepool, was elected Honorary Solicitor to the Association, votes of thanks being accorded to this gentleman for accepting office; also to Messrs. Merson and Clague for their recent addresses.

Federation.

A discussion afterwards took place on the question of joining the Federated Associations, and, various members having expressed their views, it was proposed by Mr. H. Buckle, seconded by Mr. F. G. Rawson, and carried unanimously, that the Hartlepools and District Chemists' Association become members of the Federation of Local Pharmaceutical Associations.

Medicine Stamps.

A further discussion afterwards took place on the label question, in which most of the members took part, the general opinion being that, when the matter was thoroughly understood and enforced according to the recent decisions, many of the difficulties now being considered would be simplified or removed. During the discussion attention was drawn to the action of the Pharmaceutical Society with respect to sending a deputation to the Board of Inland Revenue, and the following resolution was proposed by Mr. A. Timmins, seconded by Mr. F. G. Rawson, and carried nanimously:—

> That the Association approves of the action of the Pharmaceutical Society in considering the advisability of asking the Board of Inland Revenue to receive a deputation, and urges upon them the necessity of extending the time for using up of present labels to January 1, 1904, or later.

It was further decided that the first annual picnic of the Association should take place on Wednesday, August 19, the place selected being Barnard Castle.

EXETER ASSOCIATION OF CHEMISTS AND DRUGGISTS.

SPECIAL MEETING.

Thursday, July 9, 1903, at Mount Radford, Exeter, Mr. Vinden in the chair.

The P.A.T.A.

Mr. H. W. Gadd reported that those chemists of Exeter who did not belong to the P.A.T.A. had been waited upon, with the satisfactory result that practically all the chemists of the city had now joined that Association.

Mr. H. Wippell Gadd then read a paper on the

Medicine Stamp Acts.

Mr. Gadd briefly outlined the steps which led up to the present difficulty, and the probable effect. He emphasised the fact that competition is now restricted to legitimate pharmacy, other traders being penalised to the extent of at least 1½d on every transaction affected by the Sanguinetti decision. Publishing the formula of many preparations must tend to enhance the dignity of the craft in the eyes of medical men and of the educated public.

Mr. E. Lemmon thought that efforts should be made to endeavour to get the Inland Revenue to modify their demands.

Mr. T. C. Milton agreed. The position taken up at present was an impossible one. There should be a deputation to the Board of Inland Revenue on the subject. His opinion was that they would modify their demands if the whole question was properly placed before them.

Mr. Lemmon said that with a little judicious pushing they ought to be able to satisfy the authorities as to what modifications should be made.

The Chairman said it was very unreasonable to expect the payment of 1½d. for stamp duty on a 1d. box of pills.

Mr. Milton moved:—

> That, in the opinion of this meeting, it is desirable that the Pharmaceutical Society should approach the Inland Revenue authorities with a view to their allowing the working of the Stamp Act to remain as at present; and, failing this, the Board be asked to considerably extend the time limit arranged.

The resolution was carried unanimously.

British Pharmaceutical Conference.

On the motion of Mr. Lemmon, it was resolved that the following be appointed delegates to the forthcoming Pharmaceutical Conference at Bristol:—Messrs. F. Vinden, H. Gadd, H. Wippell Gadd, J. Hinton Lake, P. F. Rowsell, and T. C. Milton. Messrs. Rowsell and H. Wippell Gadd were also appointed delegates to the Federation of Local Associations.

THE SANITARY INSTITUTE.

ANNUAL CONGRESS.

Tuesday to Friday, July 7 to 10, 1903, at Bradford, Lord Stamford, President, presiding.

Several interesting discussions took place on a variety of subjects, concerned for the most part with various questions of

Hygiene and Public Health.

In this section Dr. C. Rideal and Mr. J. F. Ainslie Walker submitted a paper on the "Standardisation of Disinfectants," and a resolution was passed asking the Council to appoint a committee to inquire into the desirability of establishing a standard bacteriological method for determining the efficiency of disinfectants. The authors of the paper stated that many disinfectants on the market were absolutely worthless, and even dangerous, since their use gave rise to a false sense of security. It was a notorious fact that at present there existed no official control over the sale of disinfectants, with the exception of those set forth in the Privy Council Orders of July 27, 1900, and June 5, 1902. It had been frequently suggested that the provisions of the Sale of Food and Drugs Acts should be extended to such articles. In the course of the discussion it was mentioned that the cost of some of the largely-advertised disinfecting preparations worked out to as much as £128 per 1,000 gallons, and that an equally efficient disinfectant could be had for 6½d. per 1,000 gallons.

Much discussion turned on a notification of consumption. It was admitted that the first step towards the compulsory notification of consumption was voluntary notification. "Sewage Disposal" and the Housing of the Working Classes were other questions which were dealt with. A resolution was passed in the sanitary science department in favour of the appointment of a Minister of Public Health, with a seat in the Cabinet, together with a separation and enlargement of the medical department of the Local Government Board into a Health Ministry.

Dr. Moore, of Huddersfield, in a paper on the application of the Food and Drugs Acts, gave instances of magisterial "eccentricities," and said great advantage would result if a tribunal having an improved means of estimating the value of scientific evidence could be provided. Real advantage to the public would result if independent and specially qualified assessors were appointed to assist magistrates, just as nautical assessors were appointed in maritime matters. Under proper conditions, foodstuffs might, with advantage, be mixed with preservatives. By this means articles of a perishable nature could be preserved and an abundant supply maintained, with the result of keeping their cost low. A resolution was unanimously passed to the effect that whenever preservatives are added to food, their presence, nature, and maximum amount should be indicated on a label or otherwise declared.

Mr. A. H. Waddington attended the meeting as the representative of the Pharmaceutical Society.

PROPRIETARY ARTICLES TRADE ASSOCIATION.

ANNUAL MEETING.

Tuesday, July 14, 1903, at the Holborn Viaduct Hotel, at 2.30 p.m., Mr. G. R. Barclay, President, in the chair. There was a representative attendance.

The first business was to receive the seventh

Annual Report and Financial Statement

of the Association.

The President, in moving the adoption of the report (see *ante*, p. 47), congratulated the Association on its continued vigorous existence. In spite of the croaking individuals who, at the start, prophesied that it would not last many months, it had now existed seven years, and was growing larger in numbers and influence year by year. The Association, he believed, had the sympathy of 95 per cent. of the trade; but what the Association required was not so much sympathy as active support. About 30 per cent. of the chemists in business did support the Association, while the other 70 per cent. did nothing to assist in procuring the pecuniary benefits they derived from the Association. He thought that was a state of things which ought not to be; every chemist who benefited by the sale of articles on the P.A.T.A. list ought to subscribe to the Association. With regard to the Wholesale Section things were different. The majority of the more important wholesale houses had now joined the Association, and two notable additions had recently been made to the list—viz., Scott's Emulsion and Fenning's preparations. Some of those present were aware that it was intended to send a deputation from the Association to meet several of the manufacturers of important articles, and he had no doubt that some good would come of it. One thing to be considered was the question of substitution. That was a matter for mutual cooperation. If manufacturers put their articles on the P.A.T.A. list, they expected those articles to be supplied when asked for, and he believed that if chemists were assured of a fair profit they would be the last to wish to substitute. Last year the Association organised a very successful convention at the Inns of Court Hotel, which was suggested by the Glasgow and West of Scotland Chemists' Trade Association. It was well organised and ably carried out, and if a similar meeting was held in the future he believed it would be equally successful. In regard to the future of the Association, he thought that local pharmaceutical associations could do very great service to the P.A.T.A. It was almost impossible for the Executive or the officers to do recruiting work without local help, and if members in various parts of the country would take an active interest in the work of the Association and would work in conjunction with the office, a great deal of good might be done. He believed the day of cutting was drawing to a close, and that up-to-date retailers would not allow articles to be undersold; but in his opinion the only effective way of stopping cutting was by supporting the P.A.T.A. He had great pleasure in moving the adoption of the report.

Mr. Theo. Nicholls seconded the motion.

Mr. Tebbutt (Treasurer), in presenting the financial statement, directed attention to the fact that the statement under review dealt with twelve months as against nine months dealt with in the statement presented at the previous annual meeting. He pointed out that last year there was an adverse balance of £233 18s. 8d., which had now been reduced to £32 3s. 10d. The President had referred to the apathy shown by the retail trade. He thought he was within the mark when he said that there were at present 600 members who had not paid their subscription. If those subscriptions had been paid, instead of an adverse balance of £32 there would have been a balance in hand of about £120. He felt that that fact was a reflection upon the craft. He was sure of one thing—viz., that the work of the Association could not be carried on more economically than it had been.

A lengthy discussion then ensued as to the best means of getting in outstanding subscriptions, and Mr. Glyn-Jones explained that since the balance-sheet was prepared a large number of the 600 referred to by the Treasurer had paid their subscriptions.

Mr. Pentney, who took part in the discussion, referred to the efficiency of the P.A.T.A. in preventing "cutters" from obtaining supplies of P.A.T.A. articles, and he instanced a case in point. A friend of his had expressed the opinion that the P.A.T.A. could not stop him from selling articles on the P.A.T.A. list at "cut" prices. He (Mr. Pentney) offered to pay his friend's subscription to the P.A.T.A. if such was the case, and the friend agreed. In course of time his friend's supply of a certain proprietary food was stopped, thereupon he wrote the following letter:—

> Dear Mr. Pentney,—I thank you for your letter of this morning. Also for proposing me as a member of the P.A.T.A., which Association I shall be pleased to join. I have no objection to you expressing the facts of the case, as you proposed doing, at the next meeting of the P.A.T.A. I have certainly a lot more respect for the Association now than I had previously, although I must say that "it is a very slow poison." As you are aware, this was only a sort of challenge case between ourselves, just to see the virtue and effect of the Association, and not that I was eager to make a habit of underselling P.A.T.A. goods—quite the contrary, I was generally looking round to see what goods were really on the P.A.T.A., because, as I have told you before, until just lately I was, like a good many more chemists, under the great disadvantage of not knowing what goods were protected or not, not having a list to guide me. And I for one should like to see the Association sending an *Anti-Cutting Record* out occasionally to all patent medicine vendors, whether they were members of the P.A.T.A. or not, and then I feel sure that the Association would be still more respected, and more far-reaching in its effect than with some at present. Wishing the P.A.T.A. every encouragement and success—Yours, etc.,

He (Mr. Pentney) thought that was very satisfactory, and he was of opinion that steps should be taken to bring the P.A.T.A. list to the notice of grocers as well as chemists and their assistants, because there was no real protection of prices outside the P.A.T.A.

Mr. Glyn-Jones, referring to Mr. Pentney's remarks, said there was a suggestion under consideration at the present time in regard to the publication of a P.A.T.A. Year-book, giving full particulars concerning the Association and the protected list, with blank pages for additions to the list. If that book were published it would be useful for reference in all shops where proprietary articles were sold. With respect to a suggestion that local secretaries of the Association should seek to work in conjunction with the local pharmaceutical associations, he might say that the Association was in communication with local associations with a view to obtaining a list of persons in the various districts who deal in "patent" medicines.

Mr. Pentney suggested that it would be a good way of bringing the protected list to the notice of dealers in proprietaries if the trade journals outside pharmacy could be induced to publish additions to the list from time to time.

Mr. Pickard (Bradford) and Mr. A. Cooper then spoke of the good work done by the P.A.T.A. during the past year, and

The President said it had been suggested, as a means of overcoming the difficulty of getting in members' subscriptions, that life membership might be created, the subscription being, say, £5 5s.

Mr. McCaig (Messrs. Evans Sons Lescher and Webb) deprecated the attitude adopted by certain members towards those manufacturers who had not yet seen their way to join the P.A.T.A. He thought it should be recognised that they had a right to conduct their business in the way which seemed best to them.

Mr. Glyn-Jones having appealed to members to look after new members and to leave the getting in of subscriptions to the office staff, the motion adopting the annual report and financial statement was put and carried unanimously.

CHEMISTS' DEFENCE ASSOCIATION.

ANNUAL MEETING.

Tuesday, July 14, 1903, at the Holborn Viaduct Hotel, at 4.30 p.m., Mr. Albert Cooper, President, in the chair.

The President moved that the third

Annual Report and Financial Statement

(see *ante*, p. 48) be adopted. He thought it was extremely gratifying that the report showed such excellent progress. Referring to claims for damages sometimes made upon chemists, the President said one of the chief benefits of the Association was that when claims were made they were submitted to the Association, and those which were purely bogus claims were soon settled, very much to the peace of mind of the individual, who might otherwise have been mulcted in heavy damages; while, when the chemist was liable, the Association met the liability, as in a recent case in which the Association had paid a member £500 indemnity. The subscription to the Association was so small that it was really a wonder that the Association did not embrace the whole trade. With reference to the Drug Trade Appeal Fund, they all knew what good work it had done. Since the recent decisions under the Medicine Stamp Acts the C.D.A. had received many hundreds of labels from chemists desirous of knowing whether they could use the labels they had been accustomed to. He thought the best advice that could be given was that chemists should not act too precipitately on the new reading of the Medicine Stamp Duty Acts. In regard to "cough mixture," for instance, the C.D.A. was not prepared to admit that the Sanguinetti case went so far as the Inland Revenue authorities said it did. He then dealt with the question of the subscription to the C.D.A. The present subscription of 10s. 6d. a year was certainly a very small one, and it had been suggested that it would be better to make the subscription £1 1s. But the directors were particularly anxious to give the benefits of the Association to the trade at as low a cost as possible, hoping by that means the Association might eventually embrace the whole trade. The report was extremely satisfactory, and he thought the rather small attendance at that meeting was evidence that the shareholders were satisfied with the working of the Associations. He moved that the report and financial statement be adopted.

Mr. Betty seconded the motion. Before it was put to the meeting, however, he would like to ask whether it was correct, as had been stated, that the Board of Inland Revenue had decided that in future articles bearing a 1½d. stamp must be sold at 1s. instead of 1s. 1½d., as hitherto, and that articles bearing a 3d. stamp must be sold at 2s. 6d. instead of 2s. 9d.

Mr. Glyn-Jones said the only justification for any statement such as that alluded to by Mr. Betty was that the solicitor in a recent prosecution had some doubt as to whether the prices 1s. or 2s. 6d. should not include the stamp. So far as Somerset House was concerned, he did not think there was any likelihood of the old practice being changed. It would facilitate matters, however, if any discussion on the medicine stamp question was postponed till after Mr. Kirby's paper had been read.

Mr. Pentney supported the motion. The C.D.A. had covered itself with glory, and had, in his opinion, achieved more than had been achieved by the Pharmaceutical Society or any other society for many years.

Mr. Knight also supported the motion. In the course of his remarks he had a little "dig" at weak-kneed chemists generally, and what he termed the "Boot coverers" in particular. The attitude of the Pharmaceutical Society towards company pharmacy was criticised, and the opinion was expressed that the Pharmacy Act, 1868, was the beginning of chemists' troubles. He next referred to the "fuss made in the press" concerning the recent decisions, which reminded him of the rhyme beginning "How doth the little *C. and D.*," and he concluded by expressing a hope that the laggards among chemists would rouse themselves.

Mr. Glyn-Jones then dealt with the financial position of the Association, and

Mr. Pentney asked how many times the Association had been called upon to pay £500?

Mr. Glyn-Jones said only once, and he went on to explain the circumstances under which the £500 was paid.

Mr. Bunker thought the report should be read in conjunction with the trade journals. It would then be seen that, whereas formerly chemists were incessantly being brought before the courts on one charge or another, the existence of the C.D.A. now made the authorities more wary in bringing doubtful cases against chemists.

Mr. Pond asked if any steps would be taken to get the report into the hands of chemists generally.

Mr. Glyn-Jones :Yes.

Mr. MacEwan suggested that it might be advisable to alter the title of the Association to the "Chemists' Defence and Insurance Association, Limited."

Several members expressed approval of the suggestion, and

Mr. Kirby said it would only mean the registration of a resolution to that effect.

Mr. Rowsell (Exeter) and Mr. S. N. Pickard (Bradford) having commented on the apathy of those chemists who remain outside the Association,

Mr. Llewellyn asked if the C.D.A. could insure itself against claims for damages.

Mr. Glyn-Jones said he had made inquiries on that point and had ascertained that there was no insurance company which would take the risk for less than the whole of the subscription.

Mr. H. Gadd (Exeter) urged the necessity of a larger subscription than 10s. 6d. He felt that the Association would not be on a sound financial basis unless more money was put into it.

Mr. Rowsell said the matter had received the careful consideration of the directors, and the shareholders might rely upon the directors taking all necessary steps to improve the financial position of the Association.

Mr. Glyn-Jones then made a practical suggestion based upon his experience in connection with the C.D.A. He pointed out the extreme danger chemists incur in supplying confirmed takers of morphine and other drugs, and he suggested that it would greatly tend to minimise that danger if wholesale houses would modify their present system of labelling poisonous drugs. For instance, in the case of morphine and strychnine he believed that in two fatal cases which had recently come under his notice the mistake arose through the bottles being labelled "Strych. Hydrochlor." and "Morph. Hydrochlor.," the lettering being across the label, so that looking at the bottle from one side the word "Hydrochlor." only was noticed, and the assistant, on going to the poison cupboard, seeing the word "Hydrochlor." on a bottle where the morphine bottle should have been, had taken it down and served the customer without reading the whole label, which, had he done so, would have shown him that he had got hold of the strychnine bottle. He suggested, therefore, that the wholesale houses should so print their labels that the word "Strychnine" or "Morphine," as the case might be, extended right across the label, and the word "Hydrochloride" should be printed less prominently.

The report was then adopted

Election of Directors.

On the motion of Mr. Pond, seconded by Mr. James Lees (Oldham), the whole of the retiring directors were re-elected as follows:—Messrs. Cooper, Barnes, Bunker, Pickard, Rowsell, John Smith, Sutherland, and Feaver Clarke.

Election of Auditor.

Mr. Arthur G. West, of 34, Gresham Street, E.C., was elected Auditor, in place of Mr. W. C. Pettigrew, who had resigned.

Votes of Thanks to the Directors.

On the motion of Mr. Colley, seconded by Mr. Knight, a vote of thanks was accorded to the directors and to Mr. Glyn-Jones for their services during the past year.

Mr. Cooper and Mr. Glyn-Jones replied.

Suggested Alteration of Title.

Mr. Pond then proposed a motion to the effect that with a view to increasing the membership of the C.D.A., in the event or otherwise of the directors finding it necessary to increase the annual subscription, they emphasise the insurance character of the Association by a suitable alteration of title.

Mr. Pentney seconded, and it was carried unanimously.

The Medicine Stamp Acts.

Mr. C. H. Kirby, of the firm of Neve, Beck, and Kirby, solicitors to the C.D.A., then read a paper on the recent decisions under the Medicine Stamp Acts, which is printed at page 75.

Following the reading of the paper Mr. Betty, Mr. Pond, Mr. Pickard, and others questioned Mr. Kirby on points about which they were in doubt, and

Mr. Pentney moved that a cordial vote of thanks be accorded to Mr. Kirby for his paper and for the splendid services he had rendered the Association. In the course of his remarks Mr. Pentney likened Mr. Glyn-Jones to Moses, and chemists to the children of Israel, who after being led out of bondage found fault with the manna, *i.e.*, the recent decisions in the High Courts. He thought it possible that chemists would not have that manna long if they persisted in agitating and worrying the Inland Revenue authorities. There was his dearly beloved friend "X-Rayser," that cynic of cynics, who seemed to have got this matter on the brain. Then there was a gentleman named Leo something. It had been said that some insects had their sting in the tail, but he was not aware that lions had a sting in their tails. Yet there was a sting in the tale of Mr. Leo, who had spoken of the decisions as a catastrophe. Then there was Mr. Wootton. He liked Mr. Wootton, particularly since he had joined the Pharmaceutical Council, and he was very pleased to see that some of the councillors were moving—whether they moved in the right direction or not. But, Mr.

Wootton had also got this label business on the brain, and from his remarks at the recent Council meeting one would almost think that Mr. Wootton and "X-Rayser" had been sleeping together. He did not know whether they had, but they seemed to be very unanimous about the matter. He could understand Mr. Wootton's attitude, but "X-Rayser," with all his cynical shrewdness, was wrong. And it was not the first time he had been wrong. It seemed to him (Mr. Pentney) that the recent decisions in the Ransom *v.* Sanguinetti and the Farmer *v.* Glyn-Jones cases would prove to be the greatest blessings chemists had had for a long time.

Mr. JOHN SMITH seconded the vote of thanks, and expressed his agreement with Mr. Pentney's view of the recent decisions.

Mr. GLYN-JONES and Mr. MACEWAN supported the motion which, on being put to the meeting, was carried by acclamation.

Mr. KIRBY acknowledged the vote of thanks, and replied to the questions which had been put. Mr. Betty had asked whether "Influenza Gum Pastilles" would be held liable. There was, of course, a distinction between those words and those employed by Mr. Sanguinetti, inasmuch as he added "delightfully soothing," etc.; but he should say that such a label would be held to be liable. Still, he did not think the authorities should be allowed to extend the Sanguinetti decision to such labels as "cough mixture." With reference to the suggested deputation to Somerset House, he would like to point out that there are three classes of persons interested —viz. (1) qualified chemists, (2) joint-stock companies, and (3) grocers and confectioners who sell drugs without having any knowledge of their uses. It would be a great advantage to the latter two classes to get Somerset House to change their decision, and if the Board of Inland Revenue should be inclined to go to Parliament to get the law altered it would give them the strongest possible support to be able to say, "We have the support not only of the unqualified drug-sellers in this matter, but also of the qualified chemists." With regard to Mr. Pond's question as to the liability of "liver pills," "eye lotion," etc., sold without a recommendation and without stating the ingredients, he thought the Revenue authorities would find it very difficult to get any court to hold them liable. In reference to a question as to whether, under the Medicine Stamp Acts, the "third exemption" would apply to a person who had served a regular apprenticeship to a chemist but had not passed the qualifying examination of the Pharmaceutical Society, Mr. Kirby said it was quite clear that such a person would not be exempt; he must be a registered chemist. With respect to a question by Mr. Pickard as to whether a chemist who made his own preparations could put up a "liable" mixture in a large bottle, duly stamped, and then break bulk and retail in pennyworths or other small quantities, Mr. Kirby thought that, taking the recent interpretation of the law strictly, if the small quantities were put in labelled bottles the large stamp would not cover them. But he pointed out that the Inland Revenue authorities have given no indication that they intend to alter their practice in that respect.

A vote of thanks to Mr. Cooper for presiding terminated the proceedings.

P.A.T.A. AND C.D.A. EXCURSION.

FROM READING TO WINDSOR.

On the Wednesday following the annual meetings of the P.A.T.A. and the C.D.A. the members of those Associations and their friends had a very pleasant excursion down the Thames from Reading to Windsor. The party of about one hundred ladies and gentlemen left Paddington Station *en route* for Reading at 9.35 a.m., and subsequently went aboard a launch, which left Caversham about eleven o'clock, proceeding down stream to Henley, where a stop was made for luncheon. Mr. G. R. Barclay, President of the P.A.T.A., presided at the luncheon table, and was supported by Mrs. Barclay, Mr. Albert Cooper (President of the C.D.A.), Mr. and Mrs. Glyn-Jones, and most of the more prominent members of the two associations, with their wives, daughters, and friends. Unfortunately, space will not permit us to publish a complete list of those who were present. The toast of "The King" was briefly proposed by the CHAIRMAN, who also read telegrams from some absentees, and after luncheon the party rejoined the launch and proceeded through Maidenhead to Windsor, tea and other refreshments being supplied on board. At Windsor the party left the launch, and took train to Paddington, all having thoroughly enjoyed the day's outing, which was favoured with splendid weather. The whole of the arrangements reflected the greatest possible credit upon Mr. Glyn-Jones and his staff, everything passing off without the slightest hitch, except that the party had to travel back to town by a somewhat later train than that originally intended. Apparently, the Secretary of the P.A.T.A. and C.D.A. has influence, which he is not slow to exert, with departed but still active saints, for St. Swithin had fully intended to send rain on July 15, but was persuaded by Messrs. Glyn-Jones, Johnston, and Ffoulkes to hold his hand for twenty-four hours. As a result, the weather was ideal, and, for the second time, Mr. Glyn-Jones's skill as a successful organiser of social events was proved to be equal to that which he displays in other directions.

WEST HAM AND DISTRICT CHEMISTS' ASSOCIATION.

Thursday, July 9, 1903. A party of members of friends numbering between thirty and forty journeyed to the King's Oak, High Beach. As the weather was so fine, some of the members decided to cycle, while the majority went by train to Chingford Station and thence by breaks to the King's Oak. Having sampled the "wares" of the hotel, the party adjourned to the Forest, which at this time of the year is looking at its best, and a photograph was taken of the group. Tea was served at a quarter past six, and after the tables had been cleared the following toasts were submitted, and were all heartily received: —"The King and Queen and Royal Family," the PRESIDENT. (Solo, Mr. F. Titford.) "The Association" (coupled with the name of the President, Mr. Harold Mitchell, was received with musical honours), Mr. FORBES. "The Visitors," proposed by with songs and a duet by Messrs. F. Titford and F. W. Gwinn. "The Hon. Secretary," proposed by Mr. FORBES, was also received with musical honours. The toast-list was interspersed with songs and a duett by Messrs. F. Titford and F. W. Gwinn, a pharmaceutical version of Shakespeare's "Merchant of Venice" by Mr. Hy. Soper, and some particularly smart sleight-of-hand by Mr. Morgan R. Jones. Mrs. F. W. Gwinn presided at the piano. Some of the more frolicsome of the party indulged in a little dancing, and at nine o'clock a start for home was made, the outing being generally voted "a most enjoyable time."

ROYAL INSTITUTE OF PUBLIC HEALTH.

ANNUAL CONGRESS AT LIVERPOOL.

This Congress was opened at Liverpool on July 15, 1903, and a report of the meetings will be published in next week's issue of the *Pharmaceutical Journal*. In addition to the paper by Dr. R. Lord on "The Standardisation of Drugs," Dr. J. C. McWalter read a paper on "Chronic Antimonial Poisoning."

LEGAL INTELLIGENCE.

Sale of Food and Drugs Acts.

Blue Pills.

On Monday, July 13, 1903, before the Godstone magistrates, sitting at Oxted, Sydney Fordham, chemist and druggist, New Oxted, was summoned for that he, on June 2, sold certain blue pills not of the nature, substance, and quality demanded. Mr. Talbot Kyle, county inspector under the Sale of Food and Drugs Acts, prosecuted, and defendant, who pleaded not guilty, was defended by Mr. Kirby (Messrs. Neve, Beck, and Kirby), on behalf of the Chemists' Defence Association.

An assistant to the inspector went into the defendant's shop and asked for a shilling box of blue pills, at the same time inquiring the strength kept. The assistant said the strength kept was 4 gr. and he only had nine-pennyworth in stock. These, fifteen in number, were purchased, and afterwards divided by Mr. Kyle into three packages of five each. The Inspector said he had before purchased pills of defendant, and they had always been right.

Dr. Thomas Stevenson, public analyst for Surrey, said he received a box from Mr. Kyle containing five pills, which together weighed about 33 gr., and were unequal in size and weight. They were coated pills, and upon analysis the pill matter varied rather more than the coating. The pill he took, one of average size, weighed just over 6½ gr., and contained 0·93 of a grain of mercury; the percentage of mercury in the pill mass was 20·8 instead of 33·3 as ordered in the blue pill of the B.P., a deficiency of 12·5 per cent. He admitted, in cross-examination, that it was legitimate to add an excipient to the pill mass if it was soft, but he could not say if it had been done in that case. In the process of analysis he had occasion to apply very little heat, but not in such a quantity as to affect the mercury in the pill. What he did would not reduce the quantity of mercury. He received five pills and analysed two for mercury and analysed the others for other substances. The two gave fairly concordant results as to percentage. In answer to the Bench, Dr. Stevenson said the deficiency of mercury in the largest pill was 0·15 gr. The pills were not well made. If the pills were 4½ gr., the deficiency was 12·50 per cent.; assuming they were 4 gr., as they had heard in evidence, the deficiency was 9 or 10 per cent.

Mr. Kirby said he relied upon the warranty, notice of which he gave to the inspector, and the pills sold were part of the goods comprised in the warranty. The warranty was based upon the price list used by the wholesale house from whom the goods were received, who described the pills as "Highest quality, lowest price, best finish, full strength." The pills were described as "Pil. Hydrarg., P.B." Writing to the defendant, the manufacturers said: "We are quite sure you will not hear any more about this, as all our pills are guaranteed, and we are prepared to stand by the guarantee." The second ground upon which he relied was that in this case the analyst had not complied with the Act, but had analysed two pills only out of the five.

The defendant said he ordered the pills from the price list, understanding that they were of the correct strength mentioned in the B.P., otherwise he should not have had them.

Mr. W. S. Glyn-Jones, member of the Council of the Pharmaceutical Society, said the price list indicated that the pills were made in accordance with the B.P., and the addition of those letters would amount to a guarantee. There was no other pil. hydrarg. than the B.P. In cross-examination, witness said there was nothing in the Pharmacopœia about blue pill; if he sold blue pill mass and it was 9 per cent. deficient he would not be selling blue pill.

The Bench expressed a wish to hear Mr. Kyle on the question of warranty. The Inspector replied that in this case the documents did not constitute a warranty within the meaning of the Act. The price list was not a warranty, but a guide to the seller in selecting the goods. With regard to the letter from the makers, there was nothing specific about it. They did not say they guaranteed the pills to be unadulterated. Mr. Kirby contended that the letters "B.P." in the price list did constitute a guarantee. There was no other pil. hydrarg. known in commerce than the B.P.

The Bench decided that the warranty had been proved, and the case would be dismissed.

On Saturday, July 11, 1903, at the Reigate County Bench, before Mr. Jeremiah Colman, D.L., and other magistrates, Messrs. Little and Crawford, chemists and druggists, Horley, appeared on an adjuorned summons for selling blue pills not of the nature, etc., demanded.

At the previous hearing of the case (see p. 877 of last volume) the case was adjourned on the application of Mr. Kirby (of Messrs. Neve, Beck and Kirby), who appeared for the defendants, so that the pills could be analysed at Somerset House.

Mr. Kirby now handed to the Bench the Somerset House analysis, which certified that the pills contained 26·2 of mercury, whereupon Mr. Kyle, county inspector, argued that this analysis showed a deficiency of 7 per cent.

Mr. Kirby said the defendants were not to blame in the matter. The pills in question were purchased by the defendants from a well-known wholesale house in May last in mass. Four days after the pills arrived the Inspector visited defendants' shop and purchased a shilling box. The bottle which contained the pills was specially opened for that sale, and the pills were in no way tampered with by Mr. Little or Mr. Crawford. Though the defendants might have a remedy against the wholesale house and secure damages, he asked the magistrates to disregard that fact. In the mechanical mixing of the pills the right percentage of mercury might not have come out, hence the deficiency. He asked the Bench not to convict under the circumstances, but to deal with his clients under Section 16 of the Summary Jurisdiction Act. If there was carelessness it was carelessness on the part of someone else other than the defendants.

Mr. Crawford, one of the defendants, gave evidence as to Mr. Little and himself purchasing Mr. Walton's business in November. The pills were purchased on May 4 from a wholesale house, and he handed the invoice to the Bench. He sold the pills in the same condition as he received them.

The Chairman said the Court agreed that an offence had been committed, but they fully accepted all that had been said by Mr. Kirby, and were certain there was no intention of fraud. Having regard to all the circumstances of the case, the Bench thought that the small fine of 1s. and costs would be sufficient.

High Court of Justice, Chancery Division.

Saccharin Patents.

On Wednesday, July 8, 1903, before Mr. Justice Buckley, an action was heard in which the Saccharin Corporation, Limited, took proceedings to restrain Daniel Hudson Jackson, of Grant Street, Blackley, Lancaster, from importing into England and from manufacturing, selling, or using certain compounds sold or used by the defendant under the name of saccharin and manufactured according to the specifications of a number of patents which the plaintiffs allege are vested in them, or in any manner only colourably differing from the same. The plaintiffs further claimed damages, or an account of all profits, delivery up of infringing compounds, and costs. Mr. Moulton, K.C., and Mr. Graham appeared for the plaintiffs, and Mr. Astbury, K.C., and Mr. A. Cartmell for the defendant.

Mr. Moulton, in opening the case, said the patents which the plaintiffs held were numerous. Their validity was not contested. Nearly all the methods of making pure saccharin were held by the plaintiffs. To get pure saccharin it was necessary to use one or all of the patents which the plaintiffs held. At first their title to them was contested, but that point had been given up by the defendant. The plaintiffs' case was that the defendant sold saccharin to at least six different persons. That saccharin was of 550 strength, and it was pure. Therefore it must have been made in accordance with some of the plaintiffs' processes.

Dr. Passmore, chemist, called in support of the plaintiffs' case, said he knew of no process except those patented which gave the pure article. A great deal of the saccharin made in Switzerland was smuggled into this country without the payment of duty.

Mr. Parks stated that he had been employed as agent for the defendant, and on his instructions had called on a number of purchasers and sold saccharin to them guaranteed to be 550 strength. The customers were so pleased with it that they had further lots. The defendant instructed him to keep no books. Witness admitted having given information to the plaintiffs about his late employer. Defendant would not pay him any commission until the saccharin was delivered. For giving information to the plaintiffs he had received about £40 from them.

Mr. H. Whitaker, carrying on business with others as H. Whitaker and Co., mineral water manufacturers, near Manchester, spoke to purchasing a quantity of saccharin from Mr. Parks in August, 1901. Mr. Parks told him it was foolish for him to pay such a price for "Corporation" saccharin when he could have it for a much less sum.

Mr. Booth, mineral water manufacturer, Manchester, gave similar evidence.

This closed the plaintiffs' case.

The further hearing was adjourned till Thursday, when full judgment, with the injunction asked for and costs, was given for the plaintiff corporation. The Judge held that the defendant had been carrying on business in a fraudulent manner.

POISONING CASES AND INQUESTS.

The deaths by poisoning reported during the seven days ended Wednesday, July 15, 1903, numbered seventeen, thus:—

Poison.	Accident.	Suicide.
Arsenic	1	—
Carbolic Acid	1	4
Chlorodyne	—	1
Chloroform	2	—
Hydrocyanic Acid	—	1
Laudanum	1	1
Oxalic Acid	—	1
Potassium Cyanide	—	1
Salt of Lemon	—	1
Kind not stated	2	—
Total	7	10

Arsenic.—Arsenical poisoning from a bedroom wall-paper acting on a body weakened by Bright's disease caused the death of a man at Cardiff.

Carbolic Acid.—A man at Llanelly, a man at Leytonstone, a woman at Liverpool, and a girl at Southampton committed suicide by taking carbolic acid. A Bradford woman, who took carbolic acid for a pain in her side, accidentally took a fatal overdose.

Chlorodyne.—A man at Holborn took the contents of three bottles of chlorodyne.

Chloroform.—Mr. S. A. Bernays, M.R.C.S., died from heart failure under chloroform, administered for an operation. A child at Tamworth died in similar circumstances.

Hydrocyanic Acid.—A Bradford man committed suicide by taking prussic acid.

Laudanum.—A Manchester cycle fitter committed suicide by swallowing the contents of three small bottles of laudanum, the labels on which showed that they had been obtained from three different chemists. A curate at Wrexham took an accidental overdose of the same drug.

Oxalic Acid.—A woman at Hampstead Heath committed suicide by drinking oxalic acid.

Potassium Cyanide.—A well-known agriculturist at Walcombe took a quantity of potassium cyanide.

Salt of Lemon.—This caused the death of a woman at Lambeth.

Kind not Known.—An Aberdeen man accidentally drank some poisonous liquid from a lager-beer bottle. Mr. A. E. Wainwright, a medical man at Doncaster, apparently died from poisoning, but no trace of poisoning was found at the post-mortem analysis.

Non-fatal Cases.—The poisons unsuccessfully used in attempts at suicide included carbolic acid, oxalic acid, rat poison, and salt of lemon.

NEW REMEDIES.

The Notes in this column embody recent suggestions in therapeutics, for the information of dispensers; they deal with novel applications of drugs and preparations in common use, in addition to new remedies strictly so-called.

Santheose.—Huchard states that santheose is nothing but theobromine of French origin. In addition to being prescribed alone, it is also given as phosphated santheose, combined with sodium phosphate; as lithiated santheose, a mixture of lithium carbonate, 1, with santheose, 2, or, in such cases as call for a cardiac stimulant, united with caffeine. The dose is the same as that for theobromine, 7½ grains two to four times in twenty-four hours in cachets.—*Répertoire* [3], **15**, 161, after *Journ. des Practs.*

Veronal.—This is a crystalline, colourless body, which melts at 191° C., tastes mildly bitter, is soluble in 12 parts of boiling water, and in 145 parts water at 20° C. It is diethyl-acetyl urea $(C_2H_5)_2CH\cdot CO\cdot NH\cdot CO\cdot NH_2$. The ordinary dose for sleeplessness is 0·5 Gm., which may be increased to 1·0 Gm. Veronal may be given as a powder or in solution, a cup of hot tea being considered a valuable vehicle. It is manufactured by E. Merck (see last vol., p. 868).—*Die Therap. d. Gegenw.*, 1903, 97.

Pyranum.—According to Schlesinger this is benzoyl thymol. sodium benzoyloxybenzoate. It is stated to be an effective remedy in neuralgia and migraine in doses of 30 to 60 gr. per diem, taken in two doses. In acute rheumatism daily doses of 50 to 60 gr. continued for three days remove both pain and fever. Chronic rheumatism is favourably influenced by doses of 7½ to 10 gr. three times a day. Pyranum is a white crystalline powder with a slight aromatic odour and a sweetish taste. Its solubility in water is 1 : 5.—*Répertoire* [3], **15**, 121; after *Thérap. Monats.*

NOTES IN PARLIAMENT.

BY OUR PARLIAMENTARY REPRESENTATIVE.

The Sugar Convention.

The Chancellor of the Exchequer, in answer to Mr. Gibson Bowles, has stated that the Bill now before Parliament does not provide for the alteration of the duties on sugar and sugared products imported into this country, but for the prohibition of the importation of sugar from foreign countries which give bounties. The form of the necessary certificates of places of origin is under consideration. Sugar and sugared products imported into the United Kingdom before September 1 next will be allowed to be taken out of bond on payment of the duties now in force.

The Finance Act and Glucose.

The Chancellor of the Exchequer was on Monday last asked by Mr. Flower whether, in view of the fact that, under the Finance Act, 1903, Section 1 (4), a rebate of 10s. a ton has been allowed on glucose imported into this country and in stock on June 30 ult., and that a similar allowance has been refused by His Majesty's Customs to the manufacturers of glucose in this country (the reason given being that the article in question is not in the same condition as the raw material from which it is manufactured and which has paid duty, having undergone transformation, although malt, the analogous transformation-product of barley, has received such allowance), he would take steps to place British manufacturers on the same footing as foreigners. In his reply Mr. Ritchie observed that malt is one of the articles specifically dutied under Section 1 of the Finance Act, 1902. Therefore rebate on a duty-paid stock of it could not be refused under Section 1 (4) (a) of the Finance Act, 1903. Apart, however, from this fact, he could not agree that the malting of barley involves a chemical transformation analogous to that which takes place when starch is converted into glucose. Importers of glucose, he added, might in any case, by warehousing it in bond, have avoided payment of the duty. On the other hand, makers of glucose in this country had more than two months' notice given them to enable them to dispose of their stocks of glucose made from dutiable materials before the duty ceased. The stock of home-made glucose, he was informed, is very small, so that a remission of the duty does not involve any considerable sum of money; but the principle, Mr. Ritchie thinks, is highly important, and he does not think that he would be justified in extending the concession already made. He further pointed out that the exceptional treatment given to grain was with the view of preventing disturbance in the grain trade and a consequent rise in prices. The circumstances in connection with the manufacture of glucose are, he holds, in no way comparable.

The Pharmacy Bill.

The Pharmacy Bill, which was nominally down for second reading on Monday last, is now on the order paper for second reading on Saturday, August 1. This, it need not be explained, is more than ever a nominal fixture.

Sterilisation of Water.

The War Secretary has been questioned by Sir Michael Foster as to whether the experiments on sterilisation of water for troops in the field referred to in his answer of July 31, 1902, have led to any scheme of sterilisation being put to the test at manœuvres or otherwise. In his reply Mr. Brodrick said that experimental tests have been made with various forms of heat sterilising apparatus and sterilising filters, and on the results of these further tests are being made in Somaliland, and will be made at the forthcoming manœuvres. He added that the sterilisation of water in standing camps can be arranged, but in the case of moving bodies of troops great difficulty is being experienced in obtaining really satisfactory results.

Analysis of Tinned Meats.

With reference to damaged tinned meats amongst the rations supplied to the Army in South Africa, several questions have been put of late to the War Secretary. One of them by Mr. C. Wason on Tuesday elicited the reply that there is no reason to suppose that the damage was due to bad meat being tinned or to defective tinning or inferior tin, but inquiries are being made on the two latter points. The analysis made at home by the Government Analyst at Somerset House of samples of the rations before they left England were all satisfactory.

WHOLESALE DRUGGISTS' PICNICS.

A Day at the Seaside.—The employees of Messrs. R. Fisher and Co., wholesale druggists, last week held their annual outing to Yarmouth. Departing from Thorpe Station at on early hour, the party spent a most enjoyable morning by the sea, and at one o'clock a substantial meal was provided. In the afternoon various amusements were indulged in, and tea was served at five o'clock. The return home was made by the mail train, everyone being delighted with the day's enjoyment.

A Picnic at Piltdown.—On Saturday, July 11, the employees of the firm of Arthur H. Cox and Co., pill and tablet manufacturers, took their annual outing. The party, numbering about fifty, started off by road in brakes and cabs at 8.30 to Piltdown, a picturesque little place eighteen miles from Brighton. The weather was delightful and the scenery charming, making the drive itself an especially enjoyable one. On arriving at the destination, a cricket match was arranged between married and single, resulting in a win for the former. At 1.30 a capital spread was served and the usual post-prandial toasts were given, the healths of Messrs. A. H. and E. E. Cox (who have for years past had the management of the business) being drunk with the greatest enthusiasm. During the afternoon a programme of sports was gone through, some refreshing themselves with a bathe in a large lake close by. Tea was partaken of at 5.30, and the return journey made at seven, everyone having had an enjoyable day.

From Bristol to Bournemouth.—The Bristol employees of Evans, Gadd and Co., Limited, wholesale chemists and druggists, of Bristol and Exeter, held their annual outing on Saturday last, July 11. The party left Bristol between five and six a.m. for Bournemouth, which town was reached about ten o'clock. The forenoon was occupied in exploring the beauties of the neighbourhood, some driving as far as Christchurch, and being much interested in visiting the old Priory Church there. Dinner was served at the Quadrant Restaurant at 1.30 p.m., Mr. H. Gadd, J.P., presiding at the head of the table, he having travelled down from London especially for the occasion. After dinner the health of the King was loyally drunk, and Mr. Eveleigh proposed "The Health and Prosperity of the Firm," coupling therewith the names of Mr. H. Gadd and Mr. H. E. Boorne, the two directors who were present. These gentlemen suitably responded. Ideal weather favoured the excursionists, most of whom availed themselves of a steamer trip to Swanage in the afternoon. The return train left at 7.20 p.m., and Bristol was reached about 10.45, thus terminating a most enjoyable day's outing.

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

Saccharin Smuggling.—Several foreigners have been fined of late for smuggling saccharin in small quantities into England, for the most part from Russia.

Greek Cabinet.—The new Minister of Public Instruction in the recently-formed Cabinet in Greece is a gentleman bearing the name of "Pharmacopoulos."

The Drugging of Horses.—A farm waggoner has been fined at Leven, Lincs., for drugging horses. The drug in question was stated to be "a powder containing 20 per cent. of antimony."

Alcohol Exhibition.—Of the International Exhibition for the utilisation of alcohol which is to be held in Vienna in April and May of next year, M. Mougeot has accepted the honorary presidency.

Herbalist's Refreshments.—At Grimsby on Thursday, July 9, a herbalist was fined £4 for two offences. The question was whether certain "temperance" drinks were really medicines or beverages to sell which a licence was necessary.

Will.—The late Mr. Arthur Hawker Cox, manufacturing chemist, of Brighton, whose death occurred at his residence, 35, Wellington Road, on April 6 last, left by his will property to the total value of £17,562 5s. 4d., including net personalty £8,578 18s. 2d.

Proposed International Exhibition.—A committee has been appointed to take steps to ascertain the views of those interested in the project to hold an International Exhibition at Manchester in 1905. The Secretary of the Committee is Mr. Wm. King, 27, Brazennose Street, Manchester.

Methylated Soap Liniment.—Information is to hand that Boots, Limited, do not intend to appeal against the adverse decision recently given in the case reported in the *Pharmaceutical Journal* for July 4 (p. 24). It will be remembered that the magistrate held that liniment of soap must be made with rectified spirit, in accordance with the B.P.

Smelling Competition.—A newspaper states that a novel device for raising money at a garden party in aid of a church building fund has been employed by the vicar of New Malden. Dark bottles containing various liquids were placed before the competitors, whose task it was to guess the contents by the smell. Local chemists will probably be called on to assist if the idea finds favour elsewhere.

Photographic Convention at Perth.—The meetings held at Perth during last week in connection with the Photographic Convention of the United Kingdom were brought to a close on Saturday, July 11. There was an excursion to the Linn of Campsie, Stobhall, and Scone Palace, and in the evening Mr. A. L. Henderson gave a lecture on "Cairo, the Nile, and the Great Assouan Dam," in aid of the Perth Consumptive Sanatorium.

Solidified Petroleum.—According to the *Petroleum Review*, Messrs. Helbing and Passmore have discovered a process whereby they are able to transform as much as 90 to 95 per cent. of petroleum of any description into a solid mass. This mass is stated to have a higher flash than ordinary petroleum, and when lighted it burns with a quiet uniform flame, does not run, and is consumed practically to the last atom, only a minute trace of ash being left.

The Jenner Institute of Preventive Medicine.—In consequence of confusion that has arisen between the "Jenner Institute for Calf Lymph" and the Jenner Institute of Preventive Medicine, it is proposed by the governing body of the latter, against the personal wish of Lord Lister, to change its name to the "Lister Institute of Preventive Medicine." Lord Iveagh, whose munificent endowment of the Institute will be remembered, is in favour of the suggested change.

The Late Alderman B. Robinson.—Alderman Stephens, Mayor of Salford, has presented to the Royal Technical Institute a three-quarter length oil painting of the late Alderman B. Robinson, pharmaceutical and manufacturing chemist, who was chairman of the Committee from its inception in 1889 to his death in April last. The portrait shows the deceased in his mayoral robes, and has been presented to the Corporation by his family as a memento of his great interest in the Institute. The picture will be hung in the committee-room.

Edinburgh Chemists' Golf Club.—The first competition for a gold medal presented by the Hon. President, Mr. Brown, was played over the Braids during last week, under "bogey" conditions, with the following results:—1st, Mr. Duncan McLaren (receiving 1 hole), 6 up; 2nd and 3rd, Mr. D. S. Philp (scratch), 2 down; Mr. George Robertson (3 holes), 2 down; 4th, Mr. H. D. Alexander (scratch), 4 down; Mr. Jas. Finlay (1 hole), 4 down. Mr. McLaren becomes the holder of the medal for the year and receives a miniature in gold. There was a large turn-out.

Oil of Swallow.—A newspaper published in Newcastle-on-Tyne contains a paragraph, communicated by Mr. C. Ridley, chemist and druggist, of that town, on oil of swallow and oil of worms. "The following recipe for oil of elder appears in Tray's supplement to the Pharmacopœia, published 1848:—'Elder leaves (fresh) 1 lb., olive oil two pints; boil till the leaves are crisp, press out the oil, and strain.' The same book gives as a synonym 'oil of swallow.' Originally, I think, oil of swallow was made by digesting swallows in olive oil, which was buried for several months in the earth before use. Oil of worms, another old-fashioned remedy, was made by digesting earth worms in sherry wine and olive oil. Both these oils are still asked for in working and in rural districts."

The Ant-Poison Case.—The *Gardener's Chronicle* publishes the following note on the prosecution of Messrs. Alexander Cross and Sons, Limited:—"Considerable interest has been excited in a case where certain manufacturers in Scotland were prosecuted by the Pharmaceutical Society, whose prescribed duty it is to undertake such duties, even at a loss to the Society. The charge was that certain manufacturers, without complying with the terms of the Pharmacy Act, sold a mixture containing a very large quantity of arsenic for the purpose of destroying ants. The manufacturers have now been convicted and fined the maximum penalty; but they have appealed against the decision, and hence comment on this particular case would be improper. On the general question of the protection of the public from the risk of accidental or malicious poisoning there cannot be two opinions."

A Remarkable Defence.—Commenting on the defence raised in the case recently heard at Eastbourne (see p. 24), where a chemist, through excess of caution, dispensed a smaller dose of mercuric chloride than was prescribed, the *British Medical Journal* says:—"It is obvious that in the above case the dispenser took an unwarrantable liberty. When an excessive dose of any drug is prescribed it is the dispenser's duty to communicate with the prescriber, if possible, and only very exceptional circumstances would justify him in making any alteration. Nor should a dose greater than the maximum of the British Pharmacopœia be always regarded as excessive without consulting other works of reference. We feel certain that the majority of pharmacists will condemn the action taken by one of their number, and it seems a pity that the Pharmaceutical Society possesses no powers for dealing with such occurrences."

Colonial Universities Conference.—A conference representative of English and Colonial universities, with the object of establishing closer relations between those institutions, was held at the Royal Society's Rooms on Tuesday, July 9. There were two sittings, presided over by Mr. James Bryce, Lord Strathcona, and Sir Gilbert Parker. One object of the movement is to give help to Colonial universities by furnishing them with better appliances than they are themselves able to provide. An interchange of professors might, according to Mr. Bryce, with advantage be extended to both sides. The Conference expressed by resolution the opinion that special and local advantages for study, and in particular for post-graduate study and research, be made as accessible as possible to students from all parts of the United Kingdom. A council is to be formed, representative of British and Colonial universities, to promote the objects set forth in the above-mentioned resolutions. At the dinner on Friday night, Mr. Balfour took the chair, and Professor Threlfall, of Sydney, U.S.A., and Sir John Buchanan, of the Cape of Good Hope, were among the speakers.

Birstall Chamber of Commerce.—Mr. John Walker, Cleckheaton, Divisional Secretary of the Pharmaceutical Society, attended the last meeting of the Birstall Chamber of Commerce to explain certain matters with regard to the sale of poisonous compounds. Mr. Walker explained that the movement which is on foot to obtain legislative sanction to the common sale of certain poisonous compounds did not emanate from agriculturists or horticulturists, but from a combination of ordinary traders and dealers. He suggested that there were grave reasons why the law should not be altered. There were about 15,000 registered chemists in the country, and, that being so, it could not reasonably be pleaded that anyone had any difficulty in obtaining the commodities. On the other hand, it was a well-known fact that indiscriminate sale of poisonous compounds had a very close relation to the number of deaths by poisoning. He also pointed out that very few chambers of commerce in the country had adopted the suggested resolutions in favour of relaxation. The Chamber adopted Mr. Walker's view of the case, and decided not to take any action. They also heartily thanked Mr. Walker for his address.

Grocers and the Sale of Medicines.—The following report of a meeting of the Manchester, Salford, and District Grocers' Association is taken from the *Grocer*:—"The Secretary drew attention to the action of the chemists' organisation in trying to prevent grocers from selling medicines or any article such as pills and cough drops, which contained a single atom of poison.—Mr. Williams said he had given this matter a good deal of consideration, and had received a circular from the Proprietary Articles Trade Association on the subject. Whilst willing to concede that the Pharmaceutical Society was quite within its rights in protecting the members of its own trade in the sale of articles which contained a poisonous ingredient, if the object sought was fully attained it would seriously affect the grocers, and particularly the licensed grocers, throughout the country.—Mr. Cadman: We should not be able to sell carbolic soap, I suppose.—The Secretary: No, we should not.—Councillor Robinson remarked that he, for one, should not regret if grocers ceased to sell these 'cure-all patents,' as he believed that many people would 'live longer and die happier' if they did not take them.—On the suggestion of Mr. Williams, the matter was referred to the Emergency Committee." We do not pretend to be able to fathom the meaning, if any, of the discussion.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. Cyril Herbert Kirby, junior partner in the firm of Neve, Beck, and Kirby, solicitors to the Chemists' Defence Association, is a man whose name is quite familiar to readers of the *Pharmaceutical Journal*. To his share falls most of the legal work in connection with the Association, and on many occasions chemists and druggists have found his services as solicitor or advocate of great value. Mr. Kirby is chairman of the United Law Society, though only thirty-three years of age, and has found time for occasional articles in the press upon commercial law. His paper on the recent decisions under the Medicine Stamp Duty Acts is published in full at page 75. Mr. Kirby has achieved a measure of fame on the Thames as an oarsman.

Mr. J. G. Ferrier, Ph.C., Arbroath, Scotland, has passed and aken first place at the Licence Examination of the Pharmaceutical Society of Ireland, held in Dublin last week.

Mr. Leonard G. Walton, of Higher Broughton, Manchester, has taken over the old-established retail and dispensing pharmacy of Mr. Francis Barton, Trafalgar Road, Egremont, Cheshire, who has qualified as a medical man.

Lord Lister was on July 1 admitted to the honorary freedom of the Merchant Taylors' Company, in recognition of his long and valuable service to surgery by the discovery of the antiseptic treatment.

Mr. J. C. Hardman, chemist and optician, formerly with Messrs. Savory and Moore, Bond Street, W., and latterly with Messrs. Reynolds and Branson, Leeds, has purchased the business of Mr. Thos. Coatsworth, chemist, Yeadon, near Leeds, rom July 18, 1903.

PATENTS AND TRADE MARKS.*

New Patent Applications.

DISINFECTING DEVICES (No. 6,099, of 1903).—L. E. Jones, 116, East Seventh Avenue, Conshohocken, Pennsylvania, U.S.A. Consists of a shallow circular pan, containing sulphur or other combustible substance, having a bottle with a long contracted neck set in the centre thereof. The bottle contains vaporisable disinfectant, and is held in position in the pan by means of a sheet metal strap extending into a circular flange. The latter is perforated to receive the neck of the bottle, keeping it rigid and preventing the flames from the burning sulphur from reaching the vapours emanating from the mouth of the bottle.

PREPARATIONS FOR THE PREVENTION OF CRAMP (No. 9,132, of 1903).—A. Lamplough and D. M. Murrow, both of 2, Finsbury Square, E.C. Consists of a mixture of sulphur and the wood of the various members of the pine family or of cedar wood. The best results are obtained by a mixture of 1 oz. of granulated sulphur and 2 drachms of pitch pine dust. The above materials are placed in a bag of permeable material so as to form a pad. The pad is placed under the pillow of the patient, and the natural heat of the body will cause the evolution of remedial vapours from the preparation. About 2 oz. of the preparation should be placed in the bag.

PROCESSES OF OBTAINING CARBON COMPOUNDS having the general formula $C_{10}H_{16}O$ (No. 9,340, of 1903).—K. C. Wideen, 672, Bedford Avenue, Brooklyn, New York, U.S.A., and the Carbon Hydrate Chemical Co., of 11, Broadway, New York, U.S.A. Consists in converting acetylene into a carbon compound having the above formula, by passing the same through a solution of double salts of ammonium and chromo sulphate of the protoxide type; for example, $(NH_4)_2SO_4+CrSO_4+$ water to form ethylene, and passing the ethylene in rapid succession over a heated mass of parabromisopropylbenzene, $C_6H_4Br{\cdot}CH(CH_3)_2$, then over heated sodium and thence into intimate contact with superheated steam, which should be heated to above 550° F. The sodium should be treated continually with a spray of very dilute sulphuric acid.

HYPODERMIC SYRINGE (No. 9,611, of 1903).—C. O. W. Karst, 5, Schutzenstrasse, Remda, Thuringia, Germany. Consists of a syringe, made of glass, constructed so as to avoid the formation of air bubbles when filling same with liquid. Consists of a tube open at one end and completely closed at the other. The piston carries the canule, or has at its outer end a nozzle for the insertion of a hollow needle.

DEVICES FOR STORING AND INJECTING SERUMS AND THE LIKE (No. 9,729, of 1903).—H. H. Lake, 45, Southampton Buildings, W.C. (Communicated by Parke, Davis and Co., Detroit, Michigan, U.S.A.) Consists of a syringe, preferably of the hypodermic type, having a bulb-shaped body containing the medicament, having a reduced tubular extension at either end. The latter are covered by caps, made preferably of thin penetrable material such as tin, so that they may be readily punctured. On one cap is placed a bulb provided with a conical valve in the interior thereof, which allows air to be forced within the syringe body, but effectively prevents the passage of the medicament into the bulb.

Note.—Opposition to the grant of any of the above-mentioned Patents must be filed at the Patent Office on or before August 11, 1903.

New Trade Mark Applications.

"**CEREBOS**," for chemical substances used in manufactures, etc. (255,029), philosophical instruments, scientific instruments, etc. (255,030), and perfumery, etc. (255,038), by Cerebos, Limited, Ellison Place, Newcastle-on-Tyne.

The "**IRIS**" plate label, for photographic plates, by O. Schölzig, Dashwood House, 9, New Broad Street, E.C. 253,671.

"**SUNNOL**," for prepared carbide of calcium, by C. Bingham, 47, Albert Gate, S.W. 254,237.

"**IBIS**," for chemical substances used for agricultural, horticultural, veterinary and sanitary purposes, by J. Braithwaite and Son, Castle Street, Kendal. 254,430.

"**ANMOFA**," for chemical substances used for agricultural, etc., purposes, by W. M. Noott, 8, Kensington Park Road, W. 255,407.

VIEW OF THE NELSON MONUMENT, for Pills for Mankind, by W. J. Keymer and Co., 66, Fenchurch Street, E.C. 253,830.

"**GYPTICAN**," for chemical substances prepared for use in medicine and pharmacy, by the Geddes Manufacturing Company, 16-20, Farringdon Avenue, E.C. 253,887.

"**CYCLAX**," for face lotions, medicated soap, etc., by F. Forsythe, 14, Cotlands Road, Bournemouth. 255,043. And for hair preparations, toilet soap (perfumed), etc. 255,044.

Note.—Opposition to the registration of any of the above-mentioned Trade Marks must be filed at the Patent Office on or before August 15, 1903

MARKET REPORT.

The quotations given below are the lowest net cash prices for bulk quantities, to which other charges have to be added It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London, Thursday, July 16, 1903.

Although business during the week has been dull and few transactions of note have taken place, more interest has been evinced in several items. There are few changes of importance to record. The report which was received from Smyrna, and duly noted in these columns, a fortnight ago, has had a noticeable effect. It seems that the Opium crop, which is now being harvested, is washed away during collection. As a result, the price, both here and in Smyrna, has advanced. The latest rumour is given below with due reserve. There is as yet no appreciable change in Morphine, but it is only reasonable to anticipate an advance in this direction also. Codeine is unchanged. Quinine seems uncertain what to do; at the latter end of last week and during the first few days of the present week it showed a tendency to crawl gradually upward, at the rate of about an eighth of a penny per diem, but to-day quotations are, if anything, a wee bit easier. The offerings, however, are not large. Menthol is another article which is being watched with interest, and it is not improbable that the high prices for Kobayashi which have ruled of late are not permanent. This is based on the fact that bear sales, for arrival, have been made at considerably reduced rates. At any rate, it will be well to watch developments. Oil of Peppermint, in spite of the result of the sale last week, remains unchanged. It will be remembered that 25 cases H.G.H. sold without reserve at ninepence below the highest price quoted, and, contrary to expectation, this has not depressed the market—in fact, immediately after the auction the Oil could not be bought under the prices quoted below. Cream of Tartar is slightly easier in the absence of buyers. Crude Camphor is higher, but there is no difference in the Refined.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and Patent Notes for Inventors' free on application.

BLEACHING POWDER.—English, £5 2s. 6d.

BORACIC ACID.—Crystals, 22s. ; powder, 24s.

BORAX.—Crystals, 13s. ; powder, 14s.

BROMIDES—In steady demand. Potassium, 1s. 11½d. ; Sodium, 2s. 2½d. ; Ammonium, 2s. 3d.

CAMPHOR.—Japan crude is higher at 176s. There is no difference in the price of refined. Bells, 2s. 3d. ; Flowers, 2s. 2d. 1d. less for ton lots.

CARBOLIC ACID—Remains quiet. 34° to 35° C., 5d. per lb. ; 39° to 40° C., 5¼d. ; detached crystals, 39° to 40° C., 6¾d., in 2½-cwt. drums; crude, 60° F., 1s. 6½d. ; liquid (95 to 98 per cent.) of pale straw colour, 1s. 3d. per gallon.

CARDAMOMS.—In fair demand, and sales have been made in all grades from second hand.

CINCHONA BARK.—The shipments of Java during the first half of the month were 610,000 Amsterdam lb., against 700,000 Amsterdam lb. for the corresponding period of last year, and 691,000 Amsterdam lb. in 1901.

CITRIC ACID—1s. 1d.

CLOVES.—Zanzibar is a trifle steadier, but quiet. Small quantities for September delivery have been sold at 4 1/11d. Nothing was offered at auction.

COCAINE—Is firm at 17s. 6d.

COCO NUT OIL.—Steady. Ceylon spot, £25 ; afloat, c.i.f., £22 5s. Cochin, spot, nominally £33 ; August-October, £25 c.i.f.

CODEINE.—No change ; 10s. is the price quoted.

COTTON OIL.—London Crude spot £21 10s., Refined spot, £23 to £24 5s.

CREAM OF TARTAR—Is a trifle easier in the absence of orders. First white crystals on spot, 87s. ; powder, 89s. ; 98 per cent. foreign powder, 91s. ; 95 per cent., 88s.

ERGOT OF RYE—Firmer at 1s. 1½d. per lb., c.i.f. ; the spot price is 1s 2d.

GINGER.—At the auction 718 packages of Cochin were offered, and 104 packages were sold, for the most part without reserve. Washed rough fair medium and small fetched 31s. to 31s. 6d. Japan : 226 bags were offered, and 40 bags sold, but the price was not disclosed. There was little demand for Jamaica, of which about 700 packages were offered and 150 sold ; good bold bright, 62s. to 65s.

GLYCERIN.—The price for crude is slightly higher, but the refined remains the same. Combined manufacturers' price is 67s. 6d. to 68s. per cwt. The latter figure is for ½-ton lots.

IODIDES—Unaltered. Potassium, 8s. 9d. ; Sodium, 9s. 10d. ; Iodoform, 11s. 8d. ; Iodine, Howard's Resublimed, 9s. 9d. to 10s.

IPECACUANHA.—Rio remains firm at 5s. 6d. to 5s. 7d., at which prices small sales have been made.

LINSEED OIL.—Firmer. London spot pipes £21 2s. 6d., barrels £21 7s. 6d.

MENTHOL.—Spot price for Kobayashi remains firm at 24s. Japan price is 21s., c.i.f. Some bear sales have been transacted at 18s., c.i.f.

MERCURIALS—Steady at unchanged prices. Calomel, 3s. 0½d. ; Corrosive Sublimate, 2s. 8½d. ; White Precipitate, 3s. 7d. ; Red ditto, 3s. 4½d.

MORPHINE.—There is a better demand at full prices, 4s. 6d. being now asked. Prices may still rise.

NUTMEGS.—At auction, 20 boxes Singapore sold, 159's at 7d. ; 2 cases Bombay sold, 95's dark at 10d. 12 cases Penang were offered, but did not sell. West Indian : 65 packages sold, 70's at 1s. 6d., and 104's at 10d.

OIL OF ANISE.—The price quoted for Star is 4s. 3d. per lb.

OIL OF CASSIA.—In bulk at the rate of 3s. 6d. per lb.

OLIVE OIL.—Mogador £31 10s. to £33, Spanish £32. Levant £31 10s. to £33.

OPIUM.—Good business has been done during the week both here and in Smyrna. A few hundred cases sold in Smyrna for America, ordinary quality, 9s. 4d., at which price there are now no sellers. Considerable business has been done in London, and 9s. 6d. to 10s. is now asked. Persian has also been freely dealt in at 9s. to 9s. 6d., according to quality. (6 p.m.) : There are rumours that a telegram has been received from Smyrna stating that good quality has been sold at 10s. 3d.

OXALIC ACID.—2⅝d. to 2¾d. net, delivered free London.

PEPPERMINT OIL—Remains firm at 12s. 6d. to 12s. 9d. per lb. HGH. The lower price obtained at last week's auction has had no effect on the market. The price for Japan Kobayashi is 8s. 3d. net, c.i.f.

QUICKSILVER—Unaltered at £8 12s. 6d.

QUININE.—At the time of going to press B&S and/or Brunswick on the spot is being quoted at 10⅞d. and December delivery at 11⅛d. The market is quiet.

RAPE OIL—Quiet. Ordinary Brown on the spot and to the end of the year £22 10s. English refined spot £24.

SENNA.—There have been a good many inquiries for medium leaf Tinnevelly, and a few sales have been effected at 4d. and 4½d.

SHELLAC.—The spot demand is quiet, with small sales on a basis of 139s., for fair TN Orange, cash. For August delivery some cases have been sold at 142s.

SODIUM BICARBONATE.—£7 5s. per ton landed. Howard's crystal or powder, 45s. per cwt.

SULPHATE OF AMMONIA—A trifle easier if anything. The following is an actual quotation made to-day: 24 to 24½ per cent. prompt, £12 12s. per ton, f.o.b. Glasgow, in double bags.

TARTARIC ACID.—English on the spot, 1s. 1½d. ; foreign, 1s. 1¼d.

TURPENTINE.—American spot, 37s. 10½d. to 38s. ; July, 37s. 9d. ; August, 37s. 4½d. ; Sept.-Dec., 37s. 3d. to 37s. 4½d. ; Jan.-April, 38s. 3d.

WITCH HAZEL.—Since last Thursday's auctions part offered at the sales have been sold at 1s. 4d. per gal. (without spirit).

THE PROSPECT OF THE CROPS.

The following report on medicinal plants for 1903 has been received from Messrs. Ransom and Son, Hitchin:—*Belladonna.*—The early plant was injured by the late frosts, and although it has now mostly recovered it is shorter than usual, and the quantity will be less than last year. *Henbane.*—The crops are very irregular this season. In places it is almost a failure, while in other situations it is abundant. Altogether it appears to be more plentiful than last year. *Lavender.*—The plants are looking healthy, but the flowers are very irregular. With favourable weather for harvest the prospects should be fairly good. *Peppermint.*—This is not likely to be abundant, the plants being thin. Rain is now much needed. *Rosemary.*—The plants are in fairly good condition, and the crop will probably be about up to the average. *Elaterium.*—The prospect is not so good as usual. The heavy rains, followed by the hot weather, have not been favourable for healthy growth. *Aconite*—The plants are in good condition, and an average crop may be anticipated.

JAPANESE CAMPHOR.

Mr. H. G. Parlett, Acting Japanese Secretary to His Britannic Majesty's Legation, Tokio, states that the value of the camphor exported from Japan in 1902 amounted to £347,577, while in 1901 it reached the sum of £398,632, leaving a balance in favour of the latter year of £51,055. The United States, United Kingdom, Germany, British India, and Hong Kong are the chief consumers. At the beginning of the year the market was very unsettled, owing to the uncertainty prevailing with regard to the Monopoly Bill, which had been referred by the Diet to a committee. In March this Bill was thrown out by the House of Peers, and the result in the camphor market was a sharp drop in prices. High prices with a want of buyers was the rule for the early summer; later on both buyers and sellers were off, and the end of the year found the market dull. Japanese journals point out the imperative necessity of devising some means for bringing the camphor business in Japan proper under the same monopoly as that of Formosa. This would put an end, so they assert, to the suicidal policy of under-selling, which is at present proving so disastrous to the business both in Japan and Formosa.

THE SOUTH AFRICAN CHEMICAL AND DRUG TRADE.

The United Kingdom annually imports drugs, chemicals, and medicinal preparations at the rate of 4s. per head of its population of 40,500,000. South Africa, whose industrial history is still in its earliest stages, imports similar merchandise to the extent of 12s. per head of its white population of 1,000,000. The importance, therefore, of South Africa as a market for chemicals, drugs, and allied products is obvious, and it is equally obvious that, with the gradual resumption of mining and other industries in which chemicals play an important part—to say nothing, for the present, of the numerous new industries which are being established, and will eventually constitute the country one of the great industrial areas of the earth—the demand for these goods will expand in a rapidly increasing ratio.

The following table gives a list of the articles imported into Cape Colony, Natal, Delagoa Bay.

Article.	1898.	1901.	1902.
	£	£	£
Acetic Acid	589	597	741
Acids, unenumerated	219	81	—
Apothecaryware	8,568	62,565	89,728
Chemicals and Drugs	428,747	312,726	440,087
Cyanide of Potassium	124,442	300	—
Medical Preparations	—	55,240	60,613
Nitric Acid	68	—	—
Quicksilver	5,658	305	733
Sheep Dip	62,361	82,311	5,658
Sulphur, Flowers of	5,399	5,969	—
Sulphuric Acid	177	285	319
Total	636,178	520,380	597,879

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

Medicine Stamp Duty.

I wish to be with a host of others, I trust, in expressing approval at the intention of the Pharmaceutical Council to consider the present difficulties in connection with stamp duty. And I trust, whatever the result of their deliberation may be, they may find it possible to give the members and the trade some pronouncement on the matter. They cannot hope to meet each individual case, but they may be able to point out general principles which may prove of considerable value. I hope, in considering the advisability of addressing Somerset House, the Council will not be influenced too greatly by the possibility of negative results. Will they not be wiser if, finding that the recent decision of the High Court inflicts a grievance upon chemists—as I feel it does—they protest strongly against it. It is an absurdity that we can no longer use such a description as "Cough Mixture" or "Liver Pill" without liability to duty. It is also much more than this. It is a considerable inconvenience and danger to the public, and inflicts a serious loss on the chemist, for the customer will not pay the duty. And my view is that, whether we have hope of immediate relief or not, we must give expression to the injustice and folly of the decision. There must be hundreds of chemists, like myself, who are not in love with quackery and endeavour to conduct their business without the possibility of offence to the medical profession. We do not laud our preparations, either by label or pamphlet, as a certain cure for all ills. Yet we have considered it within our province to label a mixture "Liver Mixture" or "Neuralgia Mixture," or "Corn Paint," without making it a "patent" medicine. And in this we have had the sanction of the authorities for a length of time which in many directions the law would say constituted a right. At any rate, I fail to see any necessity laid upon the Stamp Office for prosecution, even if the law says otherwise.

Camberley, July 14, 1903. R. J. Evans.

Suppose a person comes for two-pennyworth of cough mixture and it is sold, simply a "mixture" label put on, with or without name and address? Would it be necessary to affix a 1½d. medicine stamp? And suppose one is asked for a pennyworth of antibilious pills (pills in a box without label, or simply the address of vendor), how then?

July 15, 1903. "Store Hater" (91/31).

*** In such instances as mentioned by our correspondent, it would not appear necessary to attach stamps, liability to duty being only incurred by holding out or recommending the articles on labels or handbills, or in any public notice or advertisement.—[Ed. *P.J.*]

A Dispensing Difficulty.

I read with great interest the letter signed by Mr. Bernard Ellis which appeared in your issue of last week. It contained much sound common sense, but at the same time I think Mr. Ellis is too hasty in his judgment, and jumps too readily at conclusions. Your correspondent, I take it, is of opinion that an agreement between doctors and chemists as regards dispensing and prescribing is desirable, and yet I regret to observe that the tone of his letter is not calculated to diminish the "antagonism amongst medical men and chemists." This "antagonism," I fear, must be local; at any rate, I feel sure it is not general. I hope an inquiry into the question will be instituted, and sincerely trust something may come of it. In the meantime chemists cannot do better than take the excellent advice contained in your editorial, and approach the problem in a friendly spirit.

London, July 15, 1903. J. Wood.

"A Margate Surgeon" writes:—For many years the surgeons and physicians in Margate have not dispensed their own medicines. When they commenced the abandonment of this pursuit they met a representative of the chemists and agreed to certain charges for medicines which they considered would not too much embarrass their middle-class patients. The arrangement has, I believe, worked well, and been carried on ever since.

"A Torquay Practitioner" writes:—The medical men in Torquay (with one or two exceptions) do not dispense any medicines. The system works very well from the chemists' point of view, but the doctors lose a good deal by it, as the patients retain their prescriptions and often take the medicine for months or years, regularly or at intervals, without seeing the doctor again. They not only do this, but I have known many instances where my prescriptions have been passed on to friends of the patient, and used by them, without my receiving any benefit. It is not an unusual thing for chemists to be asked to write a copy of a prescription for this purpose. It is a very usual thing for a patient to have a dozen or more prescriptions carefully marked "liver," "cough," "tonic," "neuralgia," etc., etc. If they happen to feel out of sorts at any time, they run through two or three of these prescriptions, and if the result is not satisfactory, send for the doctor. Poor people complain very much at having to pay doctor and chemist, and amongst this class bad debts are very numerous.

The North British Branch.

Mr. Walker, in his letter in last week's issue, refers to "The Edinburgh Committee" and to "Scottish Chairmen of Committees." Such expressions are both inaccurate and misleading. There is no "Edinburgh Committee," and with reference to Mr. Walker's further remarks it seems unnecessary to add that the Chairman is not the Executive, nor to point out that the Chairman's remarks were not made at any meeting of Executive, but at the annual meeting of the members of the Society in Scotland. Also "Scottish Chairmen of Committees" do not exist. By "the Edinburgh Committee" Mr. Walker no doubt means the Executive of the North British Branch, which meets in Edinburgh, but is elected by members and associates in business resident in Scotland. This Executive is not a committee, and although it was proposed in 1886 to so call it, the more appropriate name "Executive" was given to it by the Council. But although the term "Executive" dates from 1886, the North British Branch dates from 1851, and was formed as the result of a compact made by Mr. Jacob Bell, representing the Council of the Society at that time on the one hand, and certain leading Scottish pharmacists on the other. The Pharmaceutical Society were seeking to promote a Bill in Parliament, and Scottish pharmacists had to face the question, "Should they oppose this Bill and promote a Bill of their own in order to establish a Pharmaceutical Society in Scotland?" But Mr. Jacob Bell, seeing the advantages of one united Pharmaceutical Society for Great Britain, came to Edinburgh, held a meeting with the Scotchmen, and offered to establish a North British Branch of the Society with a Board of Examiners in Scotland, on condition that no opposition would come from Scotland to the Bill being promoted by the Pharmaceutical Society, and that the proposal to form a Pharmaceutical Society for Scotland should be dropped. This was agreed to by both sides, and the maintenance of the North British Branch is therefore as binding on the successors of Mr. Jacob Bell and his Council on the one hand as it is on the successors of the pharmacists of Scotland on the other, and all attempts to belittle the significance and utility of the Branch are therefore mischievous.

Edinburgh, July 13, 1903. Claude F. Henry.

The Jacob Bell Scholarship Examination.

I quite agree with your correspondent "B. B. S." upon the subject of altering the examination for the Bell and Manchester Scholarships. I take it that the object of the examination is to discover the man with the greatest capacity for learning, so as to make of him a model pharmacist. The man who possesses this qualification is not the one who can in the course of his apprenticeship "cram up" three books of the Æneid and apply the simple rules of parsing and arithmetic, but the one who can exercise his reasoning powers in addition to his memory. The examination as it now stands gives no scope for such a one, the only place for originality of ideas or the application of logic being in the essays, and even they are invariably upon some stereotyped copy-book subjects. Board school arithmetic should be cut out, and a higher standard of mathematics substituted. "B. B. S.'s" suggestion as to bringing the pharmaceutical Latin up to date and introducing French or German prescriptions is a most happy one. The standard of the afternoon paper may well be allowed to remain as it is at present, as it would be a sheer waste of time for a man with a greater knowledge of the subjects to spend nine months in covering the remaining ground between that and the Minor standard. The excellence of a candidate in the arts paper, such as has been suggested, would be a sufficient hall-mark to guarantee his capability to assimilate the knowledge imparted during the "Square" curriculum, and would ensure the possession of a good general education, which is an essential to anyone who would excel in pharmacy and be an example to the public of what one would like all pharmacists to be.

London, W.C., July 15, 1903. A. G. C. Paterson.

Sixty Years Ago.

From the "PHARMACEUTICAL JOURNAL," JULY, 1843.

THE MEDICINE STAMP AND LICENCE ACTS.

There are, on the whole review of these Acts (the Medicine Stamp and Licence Acts)—considered together, and with reference to their objects and to each other—four classes of persons contemplated by the Legislature, and three sorts of things as within the scope of the medicine duty laws:—

The classes of persons are—

First, those who by apprenticeship to surgeons, apothecaries, chemists and druggists (and surgeons of the navy and army) derive the qualification of skill from discipline for engaging and practising in the sale of drugs and medical preparations.

Secondly, persons procuring the legal or statutory qualification of a licence.

Thirdly, patentees of proprietary preparations in medicine, quacks, or nostrum-makers; and

Lastly, all unlicensed vendors of drugs and medical compounds.

The three things contemplated are—

First, drugs, etc., entire.

Secondly, preparations and compounds of those of legitimate character; and,

Thirdly, such of the latter as are of spurious or empirical character.

Of the four classes of persons contemplated by the Acts, the first class are exempted from all the restraining and disabling provisions, whether by clause or schedule, except that of the impost of duties on the third sort of things, which are the subject-matter of the Statutes, if sold by them.

The second class of persons contemplated are rendered capable of vending the first class of things without payment of other duty than that imposed on the necessary licence, and are authorised to sell the second sort of things on payment by them beforehand of the duties imposed on their sale by the law; and also to sell the third sort of things received from the owners or compounders, when stamped, as having paid the duty.

The third class of persons consists of all original vendors, makers, or proprietors of patent medicines (as they are termed) and empirical nostrums, whether patent or not; in other words, proprietors, makers, and first vendors of the third sort of things above enumerated.

Thus the Statutes on this subject have made a clear distinction between persons qualified by education and persons authorised by licence to sell medicines. Those sold by the former are not subjected to duty; those sold by the latter are; hence the medicines sold by a surgeon, apothecary, chemist or druggist are not chargeable with duties which, when sold by a licensed vendor of medicines, would be so chargeable. This was the great and main object of all the Medicines Stamp Acts, and is the law made by those Statutes. . . . .

It would appear . . . . that grocers, oilmen, hucksters, and other unqualified persons cannot legally sell medicines, either simple or compounded, without taking out a licence, and cannot sell compounded medicines such as tinctures, pills, etc., without attaching a stamp to each article.

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Washing Coloured Fabrics (J. P. S.—91/26).—A small quantity of liquid ammonia is frequently used for the purpose.

Man Servant (J. R. S.—91/24).—The licence may be obtained from the larger district post offices, or from Somerset House.

Canada (A. B. G.—91/27).—Full information can be obtained from the Agent-General for the Dominion of Canada, 17, Victoria Street, London, S.W.

Galen Place (B. B.—210/24).—Your letter is hardly suitable for publication, but we have referred the matter to the proper quarter, and are informed that arrangements have already been made to provide better accommodation.

Revenue Law (B. G. J.—210/35).—The letter is not inserted because its meaning is not clear in the absence of the previous communication to which reference is made. For the same reason we can give no opinion.

Compound Spirit of Ether (J. D.—91/25).—Your best plan will be to return to the form of the 1885 B.P., by adding 3 fl. drachms of "oleum æthereum" to 8 fl. oz. of ether and 16 fl. oz. of alcohol, 90 per cent. You must bear in mind, however, that the product will not correspond strictly to Spt. Æther. Comp. of the B.P., 1900.

Prescription (F. M.—91/28).—The quantity of strychnine hydrobromide that might be formed is within the limit of solubility in water, but it is difficult to say whether or not the large quantity of ammonium chloride would lessen, to a dangerous degree, the solubility of the strychnine salt. You would be wise to experiment before sending out such a mixture; but the addition of hydrobromic acid is not to be recommended.

Nauheim Bath (J. O.—91/23).—The Nauheim springs yield water which is rich in common salt and carbon dioxide, but we are unable to state the exact composition. The following formula for a carbonated salt bath is given by Dieterich :—Dissolve common salt, 400 Gm., and sodium bicarbonate, 300 Gm., in the bath water (say 30 gallons) at a temperature of 36°-38° C.; then add, in a thin stream, crude hydrochloric acid, 300 Gm.

Fireproofing Wood (W. F. W.—91/30).—Though the injection of saline solutions, *e.g.*, a strong solution of ammonium phosphate has been recommended, coating with potassium cyanide or an asbestos paint is probably the most satisfactory method. Immersion of wood in the following compound at a high temperature for three hours is said to render it incombustible without any change in appearance. Zinc sulphate, 55 lb.; caustic potash, 22 lb.; alum, 44 lb.; manganese oxide, 22 lb.; sulphuric acid, 22 lb.; water, 54 lb. Refer to the article on fireproofing in Spon's 'Workshop Receipts,' Series V. (E. and F. N. Spon, London), where details are given of these and other methods.

PUBLICATIONS RECEIVED.

Manual of Intragastric Technique. By George Herschell, M.D.Lond. Pp. 1-162. Price 7s. 6d. London: Henry J. Glaisher, 57, Wigmore Street, Cavendish Square, W. 1903. From the Publishers.

Beitrage zur Kenntniss der Wirkung des Chlorbariums. By Dr. H. Schedel, with introduction by Professor Dr. R. Kobert. Pp. 108. Stuttgart: Verlag von Ferdinand Enke. 1903. From the Publishers.

Polyphase Currents in Electrotherapy. By George Herschell, M.D.Lond. Pp. 1-44. Price 2s. 6d. net. London: Henry J. Glaisher, 57, Wigmore Street, Cavendish Square, W. 1903. From the Publishers.

A Skin Pharmacopœia, by James Startin. Fifth Edition. Pp. 64. Bristol: John Wright and Co. 1903. From the Publishers.

Saint Thomas's Hospital Reports, 1901. New Series. Vol. XXX. Edited by Dr. H. P. Hawkins and Mr. W. H. Battle. Pp. xiv. + 404 + 136. London: J. and A. Churchill, 7, Great Marlborough Street, W. 1903. From the Publishers.

BIRTHS.

Happold.—On July 11, at 4, Eastcombe Terrace, Blackheath, S.E., the wife of C. Happold, of a daughter.

Pollard.—On July 10, at Belmont, Pellhurst Road, Ryde, to Mr. and Mrs. E. W. Pollard, a daughter.

MARRIAGE.

M'Cutcheon—Sutherland.—On July 11, at the Maitland Hotel, Edinburgh, by the Rev. James Macleod, Wardie U.F. Church, Alexander M'Cutcheon, chemist, to Willie Watson, youngest daughter of the late David Sutherland and Mrs. Sutherland, 9, Goldenacre Terrace, Edinburgh.

DEATHS.

Baker.—On July 7. Oliver Baker, Chemist and Druggist, Headingley, Leeds. Aged 24. Mr. Baker had been a member of the Pharmaceutical Society since 1902.

Knight.—On July 9. Charles Knight, Chemist and Druggist, Romford. Aged 46.

Robertson.—On July 5, at 30, Hemstall Road, West Hampstead, George Henry Robertson, F.C.S., aged 43, late West Yorkshire Regiment, and afterwards Secretary and Registrar of the Institute of Chemistry, son of the late Col. G. H. Robertson, C.B., A.D.C. to the Queen, 25th Bombay N.L.I.

Sleight.—On July 10. William Wilson Sleight, Chemist and Druggist, Leeds. Aged 66.

Thorpe.—On June 29. Alfred Thorpe, Chemist and Druggist, Eastleigh, formerly of London. Aged 67.

Calendar for the Week (July 19—25, 1903).

Days of M	Days of W	Events of the Week.	Sun Rises	Sun Sets.
19	**S**	**Sixth Sunday after Trinity.**	4.6	8.6
20	M	Petrarch born 1304; died July 19, 1374.	4.7	8.5
21	Tu	A. J. Mundella died 1897.	4.8	8.4
22	W	Pharmaceutical Society *v.* London and Provincial Supply Association, Limited. Judgment, 1880.	4.10	8.2
23	Th	London Chemists' Association (North London Branch), Idris Factory, Pratt Street, Camden Town, at 3.30 p.m.—General Meeting. Wolverhampton and District Chemists' Association.—Excursion. Lincoln Chemists' Association, at 8 p.m.	4.11	8.1
24	F	●New Moon, 0.46 p.m.	4.12	8.0
25	S	Pharmacy Act Amendment Act (1898) passed.	4.14	7.58

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Bagley, Baron, Beuse, Bilkley, Boorne, Branford, Branson, Crake, Cummings, Dunlop, Dunning, Emberson, Ferrall, Ferrier, Gavin, Gilmour, Grossmann, Gwinn, Happold, Hardman, Idris, Kindall, Magan, McWalter, Ogle, Pettifer, Pollard, Radford, Rudd, Sankey, Stone, Sturdy, Swaffin, Taplin, Tharratt, Timmins, Walton, Wand, Westlake, Winton, Wootton.

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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, July 23, 1903.

The Places to be Visited by members of the Conference next week are described and illustrated.

Another Article on Pharmacy in Russia appears in this issue, and much instructive information concerning the routine of a Russian pharmacist's life is detailed.

Radium still Maintains its position as the most interesting chemical element of the day. Sir William Ramsay and Sir W. Huggins have made further discoveries respecting it.

It is the Sad Duty of the Journal to announce the death of Mr. John Barclay, B.Sc., a managing director in the well-known Birmingham firm of Southall Brothers and Barclay, Limited, who died suddenly on Sunday last in Switzerland.

The King's Visit to Ireland becomes of interest to pharmacists from the fact that a formal address was presented by the President and Ex-President of the Pharmaceutical Society of Ireland. The text of the address will be found in this issue.

The Midland Pharmaceutical Association has elected the officers for the next session; Mr. A. W. Gerrard is to succeed Mr. G. E. Perry as President. The local associations of chemists at Torquay and Sheffield have discussed medicine stamp questions, without, however, passing any resolution on the subject.

Cream of Tartar containing ¾ Grain of Lead per lb. was sold by three grocers in Wiltshire, who have in consequence been fined under the Sale of Food and Drugs Acts. The magistrates overruled the contention put forward for the defence that the British Pharmacopœia could not be regarded as a standard binding on grocers.

The Assay and Identification of Powdered Ipecacuanha has been the subject of long and careful investigation in the Pharmacy Research Laboratory of the Pharmaceutical Society, by Mr. A. G. C. Paterson, Butt Scholar. Much excellent work has been done, the results being embodied in a paper, the first part of which appeared in the Journal of last week, while the conclusion is given in the present issue.

Chemists in the Parliamentary Division of Barnard Castle might well be in a quandary, for each of the three candidates has expressed his approval of the Pharmacy Bill. The most amenable state in a man's life is reached, so it is said, when he becomes a candidate for Parliamentary honours. Pharmacists should bear this in mind in view of the next General Election, which the *Times* forecasts for March, 1904.

Three Prosecutions under the Pharmacy Act, 1868, are reported this week. Penalties were recovered at Glasgow from the keeper of a general store, and at Walsall from an assistant to Boots (Western), Limited. The defendant in the latter case admitted being in charge of the shop, and said there was no registered chemist and druggist on the premises. What of the firm's page advertisements in the daily press after this? The hearing of proof in the third case will take place later.

The General Medical Council has been considering the standard of some of the examinations of the Royal Colleges of Physicians and Surgeons, the Society of Apothecaries of London, and the University of Oxford. A number of resolutions signifying dissatisfaction with certain of the examinations were carried. The earlier examinations of the Royal Colleges in chemistry, physics, and biology appear particularly unsatisfactory to the governing body of the medical profession.

At To-day's Drug Auctions large quantities of goods were catalogued; in the majority of cases, however, sales were only made when items were offered cheaply. A fair quantity of ipecacuanha was disposed of at lower prices. Cardamoms were slightly dearer. Oil of Peppermint, H.G.H., was sold without reserve at a little below the market price. The general market in drugs and chemicals remains dull, and there are hardly any changes to record. Opium is very firm, and Quinine is slightly higher.

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LIABILITY TO MEDICINE STAMP DUTY.

The decision arrived at by the General Purposes Committee of the Council of the Pharmaceutical Society, not to approach the Inland Revenue authorities at the present juncture, appears to have been received favourably by chemists and druggists generally. There is a growing feeling that—as Mr. Carteighe stated at the last meeting of the Council—the Medicine Stamp Acts, as administered by the Board of Inland Revenue, have proved beneficial to chemists and druggists from the trade point of view. It may be added that the trade benefit is not likely to be diminished by the Board's change in practice consequent upon the decision in the case of Ransom *v.* Sanguinetti, while the professional position of chemists and druggists is greatly strengthened by the judicial recognition of the fact that the Statutes make a clear distinction between persons qualified by education to sell medicines and unqualified persons, or those who are simply authorised by licence to do so. In the opinion of the Inland Revenue authorities, compounded non-secret medicines, sold under names which express or imply a recommendation, may now be supplied unstamped by chemists and druggists, but not by limited companies or unqualified individuals, even though they hold medicine licences. If, however, chemists and druggists desire to make the composition of any medicines sold by them a matter of mystery, they must be prepared to stamp them as nostrums or secret

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remedies, just as an unqualified seller has to do. In the case of articles labelled with such designations as "Cough Mixture," "Antibilious Pills," "Liver Pills," etc., a certain measure of inconvenience will unquestionably be caused to chemists who have been accustomed for many years past to regard such descriptions as not incurring liability to duty. The inconvenience, however, will probably be temporary only, the more especially as the number of compounded medicines which require, as a matter of public convenience, to be labelled with the name of an ailment or organ of the body is not very great. The main question which must be decided by chemists who do not wish to stamp articles so labelled is whether they will print the formulæ on the labels or indicate thereon where the formulæ are published. The latter plan will doubtless commend itself largely, especially in cases where the medicine contains some potent ingredient.

If, however, disclosure of the composition of the article be decided upon, it remains to be seen how full that disclosure need be; whether it will be sufficient (1) to mention by name on the label the principal active ingredient of the medicine, or (2) to give the names of all the ingredients, or (3) whether it will be necessary to print on the label the complete formula, including the exact quantity present of each ingredient. Inquiries on this point have been addressed to the Board of Inland Revenue. Meanwhile, it is instructive to note that the following label has recently been marked "not liable":—

> GELATIN COATED IRON PILLS (BLAUD).
> 5 grains.
>
> These pills contain the amount of Ferrous Carbonate required by the British Pharmacopœia.
>
> Dose.—One pill three times a day.

The acceptance of this label by the Board of Inland Revenue is interesting, as indicating that considerable latitude will be allowed; but more definite information on the subject is to be desired, and will doubtless be forthcoming shortly. The question has also been asked, "Will medicines dispensed from physicians' prescriptions be affected?" At first sight the answer might appear to be a decided negative, but consideration of a letter from the Inland Revenue shows that here again several doubts are likely to arise. The Board of Inland Revenue has now expressly stated that it will regard as liable to medicine stamp duty any preparation compounded according to a physician's prescription, if any words implying a "recommendation" be used on the label. It is, of course, the exception rather than the rule for any mention of an ailment to appear on the label of a dispensed medicine, but such phrases as "When the cough is troublesome," are not uncommon. To hold that such words when used for a preparation dispensed according to a formula which is the private property of the patient—a formula which is merely lent to the chemist for the purpose of dispensing—imply that the chemist claims a proprietary right, or that the medicine should be classed with secret "nostrums," seems indeed a *reductio ad absurdum*.

The contention also appears to be as untenable as it is absurd. The invariable practice of the pharmacist when a patient brings a prescription to be dispensed is to stamp the latter with a reference number and to quote that number on the label. Surely His Majesty's judges would adopt the reasonable "common-sense" view that such a prescription number is actually "a reference on the label" to the formula, and that no liability to duty is incurred. Of course the formula would not be in a "well-known book of reference." That phrase, however, is not contained in any Act of Parliament, but is an arbitrarily invented product of the Solicitors' Department at Somerset House. Where the patient neither possesses nor sees the prescription, as when the physician supplies the medicine, or where a special arrangement exists whereby the prescription goes direct to the chemist from the prescriber, the contention of the Board may have more force. But the difficulty could in any case be solved by omitting any words referring to an ailment. It would, however, be well if the Board could realise, even though the assistance of a "test case" had to be invoked, the untenable nature of its position with regard to ordinary dispensing. The effect would be to encourage more than ever the highest form of pharmaceutical practice, and to strike one more blow at the entirely secret and not very dignified arrangements under which some medical men receive a profit on medicines dispensed for their patients.

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JOHN BARCLAY.

One of the most prominent of the younger scientific pharmacists of Great Britain passed away suddenly on Sunday last, in the person of John Barclay. The eldest son of Mr. Thomas Barclay, a pharmacist well known in the Midlands, John Barclay, in the course of a pharmaceutical career which has now been abruptly terminated, did much valuable work in the profession to which his natural ability and hereditary aptitude were devoted. His education, commenced at King Edward's School, Birmingham, was continued under the late Dr. Moulton, at the Leys School, Cambridge. He afterwards entered Mason College, where he graduated, and obtained from London University the degree of Bachelor of Science. In 1890 he became a pharmaceutical chemist. He was author of the last edition of 'Southall's Organic Materia Medica,' which is largely used as a text-book by students. His original investigations on standardisation and allied subjects have been very numerous, and of considerable importance in promoting the advancement of pharmacy. He was some time Professor of Materia Medica at Mason College—indeed, he founded that department, and after the establishment of the University he held the appointment of extra-Mural Examiner in Materia Medica. For many years past he has been one of the managing directors of Southall Bros. and Barclay, Ltd., and he took special charge of the various laboratories of the company, both manufacturing and analytical. He was greatly beloved by the whole of the staff and workpeople, and his loss will be keenly felt, not only by them, but by the pharmacists of Birmingham, as he took a deep interest in local pharmaceutical affairs, and quite recently held the position of President of the Midland Pharmaceutical Association. At a meeting of that Association held on Tuesday night, a vote of condolence with Mr. Barclay's widow was unanimously passed, on the motion of the President, seconded by the senior Vice-President. For some months Mr. **Barclay**'s health had not been of the best, but the end came suddenly, death being caused by an accidental fall while on a climbing expedition in Switzerland.

RADIUM AND HELIUM.

Speaking at the annual dinner of the Society of Chemical Industry, held in Bradford last week, Sir **William Ramsay**, the new President, said that an examination had been made of the emanation given off from radium. That emanation had the power at first to discharge an electroscope, but it gradually diminished and finally, after about a month, was lost altogether, and there was apparently nothing left. The result of the examination of the emanation was to show the whole spectrum of helium. It was impossible to forecast what that implied. The radium from which the emanation was obtained might hardly be supposed to retain helium, but there was no doubt about the production of helium continually from radium. It was, however, useless to speculate further on such subjects, and it would be better to mature ideas before indulging in conjecture.

Subsequently the *Times* announced that a paper bearing in a remarkable way on the connection between helium and radium had been received for publication by the Royal Society, from Sir **William** and Lady **Huggins**. Prompted by theoretical ideas, they have attacked the problem of the spectroscopic analysis of the light emitted directly by a radium salt at ordinary temperatures. Preliminary visual observation seemed to show traces of bright lines in a continuous spectrum. Preparations were accordingly made for photographic record by means of a small quartz spectroscope constructed some years ago for use on very faint celestial objects. After several trials, a spectrum, consisting of eight definite bright lines in the ultra-violet, entirely different from the spark spectrum of radium, and some faint lines together with a very faint continuous spectrum, was obtained by seventy-two hours' exposure to the glow. The lines were of some breadth, on account of the wide slit that had to be employed in order to admit sufficient light; but it was found possible to measure their wave lengths within an error of two in the fourth figure. On a comparison of this spectrum, so different in type from an ordinary phosphorescent spectrum, with the recorded measurements for helium, it appeared at once that four, and perhaps five, of the eight lines agreed with lines of helium within the uncertainty of the measurements. Another line, that of highest refrangibility, agrees with a line in the spark spectrum of radium itself, which, however, has not been recorded by other observers; the two other lines, the lowest, have not yet been traced. It will be remembered that last year Professor **Rutherford** produced striking evidence for the view that, in the very slow break-up of radium that is concomitant with its radio-activity, the inert gas helium is one of the products formed. If, as the present observations indicate, the radium salt shines spontaneously in the dark largely by light belonging to the different element helium, another important step is gained in elucidating the nature of the instability of such chemical elements of high atomic weight and the radio-activity associated with it.

The industrial possibilities of radium also continue to be the subject of speculation. Rumours are current of cancer and blindness cured by its agency. Its application for illuminating and heating purposes would be perfectly practical if the supply of radium were more abundant than it is at present. The further conceivable possibilities of the element in the industrial world, which might result from a considerable extension of scientific knowledge from a vastly greater supply of radium, and from a concentration of the output of energy which now is being dissipated over several centuries into the space of time represented by a few days, include nothing less than a revolution in all known methods of locomotion and general mechanics. For the present, it must be confessed, science holds out scant prospects of such dreams being realised. But none the less will the researches of **Curie**, **Ramsay**, **Huggins**, and the rest be followed with the keenest interest in the scientific world.

THE PHARMACY BILL.

The forthcoming election at Barnard Castle has inspired Mr. T. B. **Illsley**, M.P.S., to write to each of the candidates, directing their attention to the Pharmacy Bill, and it is gratifying to learn that favourable replies have been received from all. Lieut.-Col. **Vane** states that he is in sympathy with the principles of the Bill. Mr. **Beaumont** promises, if elected, to support it in the House of Commons, and Mr. **Henderson** also expresses sympathy with the main proposals of the measure, which he undertakes to support. Mr. **Illsley** is to be congratulated upon the satisfactory responses which his letters have elicited, and, in view of the probability that there may be a general election next year, other chemists in Great Britain should note what it is possible to do in the way of securing the support of candidates for Parliamentary honours. According to Wednesday's *Times*, the anticipation in official quarters is that the present Parliament will be dissolved early next Session, and that the general election will take place in the month of March.

LINCOLNSHIRE AND THE "POISONS" CAMPAIGN.

There is probably no more typically agricultural county in Great Britain than Lincolnshire and, of the numerous districts which have steadfastly refused to have any dealings with the "Traders in Poisonous Compounds, etc., Protection Society," Lincolnshire is one of the most conspicuous. The contempt with which the Lincolnshire Chamber of Agriculture, and the Grimsby Chamber of Commerce treated Mr. **Dobbs**' suggested resolution, has already been chronicled. It would now seem that, so far as Lincolnshire is concerned, Mr. **Dobbs** has been obliged to cry, "*Jam satis.*" Mr. J. T. **Birkbeck**, Divisional Secretary of the Pharmaceutical Society for Lincoln, has been on the alert, and writes to say that Mr. **Dobbs** was nowhere in evidence in regard to the Lincolnshire Agricultural Show, held last week. Further, the Lincoln Chamber of Commerce has had no communication from the creator of the "spontaneous demand of numerous public bodies to break down the chemists' monopoly." The Chamber of Commerce, however, is fully convinced that any relaxation of the laws relating to the sale of poisons would be inadvisable.

LIEBIG AND AGRICULTURAL CHEMISTRY IN GERMANY.

Dr. Frederic Rose, His Majesty's Consul at Stuttgart, has frequently furnished to the British Foreign Office reports that have dealt in some detail with technical instruction in Germany. In a report just issued the same officer discusses the methods of agricultural instruction in Germany and the development of German agricultural industries. Almost exactly a hundred years have elapsed since Thaer founded the first farming academy at Celle in 1802, and since the birth of Justus von Liebig in the following year. Dr. Rose remarks that a review of the results of the work which they initiated is particularly interesting because chemistry, the youngest science of their day, was summoned to the aid of the oldest of all human occupations—the tilling of the soil. By opening, in 1827, a public chemical laboratory at Giessen, Liebig practically laid the foundation of chemical and especially of agricultural science in Germany. In his important work, published in 1840, on the "Application of Organic Chemistry to Agriculture and Physiology," Liebig revolutionised agriculture, indicated the new methods to be pursued in the future, and propounded for the first time the theory of artificial manures. His patent for an artificial potash manure resulted in the working of the Stassfurt and Anhalt salt strata, in an enormous and increasing quantity of exported kainite and other potassium salts, and in the very successful cultivation of beetroot for the extraction of sugar. His investigation on nitrogen compounds have principally contributed to the working of the Chilian saltpetre deposits, the imports of Chili saltpetre into Germany having risen from 6,700 tons in 1860 to 513,034 tons in 1899. The discovery of the application of calcium superphosphate to agricultural purposes is equally due to Liebig, the production of this salt in Germany having risen from 1,000 tons in 1867 to 750,000 tons in 1899. Dr. Rose alludes also to the discovery announced at the International Congress of Applied Chemistry of a means of utilising the free nitrogen of the air for agricultural purposes. Drs. Caro and Frank, of Berlin, have found that certain metallic carbides, notably barium and calcium carbide, are able to absorb nitrogen from the air, and to form therewith certain compounds which can readily be converted into potassium cyanide and cyanamide. Cyanide nitrogen seems almost equivalent in its action on plants to nitrogen from ammonium salts and saltpetre. If the discovery proves to be of practical value, one effect will be to relieve Germany of the necessity of spending £8,000,000 on her imports of Chili saltpetre.

STANDARD FUNGICIDES AND INSECTICIDES.

The standardisation of all classes of medicines sold for human consumption has of late years been recognised, to a greater or less extent, as a matter of considerable importance. Up to the present time, however, little attempt seems to have been made to secure uniformity or high quality in the numerous compounds sold as fungicides or insecticides for use in agriculture. The difficulties of the agent and the purchaser of such commodities have been increased by the vague, misleading, and unscientific nomenclature by which the manufacturer too often teaches the farmer to speak of his goods. In a book recently issued entitled ‘Standard Fungicides and Insecticides in Agriculture,’ Part I. (Spottiswoode and Co., 1s. 6d.), Mr. G. F. Strawson, M.P.S., has sought to remedy the evil. In a supplementary volume, Mr. Strawson proposes to give details of the practical application of fungicides, etc., the book under notice confining itself to a description of several of the most commonly used preparations. The author sets his face sternly against the "popular" nomenclature to which reference has been made, and proceeds to give, in a popular form, the composition of a number of spray fluids. In spite of a few obvious misprints, such as "NaOHO" as the formula for caustic soda, the booklet serves a very useful purpose, and is sufficient refutation of the theory which has been advanced that pharmacists are incapable of giving expert advice on agricultural matters. Mr. Strawson suggests the formation of an organisation to receive scientific and practical contributions, and to pursue inquiries with regard to various maladies affecting crops.

HUMAN AND BOVINE TUBERCULOSIS.

The Berlin correspondent of the *Times* reports that at a recent meeting of the Berlin Medical Society, two interesting papers were read on the susceptibility of animals to bacilli and tuberculosis taken from human subjects. Professor Kossel treated the question from the point of view of the Imperial Department of Health, which follows Professor Koch in maintaining that tuberculosis cannot be communicated by animals to men or men to animals. Professor Kossel said that out of all the experiments conducted by the Imperial Department of Health, human bacilli had in two cases only affected the animals under experiment. On the other hand, Professor Orth, the successor of Professor Virchow in the Chair of Pathological Anatomy in the University of Berlin, showed that in 10 per cent. of the experiments conducted under his supervision bacilli taken from the human body produced progressive tuberculosis in calves, and that where the injection was intravenous death followed in a few weeks. Professor Orth also referred to some further cases in which subcutaneous injections of human tuberculosis matter had produced marked symptoms of tuberculosis in calves. The followers of Professor Koch contended that in the fatal cases mentioned by Professor Orth the disease communicated might have been bovine and not human tuberculosis. Professor Orth, in reply, urged that from the point of view of public hygiene it was immaterial whether a disease which could be transferred from men to animals with fatal results was described as human or bovine tuberculosis.

THE CONFERENCE AT BRISTOL.

We are requested to announce that further applications for tickets, in connection with the meeting of the British Pharmaceutical Conference next week, should be sent at once to Mr. H. E. Boorne, 49, Woodstock Road, Redland Green, Bristol. Acceptances of the invitation to meet the Lord Mayor of Bristol on Monday evening next should also be addressed to Mr. Boorne. Four additional papers for the Bristol meeting are announced this week (see p. 113), but the seventh one in the list already published (see p. 55) will not be read. Authors who require reprints of their papers are requested to notice that they must communicate with the Editor before publication or they cannot be supplied.

THE ASSAY AND IDENTIFICATION OF POWDERED IPECACUANHA.*

BY A. G. C. PATERSON,

E. Northway Butt Scholar.

Experiment with Cephaeline Alone—Solubility of Emetine in Alkali—Separation of the Mixed Alkaloids—Separation of the Alkaloids from the Alkaloidal Residues—Determination and Separation of the Alkaloids in Powdered Ipecacuanha.

Experiment with Cephaeline Alone.

An experiment was then conducted on cephaeline to determine the amount of alkaloid extracted by ether from a solution in caustic alkali. 0·09 Gm. of cephaeline was taken, dissolved, and 1·5 C.c. of normal potash solution added. This solution was then washed with ether, 10 C.c., 10 C.c., 10 C.c., 5 C.c. The ether continued to extract alkaloid, and presumably would do so indefinitely; the washing was therefore discontinued, and the mixed ethers were washed thrice with N/10 potash solution, the third washing giving no alkaloidal reaction with Mayer's reagent. The ethereal mother liquor, which should theoretically contain no alkaloid, yielded on evaporation 0·0105 Gm. of alkaloid. To the mixed alkaline washings, which should contain the cephaeline removed from the ether, excess of ammonium chloride was added and the alkaloid extracted with ether. On evaporation, the ethereal solution yielded 0·012 Gm. of alkaloid. From the original alkaline solution of cephaeline, ether had extracted 0·0225 Gm. of alkaloid, of which 0·012 Gm. was recovered from it by potash.

The original alkaline mother liquor was treated with excess of ammonium chloride and the alkaloid extracted with ether, which removed the last traces with difficulty. The ether, by titration, after evaporating yielded 0·0615 Gm. of cephaeline. This and all succeeding titrations were conducted according to Bird's method, using methyl-orange as indicator.

The table appended gives the amounts and percentages of the alkaloid recovered:—

(1) From ethereal solution	0·0105 Gm.	=	11·6 per cent.
(2) From first alkaline solution	0·0615 Gm.	=	68·4 per cent.
(3) From second alkaline solution (washings)	0·012 Gm.	=	12·3 per cent.
	0·084 Gm.	=	92·3 per cent.

The loss of 0·006 Gm. of alkaloid is accounted for by the numerous testings in this experiment and the traces retained by the original alkaline solution. This experiment shows that even in the presence of caustic alkali cephaeline is appreciably soluble in ether.

Solubility of Emetine in Alkali.

Emetine hydrochloride was then treated in a similar manner to ascertain the amount taken from ether by caustic alkali. 0·2135 Gm. of emetine was dissolved in water and excess (2 C.c.) of normal potash solution added. The heavy white precipitate formed was dissolved by four successive quantities of ether, 10 C.c. each, the mother liquor then retaining very slight traces of alkaloid.

The ethereal solutions were mixed and washed with 10 C.c. of N/10 potash solution, which extracted a considerable amount of alkaloid. A second washing with 10 C.c. of N/20 potash solution removed an appreciable amount of alkaloid. The ether solution, being evaporated and titrated, was found to contain 0·191 Gm. of emetine. The alkaline solutions were mixed and washed with two successive quantities of ether, 10 C.c. each, which extracted practically all the alkaloid present The weight of alkaloid thus extracted was 0·015 Gm. A table arranged as in the case of cephaeline gives the result:—

Alkaloid in			
(1) Ethereal solution	0·191 Gm.	=	89·5 per cent.
(2) Original alkaline solution	0·0 Gm.	=	0 per cent.
(3) Second alkaline solution (washings)	0·015 Gm.	=	7·02 per cent.
	0·206 Gm.	=	96·5 per cent.

Loss of alkaloid by testing, etc., is 3·5 per cent., or 0·007 Gm. Comparing the results obtained when experimenting with the alkaloids separately, the appended table is compiled, locating the alkaloids in the various solutions:—

	Emetine.		Cephaeline.
Ethereal solution contains	89·5 per cent.	..	11·6 per cent.
Original alkaline solution retains	0 per cent.	..	68·4 per cent.
Second alkaline solution (washings) contains	7 per cent.	..	12·3 per cent.
Loss of alkaloid by testing, etc.	3·5 per cent.	..	7·7 per cent.
	100·0 per cent.	..	100·0 per cent.

In other words, when working with emetine alone, 7 per cent. of the alkaloid would be weighed as cephaeline, and when working with cephaeline alone 11·6 per cent. would be weighed as emetine. The following method of separation was therefore devised, it being thought that the gain of cephaeline in the first ethereal solution would practically balance the loss of emetine at that stage, and similarly the loss of cephaeline from the alkaline solutions would be balanced by the gain of emetine in those solutions.

Separation of the Mixed Alkaloids.

Dissolve the alkaloids in N/10 hydrochloric acid, add excess of N/10 potash solution and wash four times with ether, 10 C.c., 10 C.c., 5 C.c., 5 C.c. Mix the ethereal solutions and wash three times with N/20 potash solution, 10 C.c., 5 C.c., 5 C.c. Mix the N/20 potash solutions and wash once with 10 C.c. of ether. Then mix the ethereal solutions, evaporate, and titrate the residue as emetine. Next mix all the potash solutions and acidify with hydrochloric acid, add excess of ammonia and extract the alkaloids with ether. Evaporate the ethereal solutions and titrate the residue as cephaeline. An experiment was made upon the alkaloids mixed in the proportions found in Brazilian root. The above details were followed precisely.

	Placed in Solution.		Recovered.
Emetine	0·1207 Gm.	....	0·119 Gm.
Cephaeline	0·0437 Gm.	....	0·0447 Gm.
Total	0·1644 Gm.	....	0·1637 Gm.

No testing for alkaloid was done at any stage of the experiment, with the exception of one test made upon the ammoniated mother liquor when it was thought to be exhausted.

A similar experiment was then conducted on larger quantities of the alkaloids, 0·2936 Gm. emetine and 0·1124 Gm. of cephaeline being taken. In this separation the method, numbers of washings, strengths of solutions used were the same as in the previous experiment, but the quantities were slightly increased in consequence of dealing with larger amounts of alkaloids. In this case the amounts of alkaloids in the two ethereal solutions were determined separately, and also the amounts in the two alkaline aqueous solutions. The results were as follows:—

Emetine.	By Weight.		By Titration. (factor 0·0248).
1st Ethereal solution	0·282 Gm.	....	0·2852 Gm.
2nd Ethereal solution	0·01 Gm.	....	0·01 Gm.
Total	0·292 Gm.	....	0·2952 Gm.
Cephaeline.	**By Weight.**		**By Titration (factor 0·0234).**
1st Alkaline solution	0·109 Gm.	....	0·109 Gm.
2nd Alkaline solution	0·011 Gm.	....	—
Total	0·12 Gm.	....	0·109 Gm.
Total alkaloid used	0·406 Gm.	....	0·406 Gm.
Total alkaloid recovered	0·412 Gm.	....	0·4042 Gm.
Difference	0·006 Gm.	....	0·0018 Gm.

The discrepancy between the weight of emetine and the titration value is apparent rather than real, owing to the use of the high factor for pure emetine, when the alkaloid was doubtless a mixture. The same reason is applicable to the small weight of cephaeline by tiration owing to the small factor for pure cephaeline being used.

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* Communication from the Pharmacy Research Laboratory of the Pharmaceutical Society. Concluded from page 75.

Having obtained satisfactory results with the alkaloidal salts, it remained to ascertain the efficacy of the process when applied to the alkaloids obtained direct from the root in an ordinary assay.

Separation of the Alkaloids from the Alkaloidal Residues.

The alkaloid from 20 Gm. of Rio root was extracted with acid from a percolate of Bird's menstruum, and the acid aqueous solution made up to 100 C.c. with water. Of this solution one-fifth was taken, and from it, when made alkaline, the alkaloid was extracted with heavy ether-chloroform (1 to 6). The amount of alkaloid extracted was 0·0927 Gm. by titration, or 2·318 per cent. of total alkaloids. The remaining 80 C.c. of solution were treated by the separation process already described, and the alkaloids obtained were determined volumetrically. The amounts of alkaloid obtained from 16 Gm. of drug were:—

Emetine	0·2777 Gm.	or	1·736 per cent.
Cephaeline	0·0865 Gm.	or	0·541 per cent.
Total	0·3642 Gm.	or	2·277 per cent.

Total percentage of unseparated alkaloid 2·318 per cent. Error 0·041 per cent.

The same process was applied to 20 Gm. of genuine Cartagena root, with the following results:—

Emetine from 16 Gm.	0·1557 Gm.	or	0·97 per cent.
Cephaeline from 16 Gm.	0·1333 Gm.	or	0·83 per cent.
Total separated alkaloids ..	0·289 Gm.	or	1·8 per cent.
Total alkaloid from 4 Gm. .	0 0704 Gm.	or	1·76 per cent.
Error			0·04 per cent.

On account of the low figures for total alkaloid, the same drug was assayed by Frerich's method as a check, and the percentage of total alkaloid found to be 1·82.

Percentages of Emetine and Cephaeline.

The percentages of emetine and cephaeline in the total alkaloid of Rio ipecacuanha as the results of two determinations were:—

			Paul and Cowley's Figures.
Emetine ....(1)	78 per cent.	(2) 77 per cent.	72 per cent.
Cephaeline ......(1)	22 per cent.	(2) 23 per cent.	26 per cent.

The percentage amounts in the alkaloid from the sample of Cartagena root assayed were:—

			Paul and Cowley's Figures.
Emetine.....................	54 per cent.	..	40·5 per cent.
Cephaeline..................	46 per cent.	..	56·8 per cent.

The figures obtained in my experiments agree within reasonable limits with those published by Paul and Cownley, after making allowance for the difference of samples investigated. Since the quantity of total alkaloid and the quantities of each of the two principal ones present can be determined with sufficient accuracy, the third alkaloid, psychotrine, which is present in minute quantity only (0·04 per cent.) may for practical purposes be ignored.

Determination and Separation of the Alkaloids in Powdered Ipecacuanha.

The separation of the alkaloids being possible, the subject of a suitable assay process may now be discussed. The separation process has been accurately conducted on 0·1644 Gm. of mixed alkaloids, and an assay process giving the alkaloids from 10 Gm. of root (about 0·25 Gm. alkaloid) would be economically satisfactory. An accurate, quick, and easy method of obtaining this amount of alkaloid is therefore required.

A quick method is specially desirable, as, if a slow method were adopted, the length of time covering both assay and separation processes would be very considerable, and this should be avoided. By an easy method is meant one which will not require too much attention while in operation. I would suggest that a method embodying all these requirements is to be found in an aliquot part process. The difference in results from those obtained by total exhaustion methods is so slight as to be well within the possibilities of personal error, and therefore its accuracy is well established. The rapidity and ease of such a process are manifest.

The following method is suggested:—

12 Gm. of powdered ipecacuanha root.

10 C.c. of ammonia solution (or 10 C.c. of sodium carbonate solution, 1 in 3).

120 Gm. (or C.c.) menstruum; chloroform, 1 part; amyl alcohol, 1 part, ether, 3 parts.

Agitate in a stoppered bottle during one hour, then add water (10 to 15 C.c.) to aggregate the powder. The amount will be variable, owing to various degrees of fineness of powder. Next separate 100 Gm. (or C.c.) of the ethereal liquid and evaporate to one-half if ammonia has been used. Extract the alkaloids with (1) 15 C.c. (or excess) of N/10 hydrochloric acid; (2) water 5 C.c.; (3) 5 C.c.; (4) 5 C.c.[6] Add excess of normal potash solution (about 2 C.c.) and wash four times with ether 15 C.c., 10 C.c., 10 C.c., 5 C.c., reserving both aqueous and ethereal layers. Mix the ethereal solutions and wash three times with N/20 potash solution, 10 C.c., 5 C.c., 5 C.c. Then mix the N/20 potash solutions and wash once with ether, 10 C.c. Next mix all the ethereal solutions, evaporate, weigh the residue or titrate as emetine (1 C.c. N/10 acid = 0·0248 Gm. emetine). Finally mix the aqueous solutions, acidify with hydrochloric acid, make alkaline with ammonia, and extract the alkaloid with heavy ether-chloroform (1 to 6) 20 C.c., 10 C.c., 10 C.c., 5 C.c., or till all the alkaloid is extracted. Evaporate and weigh, or titrate the residue as cephaeline (factor 0·0234).

The titrations can be satisfactorily conducted by Bird's method, using methyl-orange as indicator. Ether-chloroform was found to extract the cephaeline more rapidly than ether alone, and therefore replaces the ether used in previous experiments at that stage of the process.

I cannot conclude this paper without expressing my best thanks to Professor Greenish for his constant direction of the work herein described, and for the many suggestions he has made.

A RAPID METHOD OF REMOVING INK STAINS.

BY GRAHAM BOTT.

Scarcely any of the several methods for eradicating ink stains can truly be termed rapid or yield perfectly satisfactory results, many agents accomplishing much more than is required—namely, the partial destruction, or, at least, the damaging of the article treated. The following method has been adopted by the writer after repeated experiments, and, so far as he is aware, it is a new, if simple, process. The material requiring treatment should first be soaked in clean warm water, the superfluous moisture removed, and the fabric spread over a clean cloth. Now allow a few minims of liquor ammoniæ fortis, s.g. 0·891, to drop on to the ink spot, then saturate a tiny tuft of absorbent cotton-wool with acidum phosphoricum dilutum, B.P., and apply repeatedly and with firm pressure over the stain; repeat the procedure two or three times, and finally rinse well in warm water, afterwards drying in the sun, when every trace of ink will have vanished. By other methods some considerable difficulty is often experienced even in removing parts of the stain when it is not of recent origin, but the above method is equally reliable both for old and fresh ink stains, is rapid in action, perfect in results, and, moreover, will not injure the most delicate fabric.

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[6] A useful check can be obtained by determining the total alkaloid in an aliquot portion of the acid liquid.

PHARMACY IN RUSSIA (2).

BY A RUSSIAN PHARMACIST.

Business Hours—Official Inspection—Prescriptions—Arrangement of Pharmacies—Prescription Department—Distribution of Work—Compulsory Laboratories—Salaries and Pensions.

Business Hours.

A pharmacy, once opened in Russia, cannot be closed without a permission of the authorities, and must be managed in a way that a prescription might be obtainable at any time of the day and night, and the legal time for a prescription to be made up is one hour. As every pharmacy is required to dispense at any time, an inevitable thing for all are night duties of the pharmacists, which are taken by turns. The business time all over Russia is from eight o'clock in the morning till ten o'clock at night, but, as people are so used to get medicines at all hours, and at the same price, one is never able to close the pharmacy before eleven or half-past eleven at night; in very busy times often not before midnight. Generally, two pharmacists have night duties together, and so, in medium pharmacies, they have every fourth night duties, which is sometimes very hard when they are much disturbed. Night duties are from ten o'clock at night till eight o'clock in the morning, and after two to three hours' rest the pharmacist has to start another day's work.

Official Inspection.

Every pharmacy is under inspection of the local medical department, and is obliged to keep several official books, which are laced and sealed by the Government. These are: (1) The book for copying all prescriptions, containing columns for the number of the prescription, the date, the ingredients, the price, the name of the doctor, and the name of the patient; (2) the book for the registration of all poisons which are dispensed. There is also a book for retail sales of medicaments. For guidance and reference every pharmacy must have (1) the official Russian Pharmacopœia; (2) the official pharmaceutical tax (price-list).

Prescriptions.

The original of the doctor's prescription is not allowed to be returned, and must be kept at the pharmacy as a document during ten years, as well as the book in which all prescriptions are copied. The patient gets only a copy, on a special sort of label—white for internal use, and yellow, red, or green for external use, which label contains, besides the full copy of the prescription, the number, date, price according to the "official tax," and, if cheaper dispensed, this price also. This label is fixed on the box or tied round the bottle in a way that it might be easily removed, and, when presented at any pharmacy of the Russian Empire, has the same force as a doctor's prescription, except those containing poisons registered under the letters A and B in the pharmacopœia. The label of any medicine containing one of the preparations registered under A, and intended for internal and subcutaneous use must be signed by a doctor for every repetition. Labels of medicines containing preparations registered under the letter B are subject to the same rule as A if the prescribed quantity exceeds the highest dose of this preparation. The bottle, or box, or pot, etc., bears only a label, with the word "internal," "external," "subcutaneous," etc., which is stuck to it, as well as the number of the prescription. Now if a patient has lost the label, and only brings the empty bottle or box, etc., with the number on it, he can get the medicine again. To be able to know who made the prescription, and who examined and dispensed it, every assistant who made a prescription signs his name on the original and the senior, after examining the medicine, puts his name on the label, which is handed over to the public. The keeping of the original is very important for settling disputes between pharmacist and doctor after the prescription has been dispensed, as it is in the handwriting of the doctor, and can be used as evidence in case of the latter's mistake.

Arrangement of Pharmacies.

Every pharmacy is divided in two departments, viz., one for prescriptions, and one for retailing. In small and medium pharmacies these are generally in one room, and in some of them only at a separate counter. The goods of the retail business consist much of the same articles as in England, with the difference that patent medicines are not much sold, but instead of them large quantities of Pharmacopœia and similar preparations. These latter are so much in demand that the chemist is obliged to keep ready in bottles, boxes, pots, etc. (from five cop. up to thirty cop.), about thirty different tinctures, as valer. æth., chinæ, etc., about fifteen different kinds of ointment, as f.i. zinci, camphor, etc., plenty of herbs, roots, chemical preparations, etc., and all sorts of Pharmacopœia preparations. Chinin and natr. salicyl. are so much required that powders and capsules of the former must be kept ready of one, two, three, four, five grains and up to ten grains, and of the latter from five to twenty grains. To make all these things ready is the work of the apprentices in the first year of practice, under control of an assistant. In the retail department all mixtures or medicines which do not require the authority of a medical prescription are made. For the convenience of the pharmacist every preparation not allowed to be dispensed without a doctor's prescription is marked with a cross in the "official tax." Full details about pricing of prescriptions and retail sale can be found in the preface and "taxa laborum" of the "official tax."

Prescription Department.

The prescription department consists generally of a counter with desks, where prescriptions are received and handed over, and behind it, a little further away, separate tables for the assistants, where prescriptions are made up. To this department belongs a "coctorium," where decoctions and infusions are made, water distilled, glass washed, etc. The work is generally distributed in the following way:—We will take as an example of pharmacy dispensing an average of 150 prescriptions the day, requiring for that purpose a staff of eight to ten persons. The pharmacist who receives the prescription prices them immediately according to the "official tax," and gives to the customer a ticket, on which the number, price, name of the customer and doctor are written, as well as the time of acceptance and the time probably required for making it up. This ticket serves as a guarantee to the dispenser that the medicine has been handed over to the proper man, as servants often do not know the names of their masters. The pharmacist who receives the prescriptions has to copy them also on the special label, and to register them in order of the numbers. Sometimes he assists the other senior in examining the medicine made by the assistants, but generally his time is fully occupied. One pharmacist has only to examine the medicines made by the assistants, to finish them off—that means to cap the bottles, fix the label, and put his stamp or name upon it—and finally to hand over the medicines to the public on production of the ticket. These two pharmacists are the seniors, and only they, and perhaps one specially employed for retail business, have to deal with the public. The dispensers are generally separated from the public, and can thus pay full attention to the preparing of prescriptions. One dispenser makes generally an average of fifty prescriptions the day. He has to fix on the bottle, pot, etc., a label indicating if it is for internal, external, subcutaneous, etc., use, and to give the medicine to the senior, who tastes and examines it and questions the assistant on the method of manipulation, the quantities employed, etc. An assistant can hardly do more than fifty prescriptions a day, because not only powders, but also every liquid, even water, must be weighed, and every solution which should be clear must be filtered.

Compulsory Laboratories.

Besides the above departments, every pharmacy is bound by the law to have a laboratory provided with apparatus required for making Pharmacopœia preparations, a cool cellar, a room for drying and storing herbs, roots, etc., and some other compulsory stock-rooms. One pharmacist is generally occupied in the laboratory. Thus in a pharmacy of 150 prescriptions a day a staff of about eight pharmacists is required, of whom two are free every day by turns. Besides this staff of qualified pharmacists, there are one or two apprentices. To buy Pharmacopœia preparations from manufactories is allowed, but the proprietor of the pharmacy is alone responsible for their quality.

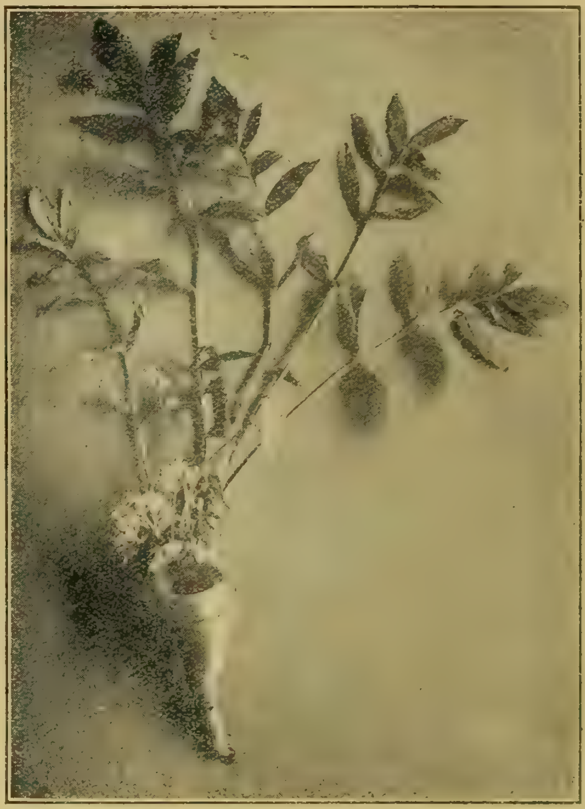
Salaries and Pensions.

The commencing salaries of pharmacists in the towns of Russia are for an assistant from £4 to £5, or for a provisor from £4 to £6 a month, in addition to full board and residence. An out-of-doors-system is now coming more into use and about £3 monthly is paid for board and lodging in larger towns. Afterwards the salaries increase according to the time spent in one place, to the turnover of the pharmacy, and to the position of the pharmacist in the establishment. The usual salary for a manager is about £7 to £10, but the larger the business the higher the salary of the superior clerks. In large pharmacies assistants remaining a long time gain often as much as a provisor. Apprentices generally get full board and residence and £1 monthly the first year, £1 10s. the second, and £2 the third, and in many pharmacies they get about £10 for the assistant's examination. Every pharmacist having a situation in a pharmacy is obliged to pay every month 5 per cent. of his salary to the Russian General Pension Fund in Moscow, and becomes thus a compulsory member. It is quite a new institution, and the first pension will be paid in about five years. The value of the pension will depend on the amount paid by the member to the Russian General Pension Fund. This institution has the character of a private society, the head of which is the president appointed by the annual meeting. The secretary is in Moscow, where the meetings are held, and it is under protection of the government. Proprietors of pharmacies are obliged to pay to this fund one-quarter of a copeck on every prescription, although personally they have no claim for a pension; they are also responsible for the regularity of the contributions of their clerks. Recently governors of all Russian towns have received instructions to assist in getting the compulsory contributions from persons unwilling to pay, of whom there are, unfortunately, a large number, the bulk of the delinquents being the proprietors. This assistance from the government has become necessary because the proportion of the fund allowed for secretarial and other office expenses is not sufficient to provide for legal action against those who refuse to pay.

Methyl Acetyl-Salicylate.—This is methyl salicylate in which a hydrogen atom is replaced by an acetyl radicle, the formula being therefore C_6H_4: $(OCOCH_3)_2$. It is a crystalline body melting at 48° C., odourless and insoluble in water. On boiling with water, or in contact with alkalies, it is decomposed, liberating methyl salicylate and acetic acid. It is prescribed by Huchard and Ambard in doses of 75 to 120 gr. per diem in such cases as require salicylates. It is stated to be free from unpleasant secondary effects.—*Répertoire* [3], **15**, 117.

ABNORMAL GROWTH OF VALERIAN.

The accompanying illustration represents an abnormal growth of *Valeriana officinalis*, a photograph of which has been sent by Mr. H. B. Rudd, Ph.C., Ripon. The vase-shaped expansion of the stem gave off the flower stalks from the upper lip and some of the leaves. This curious result is probably due to an originally well-nourished rhizome and roots having been bitten off by grazing cattle, or mutilated by some other means, when ready for sending up the usual shoots. The efforts made to produce leaves, flowers, and seeds under these conditions would account for the peculiar formation.



NOTES ON ECONOMIC BOTANY.

Congo Coffee.

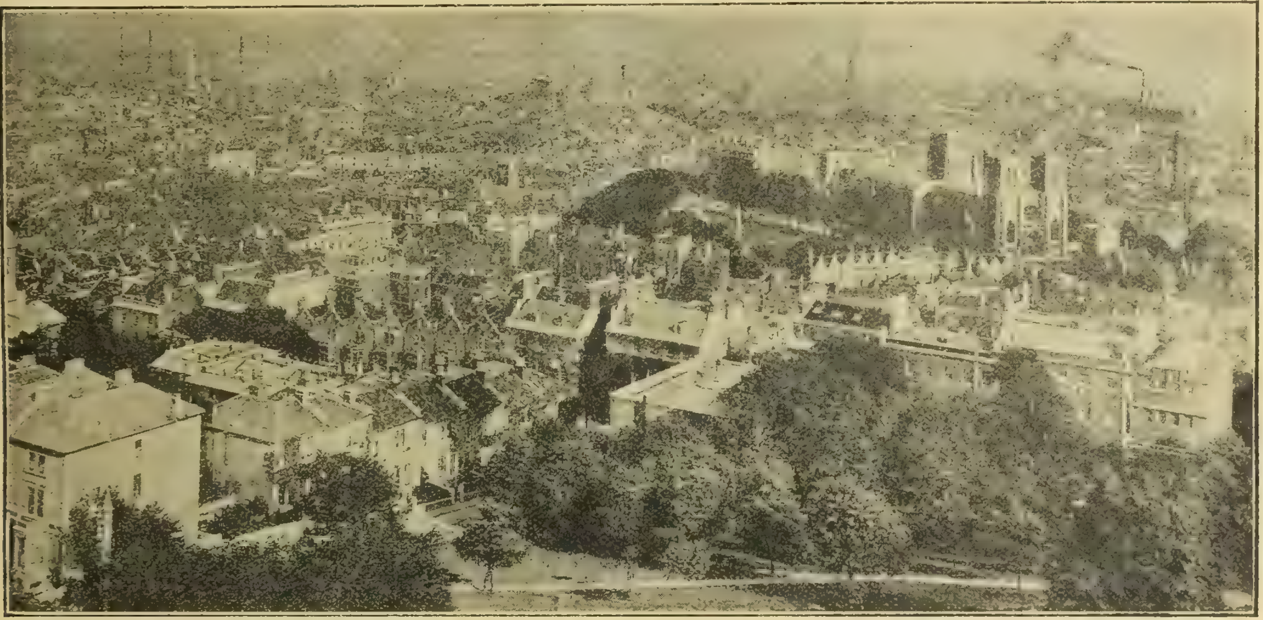
A new variety of coffee plant, known as *Coffea robusta* recently introduced from the Congo, has been experimented upon in Trinidad. It proves, according to J. H. Hart, to be very productive, and yields berries of excellent quality. For lowland cultivation it is likely to prove a first-class coffee tree.—*Agric. News*, ii., **29**, 166.

Funtumia Elastica.

No time has been lost in cultivating this African rubber tree in Trinidad. There are now trees there four and a-half years old and 30 feet high, seeding freely, and from these excellent rubber resembling that of Para has been obtained. It is much more easily grown and worked than the *Castilloa elastica*, which is so commonly used in Central America, trees of which of the same age yield a sticky and resinous unsaleable rubber. The milk of the *Funtumia* readily coagulates on boiling and contains less albuminoids than *Castilloa* and a higher percentage of rubber.—*Agric. News*, ii., **29**, 166.

THE CONFERENCE AT BRISTOL

1903



BIRD'S-EYE VIEW OF BRISTOL.

Pie-Poudre Court, Bristol.

Chairman of Local Committee,
B.P.C.

Mr. J. W. White,
President of the Bristol Pharmaceutical Association.

Steep Street, Bristol.

PLACES TO BE VISITED BY THE CONFERENCE.

THE ROYAL HOTEL.
HEADQUARTERS.

THE scene chosen for the Fortieth Annual Meeting of the British Pharmaceutical Conference is in the midst of picturesque and historical surroundings and within easy reach of some of the most interesting architectural relics in the country.

Bristol

is situated nearly eight miles inland from the Bristol Channel. The river Avon, which runs through the city, forms the division between Gloucestershire and Somersetshire. The city, however, belongs to neither province, for it was constituted a county in itself by a charter of Edward III. The population is considerably over 300,000, supported by a variety of trades and industries, of which perhaps the chief are tobacco and cocoa. It is said that Bristol, like Rome, stands on seven hills. The city is of great antiquity, and in 1069 its chief magistrate was Harding, the Dane; the Castle was seized in 1087 and held on behalf of William Rufus. This structure was entirely demolished by Cromwell. At this period Bristol was a great slave market, and in fact for centuries after this the pernicious traffic was continued. In fact, the town derived its early wealth from exporting slaves to Ireland; it took a large part in the war of Stephen's reign, and was besieged by the King. The first charter was granted by Henry II., who also gave Dublin to the men of Bristol. The first mayor was appointed in 1217.

ST. AUGUSTINE'S BRIDGE AND TRAMWAYS CENTRE.

It was from Bristol, it will be remembered, that John Cabot sailed at the end of the fifteenth century to the mainland of North America. In fact, at that time Bristol took a prominent part in discovery and colonisation. Bristol men colonised Newfoundland, attempted to colonise Maine, and established a large trade with the West Indies and American Colonies

Bristol has been the birthplace of many illustrious men, amongst whom might be mentioned Sir William Penn, Chatterton, the boy poet, Southey, and Bailey, the sculptor. Coleridge passed much time there in his early days. Burke represented the city in 1774. The city possesses many historic public buildings.

THE CATHEDRAL,

although one of the smallest in England, is of great historic interest. It is the most important among the public buildings, and will be visited with profit by all visitors to the Conference. It is open free to the public daily, and is situated in an open area shaded with lime trees, and close by is the "drawbridge." Its origin is interesting; more than seven and a-half centuries ago (about the year 1148), Robert Fitzharding, Lord of Berkeley, who died a monk in 1170, founded the Abbey of St. Augustine Black Canons, and it is on this site that the cathedral now stands; in fact, part of the original structure still remains. In the fifteenth century a portion of the edifice was rebuilt, but was not finished, the troubles of the Reformation having interfered with the completion of the plan, the nave was added in comparatively recent years. Among the list of notable bishops of this See are the names of Richard Fletcher (whose son was John Fletcher, the dramatist); Sir John Trelawney, one of "the seven bishops," and the famous author of the "Analogy," Joseph Butler.

BRISTOL CATHEDRAL.

The student of architecture will find much to interest him in the cathedral; specimens of all the different orders of Gothic architecture are to be found in the older portions of the building, whilst the transepts, the chapter-house, the gateways, etc., are beautiful examples of early Norman work. Among the numerous monuments to be seen in the north transept are those to Jane and Anna Maria Potter, the novelists; to Mrs. Draper, and to the Rev. John Eagles. There is a monument to Lady Hesketh, the friend of the poet Cowper, in the south transept, and close by there is one to Bishop Butler bearing an inscription by Southey, and another to Mrs. Crawford.

OTHER CHURCHES

worthy of special note are those of Saint Mary Redcliff, which, though not so old as the cathedral, is more imposing. This edifice stands on the site of a church which was erected in 1232; its present grandeur is largely due to the two William Canynges, grandfather and grandson, each of whom was several times mayor, the younger dying in 1474; the spire was completed in 1872. St. Mark's Church, known as the Mayor's Chapel, was part of a foundation by Maurice de Gaunt and Robert de Gournay in the early part of the thirteenth century, "for one chaplain and one hundred poor to be relieved every day"; St. Augustine's the Less, which dates from the year 1480; All Saints' Church, which also dates from the fifteenth century; St. James' Church, which was founded by Robert Earl of Gloucester, about the year 1140; St. Stephen's Church, which was built between 1450 and 1480, and has a famous tower erected in the style of the last Gothic school; and the Temple Church, which is situated on the south side of the Avon, was completed in the fifteenth century.

Clifton,

the picturesque suburb of Bristol, is mentioned in the Doomsday Book, and is built, so it is conjectured, on the site of a Roman station. It owes its celebrity to its mineral water, which is mentioned as early as 1480 by William of Wyrcestre. Clifton has a population of about 30,000, females predominating in the ratio of seventeen to eleven. In point of view of elegance, the buildings of Clifton compare well with any of the English watering-places. Unlike the ancient structures of Bristol, the buildings are all modern, and, therefore, are not of especial interest to students of archæology. The institution which most concerns visitors to the Conference is

Clifton Downs.

University College,

for it is in this building the sessions of Conference will be held, and it is here that Professor C. Lloyd Morgan, the Principal, will deliver an address of welcome. The university was founded in 1876. The building contains extensive laboratories and lecture-rooms, and portions have been set apart for mechanical workshops. Chemistry, physics, botany, and civil, mechanical, and electrical engineering, etc., occupy a prominent place in the teaching afforded by the college. The Bristol Medical School is affiliated to the college, and occupies a building in the grounds. The number of students numbers upwards of 700.

The Suspension Bridge

is the chief sight of Clifton, and all visitors should cross it. It spans a magnificent gorge, on each side of which rise white and red rocks. The bridge has a curious history. In the year 1783 an alderman of Bristol, William Dick by name and a wine merchant by trade, bequeathed £1,000 for the construction of a stone bridge, toll free, across the Avon. This sum, which was not sufficient for the purpose, was allowed to lie at interest, and in about eighty years it had increased to about £8,000. A public subscription was started. Parliament granted powers to use iron instead of stone, and the bridge, which was commenced in 1836, was not completed until 1864, a limited liability company intervening in the meantime and solving the monetary difficulty. A toll of 1d. each way is charged, but a provision in the Act restricts dividends to 7½ per cent., the surplus being applied to the redemption of the shares, with the view of making the bridge toll free.

Clifton Suspension Bridge.

Other attractions of Clifton include a Kurhaus, where baths of all varieties may be indulged in, and an observatory; whilst between Clifton and Durdham Downs are the Zoological Gardens, which contain a good collection of animals.

On Tuesday, July 28, a visit will be made to

Bath,

that ancient town, a lengthy description of which is not necessary here. A few details, however, will refresh the memory of those who have often read about it and perhaps visited it. A legend says that Bath was founded by Bladud, the father of King Lear. In his youth, so the story runs, Bladud became smitten with leprosy, and was driven from his father's house. During his exile he accepted employment as a swineherd; the animals under his care became infected with his disease, but recovered after wallowing in the mire formed by waters of hot springs. The swineherd himself noticed this, and he thought what was good for the pigs might also be beneficial to him. Accordingly he bathed in the waters, and he likewise was cleansed. His disease vanished, he returned to his father's house, and on the death of the latter, he ascended the throne and built a city on the spot to commemorate his marvellous recovery. This, of course, is only a legend, and nothing is definitely known of the history of the site of the city of Bath

The Speech House, Forest of Dean.

before the Roman period. The events subsequent to the reign of Claudius, during whose sovereignty the springs were first utilised, are carefully recorded in ancient histories. The ancient monuments and historic relics to be seen in Bath are too numerous even to mention, and intending visitors should procure one of the excellent guide books, covering the whole district, published by Messrs. Black or Messrs. Ward, Lock and Co.

On Thursday, July 30, Conference visitors will journey to Speech House, which is situated in the heart of

The Forest of Dean.

This glorious tract of country lies between the rivers Severn and Wye, and is the wildest and most picturesque part of Gloucestershire. The Forest is Crown property, and, as regards the mining and forestry, is under the jurisdiction of the constable of St. Briavel's Castle, as Lord Warden, with whom are associated six deputy-wardens, four verderers (elected by the freeholders), a conservator, seven woodwards, a chief forester and eight foresters-in-fee, a bow-bearer, and a steward of the swainmote. The meetings of this body are held in the Speech House. Many curious customs connected with the transfer of land exist in this wild part of the country.

On leaving Speech House, the party will proceed to

Tintern Abbey,

one of the most beautiful ruins in England. It is situated on the right bank of the river Wye, in Gloucestershire, about five miles to the north of Chepstow. In the early part of the twelfth century the abbey was founded for Cistercian monks, but the church was not built until a century later. It is, perhaps, unnecessary to remind readers of Wordsworth's connection with this romantic spot. One of his finest poems was composed within a few miles of Tintern Abbey. Students of architecture will again find here excellent examples of early English architecture.

Tintern Abbey.

The foregoing is only a brief *resumé* of the many noteworthy features of the places to be visited by those attending the Conference, but it will give some idea to intending visitors of the interesting district in which the Conference is to be held.

THE LOCAL COMMITTEE.

(Standing)—J. T GOOD, J. G. PLUMLEY, H. E. MATTHEWS, E. W. HILL, A. L. TAYLOR,
(Seated) —J CHANDLER, H. E. BOORNE, G. T. TURNER, J. W. WHITE (President), E. F. YOUNG, B. ALLEN.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Casein Emulsion of Cod-Liver Oil.

Casein emulsion is now, according to the *Giornale di Farmacia*, very popular in Italy. It is prepared thus. Precipitate the casein from one litre of milk in the usual manner, and dissolve it in a 5 per cent. solution of sodium carbonate in cherry laurel water, and 50 C.c. of water. The resulting solution, 200 C.c. in volume, is transferred to a capacious flask, and 500 Gm. of cod-liver oil is added. Simple syrup, 250 Gm., is next added, with enough water to produce 1,000 C.c. The whole is then thoroughly emulsified by agitation.—*Nat. Drugg.*, **33**, 102

Disguising the Bitter Taste of Quinine.

For administering quinine to young children, Borde employs a suspension of quinine in olive oil, made by rubbing down quinine sulphate, 1, with oil, 8, in a mortar. Twenty drops of this mixture, equivalent to ¾ grain of quinine sulphate, is poured into the centre of a tablespoon half full of sweetened milk. The dose is then taken. If a draught of fluid is then given, no bitter taste will be perceptible on the palate; even if no such drink be administered the bitter taste is only very slight and fugitive. The method has proved very useful in the administration of quinine to juveniles, who generally evince a strong repugnance to bitter medicines.—*L'Union Pharm.*, **44**, 223.

Solution of Peptonate of Iron and Manganese.

Jungclaussen has simplified the method of preparing this article as follows:—Peptone, 7 Gm., is dissolved in distilled water, 63 Gm., and poured into solution of dialysed iron (Ph.G.) 180 Gm., previously warmed on the water bath. Warming is continued until a perfectly clear solution is obtained. At the same time peptone, 18 Gm., is dissolved in distilled water, 162 Gm., and 10 per cent. solution of manganous chloride 37·5 Gm., also on the water bath. The warm solution of iron peptonate is gradually added, with constant stirring, to the manganese solution, heating is continued until a portion of the mixture, being withdrawn and mixed with 20 volumes of water, remains absolutely clear. The weight is then made up to 1,000 Gm. with distilled water. The solution then contains 0·6 per cent. of iron and 0·1 per cent. of manganese.—*Journ. Pharm. Chim.* [7], **17**, 63, after *Apoth. Zeit.*, **17**, 755.

Beeswax as an Excipient for Drugs for Intestinal Medication.

Although the coating with keratin of pills composed of drugs required for intestinal exhibition has doubtless given good results, Maurel calls attention to a simple manner of compounding them, which has not been without success, and has been tried for a long period. The method is due to Mondière, and consists simply of incorporating the active ingredient with melted yellow beeswax. For instance, cubebs and copaiba balsam may be administered in this manner without causing any unpleasant eructations. They are thus prescribed:—Yellow wax, 10; balsam of copaiba, 20; powdered cubebs, *q.s.* Melt the wax and copaiba together, and add sufficient powdered cubebs to give the consistence of a confection. It is taken when cold in the form of a bolus, in the prescribed dose. Ipecacuanha, senega, and senna have been successfully prescribed in the same manner; so has pancreatin, care being exercised, in the last case, that the temperature of the wax be not too high when adding the active ingredient.—*Bull. gén. de Thérap.*, **145**, 221.

Solid Polymeric Chloral.

If dry aluminium chloride be added to chloral, heat is evolved, and if the temperature of the mixture be kept between 30° and 40° C. it sets to a hard white solid. When washed with dilute acid, water, and, finally, alcohol, the product is found to have the same composition as chloral, and appears to be a polymer of that substance. It is almost tasteless, and has strong narcotic properties. When treated with cold alkaline solutions it dissolves, forming ordinary chloral hydrate, but is insoluble and not decomposed by dilute acids, water, or alcohol. —*Germ. Patent* 139,392; *Chem. Zeit*, 1903, 223.

Solubility of Iodine in Glycerin.

Catillon has shown, in a paper read before the Société de Thérapeutique, that iodine under certain conditions is much more soluble in glycerin than is generally supposed; the statement in the Codex that this solubility is 1 : 52 is quite incorrect. The author showed a solution of iodine in glycerin of the strength 1 : 3, and has obtained it 1 : 2. Mere maceration of iodine in glycerin does not give a satisfactory solution on account of the viscosity of the liquid. The iodine is dissolved in acetone or alcohol, the solution added to the glycerin, and the solvent evaporated off at a low temperature. Direct solution of iodine and glycerin (more probably combination?—Ed. *P.J.*) may be obtained by heating them together in a closed vessel to between 120° and 150° C.—*Bull. Comm.*, **31**, 87, after *Répertoire.*

Pharmacy of Colloidal Silver (Collargol).

Brocadet gives the following formulæ for preparing and prescribing collargol:—The following method of Danlos and Cothereau is advocated for the preparation of colloidal silver: Citric acid, 300, is dissolved in water, 2,000 C.c., and neutralised with ammonia; 558 of ammonio-ferrous sulphate is dissolved, separately, in a like amount of water. The solutions are mixed; into the mixture, a solution of silver nitrate, 60, in distilled water, 500, is poured, a little at a time, with constant stirring. The precipitated colloidal silver is allowed to settle, protected from air and light, collected, carefully washed and dried either over H_2SO_4 or in a drying cupboard at a temperature not exceeding 40°-50° C. As thus obtained it forms a black powder, consisting of minute particles having a metallic lustre. It contains 97 per cent. of silver with a trace of iron. It is soluble in 25 parts of water. From its aqueous solution it is precipitated in the form of ordinary metallic silver by acids and by most salts. *Ointment of Collargol.*—Colloidal silver, 15; lanoline, 35; benzoated lard, 50. Rub down the collargol with a little cold distilled water; it must not be triturated while dry before mixing with the excipient. *Collargol Solution for Intravenous Injection.*—Collargol silver, 1; sterilised distilled water, 100. Moisten the collargol with a little of the water, until the particles are softened, then complete solution with the prescribed amount of water. *Mixture for Internal Use.*—Collargol is prescribed either in solution or as a pill, in doses of 1 to 2 grains in twenty-four hours. The liquid may be prepared thus:—Colloidal silver, 1; fresh white of egg, 3; glycerin, 3; distilled water, 300. A teaspoonful to be taken three or four times a day, in a little milk, half an hour before meals. *Collargol Pills.*—Colloidal silver, 16 grains; lactose, 80 grains; distilled water, glycerin—of each *q.s.* to mass. Divide into 100 pills, of which four to six may be taken *per diem.* *Collargol Pessaries.*—Colloidal silver, 5 grains; distilled water, 1 drop; cacao butter, *q.s.* to make ten pessaries. *Injection of Collargol for Veterinary Use.*—Colloidal silver, 2; sterilised distilled water, 200. Used as an injection into the jugular vein in cases of infectious diseases. Dose (for horses or cattle), 25 C.c. to 50 C.c. of the above injection.—*L'Union Pharm.*, **44**, 1.

FEDERATION OF LOCAL PHARMACEUTICAL ASSOCIATIONS.

ANNUAL MEETING.

The annual meeting of the Federation of Local Pharmaceutical Associations will be held at the Royal Hotel, Bristol, on Friday next, July 31, at 9.45 a.m., punctually. Mr. W. L. Currie, Glasgow, will preside. The Executive Committee earnestly desires the co-operation of all in making the meeting a success. The business is important, and candid criticisms will be welcomed as tending to enhance the usefulness of the Federation; at the same time the courteous consideration of speakers is asked for in order that business may be effectively conducted, yet expeditiously despatched. Resolutions, etc., standing under the names of various associations, have been brought forward at the request of those associations. The Executive Committee reserve the right, as individual members, of free opinion in speaking and voting.

List of Affiliated Associations.

The following is a complete list of the federated associations, those indicated by a star (*) having become affiliated since the last annual report was published:—

Aberdeen.
*Aberdeenshire, East.
Barnsley.
Bradford.
Bristol.
Burnley.
Cambridge.
Cardiff.
Darwen.
Derby.
*Dover.
Edinburgh.
Exeter.
Forfarshire.
Glasgow.
Grimsby.
Halifax.
*Hartlepools.
Huddersfield.
*Kent, North.
Leamington.
*Leeds.
*Leicester.
Lincoln.
*London.
Manchester.
Midland.
Newcastle-on-Tyne.
Northampton.
Nottingham.
Oxford.
*Peterborough.
Plymouth.
Reading.
Sheffield.
Southport.
Staffordshire, North.
*Sussex, East.
Tunbridge Wells.
*West Ham.
Wolverhampton.
Workington.
Yarmouth.

Annual Report.

The following report will be presented at the meeting:—

"The Executive Committee have pleasure in presenting a short *résumé* of work accomplished in the name of the Federation during the year just closed. Matters pharmaceutical have been more than usually interesting. The issue of the report of the Departmental Committee on Poisons, and the introduction of a Pharmacy Bill into the House of Commons, together with the present agitation in connection with the stamping of articles of medicinal use, have each in turn kept local associations busy, and have furnished ample material for discussion at meetings, and for active work outside. A reprint of the report of last annual meeting containing the "test case" discussion was sent to all local associations, with a request that they should, in the light of that report, consider the advisability of affirming the resolution passed at that meeting. Responses to this request were almost unanimous in the opinion that it was not advisable to re-open the matter. The Executive Committee met twice (in London) during the year, all the members being present, and in addition, by frequent correspondence, have kept closely in touch with each other and with the work being done. Special attention, as in past years, has been devoted to

The Formation of New Associations,

the reconstruction of old and weakly bodies, and the general perfectment of local organisation, with a view to securing effective and concerted action when necessary. In furtherance of these aims, the Chairman visited Bradford; the Secretary, Huddersfield, Middlesbrough, West Hartlepool, etc.; whilst other members of the Committee have used their best endeavours to promote local activity in various ways. As an outcome of divisional meetings held by the Registrar of the Pharmaceutical Society, the Secretary has been enabled to effectively co-operate with Divisional Secretaries and others, with the result that a number of new associations have been formed, whilst several which were in a languishing condition have been resuscitated. Assistance given in this connection has been duly acknowledged by the officials of the Pharmaceutical Society, whilst the good work done by the Chairman of the Executive Committee has been recognised in the co-option of Mr. W. L. Currie to the vacant seat on the Council. The Executive Committee wish to place on record the gratification they feel at the attitude of the Society's Council and officials towards local associations, and hope that this attitude will be even more marked in the future. They are of opinion that the hands of the Council will be greatly strengthened by frank co-operation with local associations, more especially in matters in which it is desirable that the good offices of members of Parliament should be enlisted. Circulars have been sent out to local associations with reference to the education of members of Parliament in connection with the

Poisons Report and Pharmacy Bill,

and the Committee are satisfied that these circulars were of considerable value, as the results will show when these matters come up for consideration in the House of Commons. A letter sent out by the Secretary, previous to the Pharmaceutical Council election in May, asking local associations to meet and consider the important question of selection of candidates, and urging them to see that, as far as possible, members should record their votes, was productive of good results; over 500 more votes being recorded than at previous election. There was no special feature in connection with the election which would otherwise account for this increase. The Committee hope that on future occasions, when more time is available, the large percentage of non-voters may be considerably reduced. A circular sent out to local associations suggesting that at least once a year (in addition to any individual subscriptions) each association should, at a convenient social gathering, make a collection on behalf of the Benevolent Fund of the Pharmaceutical Society, met with very gratifying response, and the Treasurer of the Fund has stated that a considerable sum has been raised by these collections. Suggestions having been received from several sources, indicative of a wish to have the constitution and rules of the Federation placed on a wider basis, steps were taken to allow discussion of this, and as a result, several resolutions appear in another place for consideration. In one of these resolutions regret is expressed at the paucity of communications emanating from the Federation during the past two years. The Executive Committee beg to point out that the duty of initiating work rests with individual associations, and that the Federation is simply the organised medium of inter-communication between its constituent units. Ten additions to the list of federated associations have been made during the year, viz.:—Aberdeenshire (East), Dover, Hartlepools, Kent (North), Leeds, Leicester, London, Peterborough, Sussex (East), and West Ham, whilst several others, newly formed, are at present in correspondence with reference to affiliation. One association, Wrexham, has dropped out, the organisation being now extinct."

SOCIETY OF CHEMICAL INDUSTRY.

ANNUAL DINNER.

Thursday, July 16, 1903, at the Midland Hotel, Bradford, Mr. Ivan Levinstein in the chair. Among those present were:—The Mayor and Mayoress, Sir William Ramsay, K.C.B., F.R.S (President-elect), Dr. Edward Divers (Emeritus Professor of Chemistry at the University of Tokio, Japan), Professor Edward Hart (New York), Mr. E. K. Gray (President of the Institute of Electrical Engineers), Mr. Thomas Fairley (President of the Society of Public Analysts), Mr. B. C. Acton (New Zealand Department of Agriculture), Professor W. R. Lang (Chairman of the Canadian section), Mr. W. F. Reid (Chairman of the London section), Mr. J. E. Bedford (Chairman of the Yorkshire section), Mr. J. Carter Bell (Chairman of the Manchester section), Mr. F. Tate (Chairman of the Liverpool section), Dr. J. T. Dunn (Chairman of the Newcastle section), Mr. Thomas Tyrer, Mr. J. A. Godwin, Mr. Watson Smith, Mr. S. Hall (Treasurer), Mr. J. B. Moorhouse (Local Treasurer), Mr. Charles G. Cresswell (General Secretary), Mr. W. M. Gardner (Local Secretary), and many ladies.

In proposing the toast of

The Society of Chemical Industry,

the Mayor commented upon its rise and progress, pointing out that it now had no fewer than 4,000 members, compared with 300 twenty-one years ago. As to foreign competition, he thought we need not fear if we could only find out ways and means to capture our home trade. We had at home at our own doors sufficient trade to find employment for every citizen in the country.

The President, in his reply, spoke in terms of high appreciation of the hospitality which the visitors had enjoyed.

Sir William Ramsay proposed the toast of

Applied Science.

He said he had, along with Mr. Soddy, been examining the emanation given off by radium. It had at first the power of discharging an electroscope, but the power diminished, and after about a month was lost altogether. But the result of their examination was to show the whole spectrum of helium. It was impossible to see what that implied. It might be said that the radium from which they obtained this emanation was a radium which could hardly be supposed to be enhanced helium, but there was no doubt about the production of helium continuously from radium. It was useless to speculate further on such a subject. It was better to mature our ideas before indulging in vain conjecture.

The toast was acknowledged by Mr. Walter F. Reid, Chairman of the London section. Other toasts honoured were "The Trade and Industries of the District," proposed by Mr. Thomas Tyrer (Past-President), and acknowledged by Mr. W. E. B. Priestley; and "The Yorkshire Section," given by Professor Ed. Hart, and responded to by Mr. J. E. Bedford (Chairman of the Yorkshire section) and Mr. Walter M. Gardner (Secretary of the Local Committee). The speeches were agreeably interspersed with music.

On Friday the members devoted themselves entirely to pleasure. The local committee had arranged an excursion to Ripon, Studley Royal, and Harrogate, and over 100 delegates visited Fountains Abbey. The interesting places were much appreciated, and at more than one interval cordial thanks were accorded to the local committee for the treat provided and the excellent arrangements made. Later in the day, at the Midland Hotel, there was a ladies' evening, and afterwards a smoking concert, at which a programme of vocal and instrumental music and recitations was gone through.

POOR-LAW DISPENSERS' ASSOCIATION.

ORDINARY MEETING.

Friday, July 71, 1903, at Surrey House, Thames Embankment, W.C., Mr. Montagu G. Smith in the chair.

There was a good attendance of members from Camberwell, Hackney, Greenwich, Poplar, Stepney, Lewisham, St. Marylebone, St. Pancras, and Strand Unions.

The Hon. Secretary (Mr. H. D. Kelf) read several apologies from absentees, and the minutes of the last meeting.

The chief business was to receive the reply of the National Poor-Law Officers' Association to an application for affiliation. That Association, at its meeting at Sheffield on July 4, decided to grant the application, which includes a capitation fee of 1s. 6d. per member. The resolution to affiliate the Poor-Law Dispensers' Association to the National Poor-Law Officers' Association was carried unanimously; also the alteration of the annual subscription from 2s. 6d. to 4s. (to include the capitation fee).

Mr. G. B. Walker, M.P.S. (Greenwich) then read an interesting paper on "Poisons," which was illustrated by several varieties of poison bottles, including the "Martin," the "Practical," and the "Poplar," and poison labels. Mr. Walker dealt in some detail with the toxicology of many powerful drugs, and recalled various interesting facts in connection with the majority of poisons in the Schedule to the Pharmacy Act, several historic cases of poisoning being mentioned. The regulations for the storing of poisons, and various devices to ensure safety were commented on.

A discussion followed, in which most of the members joined, and after a vote of thanks to Mr. Walker the proceedings terminated.

WOLVERHAMPTON AND DISTRICT CHEMISTS' ASSOCIATION.

Congratulations to an M.P.

Subjoined is the correspondence which has passed between the President of the Wolverhampton Chemists' Association and Sir Alfred Hickman, on the occasion of his being made a baronet.

[Copy of Letter.]

71, Victoria Street, Wolverhampton.
July 1, 1903.

Sir Alfred Hickman, Bart., M.P.

Dear Sir,—On behalf of the Wolverhampton and District Chemists' Association, allow me to offer you our sincere congratulations on the honours recently conferred upon you, and at the same time express our appreciation of the manner in which you have for so many years discharged your arduous duties as Parliamentary representative of Wolverhampton West. We trust you will enjoy many years of health and strength in which to wear those honours you so richly deserve.

I am, yours truly,
F. A. Willcock, President.

[Copy of Reply.]

22, Kensington Park Gardens, W.
July 3, 1903.

Dear Mr. Willcock,—Please present to the Wolverhampton and District Chemists' Association my warmest thanks for their kind congratulations and good wishes.

Yours faithfully,
Alfred Hickman.

F. A. Willcock, Esq.

GENERAL MEDICAL COUNCIL.

SPECIAL MEETING.

Thursday, July 16, 1903, Sir William Turner, President, in the chair.

The Royal Colleges.

Sir Victor Horsley withdrew a motion of which he had given notice with reference to the examinations of the Royal Colleges of Physicians and Surgeons (see *P.J.*, July 18, p. 72).

It was thereupon resolved, upon the motion of Dr. Windle, seconded by Sir Christopher Nixon,

> That the President be requested to call the serious attention of the Royal Colleges to the unsatisfactory state of matters in regard to the course of study and examinations in chemistry, physics, and biology which these reports disclose, and to urge that in the interest of medical education immediate steps should be taken to remedy the defects in the regulations of the Royal Colleges which have led thereto.

A further resolution was adopted authorising the President to appoint a committee, consisting of two members from each of the three branch councils, to join with him in conferring with the representatives of the Royal Colleges, should it appear that a conference on the questions raised therein was desirable.

The Apothecaries' Society.

The Council adopted a report by the Examination Committee on the inspection of the primary examination of the Apothecaries' Society of London, in which the Committee expressed agreement with the visitors "that the average training of the candidates is insufficient for men who are commencing medical studies."

On the motion of Dr. McVail, seconded by Dr. Bruce, resolutions were passed declaring the opinion of the Council that the examination in chemistry, physics, and biology of the Apothecaries' Society of London was insufficient, and requesting the President to urge upon that body the importance of improving the scope and standard of their examination.

Oxford University.

Mr. Bryant, as Chairman of the Examination Committee, formally moved the adoption of a report by that Committee on the final examination for the degree of Bachelor of Medicine by the University of Oxford. The Committee stated that in the face of the facts stated in the report of the visitor and inspector, and having regard to the opinions they expressed, in which the Committee agreed, as to the insufficiency of the examination, they considered that the authorities of the University must themselves be regarded as entirely responsible for granting a registrable qualification on an insufficient examination.

Dr. Finlay seconded the motion.

Dr. Norman Moore said it was very undesirable that the Council should censure the University of Oxford, which was what they would do if they adopted the report.

After a long discussion, the consideration of the report was postponed; the President was requested to arrange for a second inspection and visitation of the final examination of the University of Oxford during the ensuing year; and it was resolved that the report thereon should be considered by the Council before a decision was come to as to the sufficiency of the examination.

BRITISH MEDICAL ASSOCIATION.

PROGRAMME OF THE ANNUAL MEETING.

The seventy-first annual meeting of the British Medical Association is to be held at Swansea on July 28 and the three following days. In a special supplement to a recent issue of the *British Medical Journal*, the programme is detailed, and the following particulars are quoted. In the Section of State Medicine, the subject of "Food Poisoning and Adulteration" is among those proposed for discussion. On Thursday, July 30, a discussion will be introduced on "Alcohol in its Relation to Mental Diseases," several medical men having already intimated their intention of taking part in the discussion. "Human Evolution with Reference to Alcohol" is the title of a paper to be contributed by Mr. G. A. Reid, M.B. A discussion on Mediterranean Fever will be opened by Staff Surgeon Dalton, R.N., who will treat of the prophylactic, hygienic and sanitary, medicinal, and dietetic treatment. As almost every drug has been given in this disease without any lasting benefit, the paper is expected to be of special interest and value. The training of stretcher-bearers and volunteer medical units is to be discussed, when several suggestions for the improvement of the medical and pharmaceutical equipment of bearer companies will be advanced.

The annual exhibition in connection with the meetings will be held in the Free Library, Swansea. Section A of the Exhibition comprises Foods and Drugs, including Prepared Foods, Chemical and Pharmaceutical Preparations, Antiseptic Dressings, etc., while Surgical Instruments and Accessories are to be shown in another Section.

Ethical Committee.

In the report of this Committee of the British Medical Association occurs the following paragraph:—

> The Secretary also reported that he had written to the consultants whose names appeared in Parkes' Drug List, 400 in number, of whom over 300 had replied. Nearly all stated that they had written to Parkes' Drug Stores, Limited, asking that their names might be withdrawn, and the firm had at first replied to each agreeing to withdraw his name in future. The Company also, in reply to a letter which the General Secretary, by instruction of the Council, had addressed direct to it on behalf of the Association, had undertaken to withdraw the list entirely. The Company had subsequently withdrawn this undertaking on account of one medical man having put the matter in the hands of his solicitor, who had demanded that his name should be removed from the current price lists, and had commenced an action to enforce this. There was reason, however, to believe that the action would be withdrawn, and that Parkes would in that case renew their original undertaking to suppress the list.

The question of discounts offered to members of the profession by dealers in medical and surgical articles was considered, and it was resolved that the Committee failed to perceive any difference between discounts offered to a medical man on goods supplied to his patients and secret commissions.

HALIFAX AND DISTRICT CHEMISTS' ASSOCIATION.

LETTER FROM THE INLAND REVENUE.

The Association, through its Hon. Secretary, Mr. W. R. Black, asked the Inland Revenue authorities to answer the following questions, having reference to the interpretation and working of the Medicine Stamp Acts:—

> (1) Does the rule with regard to the breaking open of stamped packages remain unaltered; *i.e.*, will a trader, not a chemist, be able to sell, for example, a penny box of liver pills, providing the package from which that box was taken was stamped in accordance with its retail value; and also, would the same rule apply to an ounce of cough mixture sold from a stamped 1 lb. bottle?
>
> (2) May a trader not a chemist sell a pure drug labelled "headache powder," without stamping, or, *e.g.*, a bottle of oil of cloves labelled "toothache tincture," without stamp?
>
> (3) Does the Board intend to take steps, especially among traders not being chemists, to ensure the new provisions being strictly carried out. Many small shopkeepers having no trade journals to inform them may remain ignorant of the change in the law.

The following reply has been received:—

> Inland Revenue, Somerset House,
> London, W.C., July 15, 1903.
>
> Sir,—In reply to your letter of the 8th inst, I am directed by the Board of Inland Revenue to inform you that no alteration has been made in the terms of the concession as to breaking open stamped packets. I am, however, to point out that concession never did apply to articles taken from a stamped packet which were again made up into a dutiable packet or enclosure as appears to be contemplated in the case of the liver pills to which you refer. Moreover, the concession applied only to licensed retailers, who bought the stamped packet from a wholesale dealer or manufacturer. As regards your second question, I am to explain that the exemption from Medicine Stamp Duty in Act 35, Geo. III., c. 150, in favour of all medicinal drugs uttered or vended entire, "without any mixture or composition with any other drug or ingredient whatsoever," applies to sales by persons holding a medicine licence as well as to sales by qualified chemists and druggists. As regards your third inquiry, I am to state that the Board

will not take proceedings up to December 31 next in cases where traders continue to sell articles unstamped under their existing stocks of labels, which have only been regarded as involving liability to Medicine Stamp Duty since the recent decisions in the Law Courts. The Board trust that by that time the effect of the above decisions will be generally known.—I am, sir, your obedient servant,

E. S. STOODLEY, Secretary.

Mr. W. R. Black.

Conjoint Advertising Scheme.

On the advice of Mr. W. S. Glyn-Jones, it has been decided to defer the publication of the pamphlet in connection with the above scheme for a further period of six months, so as to allow the new conditions of the Medicine Stamp Act to assume a more definite aspect. It had been hoped that the pamphlet would have been put into circulation during the coming autumn, and the matter it would have contained has been ready some little time.

BRITISH PHARMACEUTICAL CONFERENCE.

PAPERS FOR THE BRISTOL CONFERENCE.

The following additional papers have been promised for the Bristol meeting of the British Pharmaceutical Conference:

(23) The Quantitative Separation of Strychnine from Quinine. By E. F. Harrison and D. Gair.

(24) Note on the Volumetric Use of Fehling's Solution. By E. F. Harrison.

(25) Note on the Refractive Index of Essential Oils. By E. J. Parry, B.Sc., F.I.C.

(26) The Non-existence of Mydriatic Alkaloid in *Lactuca virosa*. By J. O. Braithwaite and H. E. Stevenson.

PHARMACEUTICAL SOCIETY OF IRELAND.

ADDRESS TO HIS MAJESTY.

The following address was presented, on behalf of the Society, on Wednesday, in Saint Patrick's Hall, Dublin Castle, by Messrs. Beggs (President), and Wells (Ex-President):—

> To His Most Gracious Majesty King Edward the Seventh.
>
> May it please your Majesty,
>
> We, the President and Council of the Pharmaceutical Society of Ireland, respectfully approach your Majesty, on behalf of our Society, to offer to your Majesty a most sincere and hearty greeting on this the occasion of your visit to Ireland.
>
> In tendering this welcome to your Majesty and your gracious Consort, we, in common with all your loyal Irish subjects, most gratefully recognise your Majesties' devotion to the interests of your subjects; and we hope that this, your Majesties' first visit to Ireland since your accession to the Throne, may be the forerunner of many more, and we trust that this visit may prove of great benefit and pleasure to your Majesties.
>
> We would express our loyalty to your Throne and Person, and earnestly pray your Majesty may long reign, in health and happiness, and to the glory of the Empire.

We have the honour to be,
On behalf of the Pharmaceutical Society of Ireland,
Your Majesty's faithful and obedient servants,
GEORGE D. BEGGS, *President.*
ARTHUR T. FERRALL, *Registrar.*

EXAMINATION RESULTS.

Registered Druggist Examination (at Dublin).—Sarah O'Neill, L. P. Murphy, H. B. McKinstry passed. Three candidates were rejected.

NEWCASTLE AND SUNDERLAND CHEMISTS' ASSOCIATIONS.

JOINT ANNUAL EXCURSION.

Wednesday, July 15, 1903, at Alnwick, Northumberland. The party numbered sixty-three, Sunderland contributing thirty-four of this number. The day was wretchedly wet, which considerably interfered with arrangements. A substantial tea was partaken of at the Star Hotel, the party later visiting the castle. The Duke of Northumberland being in residence, the company were only able to visit the castle grounds and a few parts of the castle that are usually open to visitors. Owing to the wet weather, a concert was arranged indoors, and proved a decided success. Among the visitors from Sunderland was the Mayoress, Mrs. Turnbull, who was present representing the Mayor, that gentleman, who is President of the Sunderland Association, being unavoidably absent owing to some public function he had to attend. It was also regretted that the President of the Newcastle Association, Mr. Geo. F. Merson, was unable to attend through ill-health.

MIDLAND PHARMACEUTICAL ASSOCIATION.

MEETING OF COUNCIL.

Tuesday, July 21, 1903, at the Birmingham University, the PRESIDENT (Mr. Geo. E. Perry) in the chair.

Death of Mr. John Barclay.

Mr. PERRY referred in feeling terms to the sad death of Mr. John Barclay, formerly President of the Association. He moved:—

> That this Council deeply regrets the death of Mr. John Barclay, who for some years was a member of this Council, and President of the Association, and desires to tender its sincere sympathy with Mrs. Barclay in the great loss she has sustained.

The VICE-PRESIDENT (Mr. Alcock) seconded the motion, which was supported by other members and carried unanimously.

Election of Officers.

The following officers were elected for the next session:—President, Mr. A. W. Gerrard; Vice-Presidents, Mr. F. H. Alcock, F.I.C., and Mr. T. W. Lowther; Hon. Treasurer, Mr. J. C. Mackenzie; Hon. Librarian, Mr. A. W. Southall; Hon. Secretary, Mr. James A. Radford.

TORQUAY CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Wednesday, July 15, 1903, at the Pavilion Hotel, Torquay, Mr. NEWLYN (President) in the chair. There were also present Messrs. Ness, Knight, Fowler, Rawlings, and Young (Hon. Secretary).

Suggested Picnic.

The HON. SECRETARY reported that he had made inquiries as requested as to routes and tariffs, and suggested a drive to Ugbrook Park (famous for its deer), Chudleigh, and Bovey, at the latter place a substantial tea to be provided.

Mr. NESS thought it would be a most enjoyable outing, and proposed that it be held on the second Wednesday in August.

This was seconded by Mr. KNIGHT, and carried unanimously.

Mr. NEWLYN hoped that members would bring their wives with them, and strive to make the first picnic a success.

The Medicine Stamp Acts.

An interesting discussion took place upon this question, but no resolution was put to the meeting.

SHEFFIELD PHARMACEUTICAL AND CHEMICAL SOCIETY.

SPECIAL MEETING.

Tuesday, July 21, 1903, in the Montgomery Hall, Sheffield, to consider the action taken by the Inland Revenue authorities. The President (Mr. J. Austen) was in the chair, and was supported by Councillor A. R. Fox, Messrs. G. T. W. Newsholme, C. F. Carr, G. Squire, Job Preston, P. Carr, J. F. Eardley, J. B. Pater, R. D. Douglas, C. O. Morrison, G. Ellinor, F. W. Whitworth, J. T. Appleton, J. Dale, C. H. Hewitt, R. Tildesley, H. Antcliffe (Hon. Secretary), and others. After a long discussion, the meeting unanimously decided to take no further action in the matter for the present.

LONDON CHEMISTS' ASSOCIATION.

(NORTH LONDON BRANCH.)

Thursday, July 23, 1903, at 3.30 p.m., at the factory of Messrs. Idris, Pratt Street, Camden Town, Mr. T. H. W. Idris, President, in the chair.

Mr. R. B. Betty, Secretary, stated that Messrs. Hughes, Clarke, Hutching, Taylor, Hanbury, Hill, Vincent, Dodd, Thomas, Watson, Corney, Bishop, Simnett, Hall, Clayton, Williams, and Martin had joined the Association since the previous meeting, bringing the total membership up to 126. He also announced that the next meeting of the Association would be the annual meeting, and would be held at the Hackney Town Hall some time in October.

Mr. P. H. Burton then read a comprehensive paper on

The New Administration of the Stamp Act.

He gave a brief *résumé* of the Medicine Stamp Duty Acts, and went on to deal with the recent cases of Ransom *v.* Sanguinetti and Farmer *v.* Glyn-Jones, and expressed the opinion that qualified chemists had gained much more by the decision in the latter case than they had lost by the former case.

Mr. Edwards then moved:—

> That this meeting respectfully asks the Pharmaceutical Council, through their editorial department, to issue a book of formulæ, to be called the 'Pharmaceutical Journal Formulary.'

He thought it would be useful for chemists to work from.

Mr. Betty seconded, and said that he had applied at Somerset House for information on the subject, and had been told verbally that the Board of Inland Revenue would recognise a book of formulæ called the 'Pharmaceutical Journal Formulary.' Also that if the box or packet was too small for a proper label giving the formula, they would allow a slip label to be placed round the box, bearing the letters "P.J.F." A doubtful label could either have those letters printed on and the formula made up accordingly or else a stamp must be affixed.

The President, referring to Mr. Burton's paper, said he had given the Inland Revenue Authorities a hard nut to crack by asking them if "Hazeline" and Kebler's Malt Extract were liable. Mr. Idris also referred to the motion before the meeting, and pointed out that if a formula for, say, a cough mixture, published in the 'P.J.F.' was generally adopted by chemists and became popular, it might give their trade enemies an opportunity to step in and sell the same preparation with a stamp, but at a less price than the chemists sold it for. Of course, the 'P.J.F.' would benefit the penny trade.

Messrs. Campbell, Burton, Pentney, and Holding subsequently took part in the discussion, and the general opinion expressed was that the wisest policy was to fall in with the Board of Inland Revenue's decision, and to do their best to meet them in every way. Incidentally there was a short and sharp discussion initiated by some remarks made by Mr. Pentney in regard to the activity of the Pharmaceutical Council.

The motion was eventually carried by seven votes to six.

Mr. Betty, in the absence of the author, then read a paper on

The Advantages of Combined Associations,

by Mr. G. P. Pond.

After dealing with the advantages of combination, the author suggested that the existing associations should unite and form a society to be called "The National Society of Chemists," which should assist the Pharmaceutical Society in every possible way, and also look after trade interests.

The Chairman said the suggestion of Mr. Pond was an eminently practical one.

Mr. R. H. Jones pointed out that there was a similar suggestion before the Central Committee of the London Chemists' Association, and he moved that the matter be referred to the Central Committee.

Mr. Pentney seconded, and after some little discussion the motion was carried unanimously.

Mr. W. M. Campbell next read a paper on

Territorial Representation.

He referred to the delay of thirty years on the part of the Pharmaceutical Council in allowing chemists who had passed the Minor Examination only, taking a seat on the Council, and went on to advocate the abolition of the Major Examination on the ground that there should be one qualifying examination only; also that the Council should again hold its own Preliminary Examination instead of accepting the certificates of other bodies. Coming to the question of territorial representation, he suggested that Wales should have two members of Council, Scotland four, London four, North of England three, and the Eastern, Midland, Southern and Western counties two members each; he thought that would be a fair distribution.

The President said chemists were too apt to vote for men who were well known rather than for men representing their own districts.

Mr. Pentney, while agreeing with Mr. Campbell on some points, was not altogether in favour of territorial representation.

The proceedings then terminated.

REVIEWS AND NOTICES OF BOOKS.

A Treatise on Materia Medica and Therapeutics,' including Pharmacy, Dispensing, Pharmacology, and Administration of Drugs. By Rakhaldas Ghosh, L.M.S., Calc Univ. Vol. II., Pp. 169 to 656 + 20. Price 5s. Calcutta: Hilton and Co., 109, College Street. 1903.

This posthumous work has been edited by Colonel Lukis, of the Indian Medical Service, from the notes of the late Dr. Ghosh. All the remedies of the B.P. and of the Indian and Colonial Addendum are briefly described, the synonyms in the Indian vernacular being given where such exist. The botanical source, physical characters, chemical composition, pharmaceutical incompatibility, and therapeutic action are successively mentioned. A list of non-official preparations of various drugs is not without value. The arrangement of the treatise is not, however, altogether happy. Thus, sodium and zinc sulphocarbolates are described under carbolic acid, while salicin and salol are both described under the monograph on salicylic acid. The object of such arrangement seems to be to treat of the therapeutics o several allied substances in a single monograph; but it is doubtful whether that advantage is in all cases of importance There is, however, no reason to doubt that the book will be of value to physicians and pharmacists in India.

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

Liverpool University.—The charter of incorporation of the University of Liverpool was received on Wednesday by the Lord Mayor. The Earl of Derby is nominated as chancellor.

Royal Photographic Society.—An exhibition of pictorial photographs by Dr. Chas. F. Grindrod, of Malvern, is now on view at 66, Russell Square, between the hours of 10 a.m. and 7.30 p.m.

Jenner Institute of Preventive Medicine.—At a meeting of the members on Wednesday it was unanimously resolved to alter the name of the Institute to "The Lister Institute of Preventive Medicine."

Fire Caused by Lime.—On Saturday, July 18, a fire broke out on the premises of the Sanitas Company, Limited, Lockele Street, Burdett Road, E. Lime, slaked by the heavy rain which fell that morning, caused the contents of a store to catch fire.

Will.—Under the will of the late Mr. Walter Farnworth, chemist and druggist, Mayor of Blackburn, the following bequests have been made:—£5,000 each to the Blackburn District Nursing Association and the Blackburn Infirmary, and £2,000 each to the Blackburn Orphanage and the Blackburn Ragged School.

The Proposed Technical School for London.—The London County Council at its meeting on Tuesday, the 21st inst., expressed high approval of Lord Rosebery's proposal, and, on certain conditions, declared itself willing to contribute a sum for maintenance of not more than £20,000 per annum. The Council thinks that national contributions should be invited and scholarships provided.

Weights and Measures.—Mr. E. Johnson states, as Secretary, that since the Colonial Premiers at the Coronation Conference passed a resolution in favour of the adoption of metric weights and measures, greater interest has been manifested in the objects of the Decimal Association. The membership has more than doubled during the year.

Fewer Dental Students.—At the conversazione of the Royal Dental Hospital of London last week, the Dean of the school stated that the entry of new students had not been quite so large as last year. The falling off was extraordinary, for, as a profession, dentistry was not overstocked, and it was one in which the course of study was full of interest, and in which an adequate reward awaited a qualified man.

Drugs in Yorkshire.—The West Riding Analyst has reported to the County Council that during the quarter ended March 31 it has only been necessary to prosecute in one case of adulterated drugs. This was a case in which a sweet spirit of nitre contained only five-sevenths of the minimum proportion of ethyl nitrite. The offender was cautioned. Numerous samples of drugs were taken, but found genuine.

A New Match.—Prof. Watson Smith, in the *Journal of the Society of Chemical Industry*, states that Rosenthal has made a match without phosphorus, which can strike on any material by friction. The head of the match consists of copper sulphate, 5 parts; copper cyanide, 10 parts; potassium chlorate, 40 parts; powdered glass, 9 parts; antimony sulphide, 3 parts; sulphate of lime, 3 parts; sulphur, 4 parts; and solution of gum acacia, 10 per cent., 26 parts.

Alleged Noxious Fumes.—In the Chancery Division of the High Court of Justice on Tuesday, an action was concluded in which a copper founder carrying on business at a wharf at the East End of London sued the proprietors of some neighbouring chemical works, where sulphuric acid is manufactured in large quantities, for damage done to machinery and plant through rusting caused by the acid fumes. The judge held that no abnormal rusting took place, and dismissed the action.

Further Charge of Smuggling Saccharin.—At Liverpool, on Wednesday, Amando Pietri was remanded in connection with a charge of smuggling 45 lb. of saccharin. It was stated that on June 25 a trunk was imported to Dover, and consigned to a man at Lime Street Station. Pietri called for it, and police officers followed him and seized the trunk, in which saccharin was concealed beneath a false bottom. A newspaper cutting relating to the recent saccharin case was found on the accused.

Pharmacy Students in Paris.—The Paris correspondent of the *Pall Mall Gazette* states:—"The question has lately been asked—What is the student population of the Latin Quarter? It is impossible to say exactly, but out of the 11,647 students, 400 of whom are female, at least half dwell in those art latitudes. The eleven thousand odd may be thus divided according to subject of their study (or neglect):—Protestant theology, 70; law, 3,635; medicine, 3,917; science, 1,273; literature, 1,697; pharmacy, 1,401. The proportion of female to male students is largest among students of literature. Less than 500 of the whole 11,647 are foreigners."

A Leeds Chemist Committed for Trial.—James A. H. Toulson (68), chemist, Meanwood Road, Leeds, was charged on Tuesday at the Leeds City Police Court with having unlawfully incited a girl named Sarah Bennett, also living in Meanwood Road, to procure abortion. Until recently the girl was employed as a domestic servant at Headingley, and on June 22 she went with her sister to the defendant's shop. It was stated that the defendant was told of the girl's condition, and was asked to give her something. On payment of a sovereign the girl was given some medicine, and she became so ill that medical advice had to be sought. The defendant was committed for trial at the Assizes.

Dover Corporation and Its Drug Contract.—Another discussion arose at the meeting of the Dover Town Council on July 15 relative to the tenders for chemicals and drugs. Mr. A. L. Thompson, chemist and druggist, of Dover, who was the only person who tendered for the supply as originally advertised, again wrote asking why the Council had not accepted his tender, which was a fair and proper one. He complained that two of the members of the Council had imputed to him dishonourable conduct in suggesting that he had formed a ring. The fresh tenders received were opened; one was 7½ per cent. below schedule prices, another 25 per cent. below, and a third 17½ per cent. below. The tender of the Dean Drug Co., Dover, at 17½ per cent. below, was accepted.

Sunderland, Newcastle, and District Chemists' Walk.—A committee meeting was held on Monday, July 20, when it was announced that the following prizes have been offered:—A dressing-case value £3 3s., silver-mounted cigar and cigarette case; a special prize consisting of 4 doz. 1s. 1½d. Newskin, and 5 doz. 7½d. ditto, presented by Mr. J. E. Garrett, 124, Southwark Street, London, E.C., to the first man home with "Newskin" on his feet. Messrs. Marshall Brothers, Fawcett Street, Sunderland, also offer a prize, and Messrs. J. Ismay and Sons, Newcastle, have sent a subscription. Intending competitors are reminded that entries close Monday, July 27, and will be received until then by J. Crake, 4, Olive Street, Sunderland, after which further particulars will be announced by postcard.

Pope Leo and Previous Popes.—It is interesting to record that the late Pope was, in the days of his youth, an ardent student of chemistry and botany, taking first prizes in both subjects. The last medicine administered to His Holiness, with a view to overcoming the drowsiness and depression which seized him, was in the form of injections containing caffeine, alcohol, and camphor. Among the popes who met their death through poison were Gregory V. (999); Benedict (1304), who ate some fresh figs offered to him by a veiled woman; Alexander V. (1410); Alexander VI. (1503), who accidentally drank of poisoned wine which was intended to be drunk by someone who was supping with him; and Sixtus V. (1585). In more recent years Clement XIII. (1769) and Clement XIV. (1774) were also poisoned.

Proprietary Medicines in China.—The Acting British Consul at Wuchow, in an interesting report published this month, says that the Chinese are thorough believers in the virtues of all kinds of nostrums, and there should be a large field for "patent" medicines. Also, the Chinese are beginning to use soap for shaving, and there might be a sale for a cheap scented shaving soap, preferably coloured and packed in tins. British soap of a well-known brand, he says, sells at 1s. per box of three cakes, but being packed in plain cardboard boxes, and but slightly perfumed, it is not so much in demand as the cheaper and highly-scented French and German varieties, which come out in ornamental covers, and sell well at from 6d. to 1s. per box. A Chinaman, and more particular a Chinawoman, always looks to the box, case, tin, or bottle, as the case may be, when purchasing foreign goods. The covering, if it may be useful in the household, will always recommend an article to the bargain-loving Chinese, and this holds good from a tin of kerosene oil to a box of pills.

WHOLESALE DRUGGISTS' PICNICS.

Cuxson, Gerrard and Co.—The sixteenth annual excursion of the firm of Cuxson, Gerrard and Co., surgical dressings manufacturers, Birmingham, took place on Monday, the 20th inst., when employers, employees and friends were conveyed by special saloons to Llandudno Additional interest was centred round the event this year as it commemorates a quarter of a century's establishment, and the consistent growth of the firm was the subject of the congratulatory speeches which followed an excellent repast provided by the firm, who also bore the whole of the expenses for the day.

An East Anglian Firm's Outing.—Messrs. Smith and Sons, wholesale druggists and manufacturing chemists, of Norwich, entertained their employees to a most enjoyable outing on Tuesday. The party, mustering over sixty, assembled at Foundry Bridge, where they took the "Jenny Lind" steamer, and proceeded as far as Coldham Hall, under the most favourable circumstances. At 5.30 the party sat down to a cold collation, handsomely served by Mr. Pike, of Davey Place. Mr. J. de Carle Smith presided, and was supported in the vice-chair by his partner, Mr. Richard Smith. At the close of the repast Mr. C. E. Stevens, the head of the office staff, proposed a vote of thanks to the firm in felicitous terms. This was heartily supported by Mr. E. B. Buttrum, the senior representative of the firm. Mr. J. de Carle Smith, in the course of his reply, pointed out that the firm was one of the oldest in the kingdom, having been established over a century. During the afternoon and evening a band, under the direction of Mr. Pond, entertained the company with a varied and enjoyable programme of music, and the party dispersed at Foundry Bridge after a most successful outing.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. G. D. Beggs and Mr. W. F. Wells, respectively President and Ex-President of the Pharmaceutical Society of Ireland, presented an address to the King on Wednesday.

Messrs. Robert Gibson and Sons, Limited, have changed their London address, having moved into larger and more convenient premises at 4, New Zealand Avenue, Barbican, E.C.

Mr. Robert Fred. Swinn, chemist, son of Mr. Chas. Swinn, St. Mary's Pharmacy, Hulme, has just obtained a first-class at the Manchester School of Technology in the principles of optics and sight-testing.

Mr. T. S. Hodgson, M.P.S., of Waterloo, near Liverpool, on the occasion of the railway accident which occurred during last week, placed his whole stock of lint and dressings at the disposal of the injured.

Mr. Alexander Spence, member of the N.B. Branch Executive of the Pharmaceutical Society, whose wedding was recently announced in this Journal, paid a visit to 17, Bloomsbury Square, last week in company with his wife.

Mr. J. Ingall, chemist and druggist, of High Street, Ashford, Kent, for many years prominently connected with the elementary schools of the town, has been presented by the school managers with an American folding writing-desk in recognition of his long and valued services to the schools.

Mr. Frank Browne, M.P.S., Government Analyst, Hong Kong, has analysed samples of water taken from a sulphur spring in the neighbourhood of Port Edward, and the result of his analysis is published as "Appendix IV." to the report for 1902 of His Honour J. H. Stewart Lockhart, C.M.G., His Majesty's Commissioner at Wei-Hai-Wei.

Mr. William Ramsden, chemist and druggist, Fallowfield, is for the second year chairman of the Chorlton Board of Guardians, the largest and most important of the local unions. At the weekly meeting of the Chorlton-on-Medlock Board of Guardians, on the 17th inst., it was unanimously resolved to petition the Chancellor of the Duchy of the County Palatine to place Mr. Ramsden on the Commission of the Peace for the city of Manchester.

Mr. Henry Reynolds, B.Sc., Ph.D., who is at present engaged at the Municipal School of Technology, Manchester, has been appointed head of the chemical department of the Paddington Technical Institute, London. Mr. T. H. Vincent, B.A., B.Sc., A.R.C.S., formerly demonstrator in physics at the Royal College of Science, and at present assistant examiner to the Board of Education, has been appointed head of the physics department.

Reilly et Cie. is the style of a new firm of wholesale dealers in English, American, and German pharmaceutical specialties, whose headquarters are 40, Boulevard de l'Imperatrice de Russie, Nice. The name Reilly is known all along the Riviera, from Cannes to San Remo, as well as in the many French and Italian inland watering-places frequented by English visitors. Both Mr. Alfred Reilly and his brother, Mr. T. J. Reilly, have during the last ten years spent seasons in most of the best-known pharmacies on the Continent; the latter gentleman has also passed some time in Egypt. The many friends whom they have met in the course of their wanderings through different parts of Europe will wish them luck in their new venture.

TRADE NOTES.

Photographic Instruments and Accessories.—A new illustrated catalogue of photographic instruments and accessories has just been issued by Messrs. W. Watson and Sons, 313, High Holborn, W.C. The catalogue, which contains over 200 pages of closely printed matter, fully illustrated, is sold at 6d., post free 4d. extra.

Watson's Enlarger.—Messrs. W. Watson and Sons, 313, High Holborn, W.C., as the outcome of the recent competition among users of their daylight enlargers, are issuing a number of new specimens of work done in the enlargers as showcards, the specimens being made from those negatives which won prizes in the competition. Messrs. Watson and Sons will be pleased to send specimens of the showcards to photographic chemists and dealers who stock their enlargers on application, mentioning the *P.J.*

Photographic Requisites.—Messrs. Francis Newbery and Sons, 27-28, Charterhouse Square, E.C., have just issued a new edition of their illustrated catalogue of photographic requisites, aneroid barometers, magneto-electric goods, etc. Messrs. Newbery and Sons do not profess to manufacture any of the articles quoted in the list, but they do claim to be able to supply photographic requisites of any kind on the shortest possible notice. A special discount key is published with the catalogue for the retailer's own private use.

Allen and Hanburys, Limited, Bethnal Green, E.—The new and highly artistic list of toilet soaps and perfumery published by this firm is to hand. It is profusely illustrated, and the exact colours and shades of the various soaps, wrappers, and dainty boxes and cartons are reproduced. Messrs. Allen and Hanburys make a special feature of supplying chemists with soaps stamped with their customer's own name and address, and it is unnecessary to remind readers of the high quality of goods manufactured by them. The catalogue, which is a work of art, should be in the hands of every chemist.

A. H. Cox and Co.—The Brighton firm of pill and tablet manufacturers, whose many up-to-date productions have from time to time been noticed in these columns, have recently introduced a compressed dentifrice which ought to become a popular toilet adjunct. The dentifrice takes the form of small antiseptic and astringent tablets which, when dissolved in water, form an agreeable aromatic liquid mouth-wash. Their portability should recommend them especially to holiday makers, and their efficacy is undeniable. They are packed in bottles containing fifty tablets, and the bottles are enclosed in artistic cartons, which may bear the retailer's own name and address.

Sixty Years Ago.

From the "PHARMACEUTICAL JOURNAL," JULY, 1843.

PILULA FERRI COMPOSITA.

Several methods were proposed some time ago, by members of the Society, for preparing this pill in such a manner as to preserve the carbonate of iron undecomposed, and to insure the uniform consistence of the mass. Some of the plans recommended were, to a certain extent, deviations from the formula of the college. We have found, as the result of experiment, that the mass can be made according to the directions of the Pharmacopœia, and free from any of the objections which have been pointed out, by an attention to the following particulars:—

Dissolve the sulphate of iron, finely powdered, in the treacle, with a moderate heat, and add the carbonate of soda, stirring constantly until the effervescence has entirely ceased, and the mixture has become cool; then add the myrrh gradually and incorporate the mass. As a little evaporation takes place at the commencement of the process, a small excess of treacle is requisite to supply the deficiency. This mass retains its colour and consistence remarkably well.

THE BENEVOLENT FUND.

If a house which was not insured happen to be burnt down, the owner receives but little sympathy from his friends, many of whom remark that "it serves him right." When a mechanic or artisan is thrown out of work by illness, and is destitute of the common necessaries of life, he is told that he may thank himself for this destitution, as he ought to have subscribed to a club. A man who dies, leaving his family totally unprovided for, entails a stain on his memory, and is blamed for not having insured his life. Improvidence is always considered a failing; in some cases it is a positive sin.

Those who are dependent upon their own exertions in business for subsistence are liable to a variety of casualties, for which they should endeavour to be prepared. The influence of competition, the depression of trade, the changes of fashion, and the caprice of the public may, within a short period of time, change the aspect of affairs and reduce a man from a state of affluence to difficulties or absolute want; ill-health may cramp or entirely suspend exertion in business, or premature death may cut off the possibility of making the requisite provision for a family.

These remarks apply more or less to all trades and professions, and we have no reason to believe that the drug trade forms an exception to the general rule. On the contrary, if we may judge from the complaints which are so frequently made respecting the depression of the trade, it would appear that an institution for the relief of the unfortunate is particularly required by the chemists and druggists. Yet this is almost the only class of the community which is unprovided with an efficient Benevolent Fund.

SCHOOL AND COLLEGE NEWS.

Metropolitan College of Pharmacy.—At the Summer sessional examination the following were awarded medals:—Silver medallist, Cyril Yeoman; bronze medallist in practical chemistry, Charles Abel Davies; bronze medallist in chemistry, William Beesley; bronze medallist in pharmacy, Robert Valentine Sweetman; bronze medallist in botany, Robert Valentine Sweetman; bronze medallist in materia medica, Edward Chalmers; bronze medallist in dispensing, Joseph Luther Hirst.

LEGAL INTELLIGENCE.

Proceedings at Glasgow under Section 15.

Pharmaceutical Society v. T. C. Paterson.

On Wednesday, July 22, 1903, in the Sheriff Court, Glasgow, before Sheriff Davidson, Thomas C. Paterson, 231, Duke Street, Glasgow, was charged with having, on May 30, in his shop at above address, contravened Section 1 and 15 of the Pharmacy Act, 1868, in so far that not being a registered chemist within the meaning of the Act, he kept an open shop for the retailing, dispensing, and compounding of poisons, whereby he was liable to a penalty not exceeding £5 sterling.

Mr. Turner, for the defence, said that before his client was called upon to plead, he wished to know who was appearing for the prosecution. Was it the gentleman who signed the complaint, Mr. Barrie, or was it Mr. Richard Bremridge, the Registrar of the Pharmaceutical Society?

Mr. Morison, S.S.C., Edinburgh, who appeared for the prosecutor, said that while the petition bore the signature of Mr. Barrie, it also bore the signature of Mr. Bremridge, and he held he was entitled to appear for the latter gentleman.

Mr. Turner said that his client had been brought into Court without being told what he was expected to plead to, and he was prepared to submit every objection that occurred to him.

Mr. Morison pointed out that the prosecutor was not there in the position of a private complainer. They represented the statutory official, Mr. Bremridge, appointed by the Act to prosecute in the public interest. If his Lordship had any difficulty in the matter he would ask him to delete the signature of Mr. Barrie from the complaint.

The Sheriff repelled the objection, and also repelled an objection to the *locus.*

Mr. Turner afterwards objected that his client had been brought before his Lordship without knowing the actual charge until the last minute. His client had been refused information when he asked for it, and he (Mr. Turner) had had to take objections which might not have been raised had fair treatment been given his side.

Mr. J. R. Hill, Assistant-Secretary of the Pharmaceutical Society, was called. A complaint had been made, he said, to the Registrar that respondent kept open shop for the sale of poisons, and he was instructed to make investigations. Witness submitted the Register of Chemists and Druggists for 1903, and it did not contain the name of defender. On May 19 he visited Paterson's shop, and saw a large number of bottles in the window. One was labelled oxalic acid, another sulphate of zinc, a third sulphate of copper, and a fourth sulphate of magnesia. He entered the shop, and asked defender for a bottle of carbolic acid. Paterson replied that he did not keep bottles of carbolic acid, but if witness cared to bring a bottle he would supply the quantity wanted. On the following day witness called at the residence of Mrs. McKellar, Cambridge Drive, Kelvinside, and got from her a packet labelled oxalic acid, and bearing the name of the respondent, who was described as an oil, colour, and paint merchant, 231, Duke Street, Glasgow. An analysis of the contents of the packet was made, and it was found to contain nearly 2 oz. of oxalic acid.

Cross-examined by Mr. Turner: It had not been his practice, before bringing a case into Court, to intimate to respondent what was the charge preferred against him.

Mr. Turner produced the evidence given before the Departmental Committee, under the Lord President of the Council, regarding the Pharmacy Acts, and referred witness to the evidence given by Mr. Bremridge with reference to penalties. Witness said the English procedure was civil. The Scottish procedure was entirely different.

Re-examined: Personally, he had no experience of the procedure in England. The procedure adopted here was precisely that adopted in all other similar cases in which witness had appeared.

Replying to the Sheriff, Witness said the premises looked exactly like an open shop, with quite a number of bottles of chemical substances exposed in the window, with labels giving the recommendations which he had specified.

The Sheriff asked if it was an open shop which anyone might go into. Did it suggest in any way that it was a shop in which anyone could be supplied with medicine?

Witness said it was rather like a hardware shop.

Joseph Tait, assistant to Mr. Hill, also gave evidence.

Mrs. McKellar spoke to purchasing the oxalic acid and to handing it to first witness. Respondent, she said, asked what it was for, and she replied that it was used for cleaning dirty brass. She paid 2d. for the article, which was given to her in a piece of paper. The place looked like a drysalter's shop.

This concluded the evidence for the prosecution, and no witnesses were called for the defence.

Mr. Turner, in addressing the Court, said that in this case there was no attempt to deceive or conceal anything. The respondent did not pretend to be other than what he was—an oil, colour, and paint merchant. He repeated his complaint about the refusal of the prosecution to supply him with information regarding the charge, and asked the Court to inflict a modified penalty.

Mr. Morison said the frequency with which the illegal sale of poisons, especially in Glasgow, was carried on made it imperative that such proceedings should be taken in this case. He saw no reason why a modified penalty should be imposed.

The Sheriff said there could be no doubt that an offence had been committed within the meaning of the Act, and imposed a fine of one guinea and two guineas costs, with the option of fourteen days' imprisonment.

At Mr. Turner's request, the Sheriff granted a case for appeal.

Pharmaceutical Society v. Owen.

On the same day at the same Court, Richard Jones Owen, 145, Duke Street, Glasgow, was charged with selling laudanum on May 29.

Defendant pleaded not guilty, and the date of the trial was fixed for August 6.

Proceedings at Walsall Under Section 15.

Pharmaceutical Society v. James.

On Wednesday, July 22, 1903, at the Walsall County Court, before his Honour Judge Roberts, the case of the Pharmaceutical Society of Great Britain against Howard James, an unqualified manager in the employ of Boots (Western), Limited, of 25, Park Street, Walsall, came on for hearing. Mr. Pritchett (instructed by Messrs. Tunbridge and Co., of Birmingham) appeared for the Society, and the defendant was undefended.

Mr. Pritchett said that it was an action by the Society under the Pharmacy Act of 1868. The defendant, who was not a qualified chemist and druggist, sold a quantity of opium on May 15, and under the Act the penalty was £5.

Arthur Foulds, of Manchester, inquiry agent, said that on May 15 he went to 25, Park Street, Walsall, a shop belonging to Boots (Western), Limited, who carried on a drug business. He went to the shop and purchased twopennyworth of laudanum, amongst other things. It was sold to him as laudanum, and he was served by Mr. James, who had served him with poisons previously. There was no one else in the shop, and it was put into the bottle which he produced. The time of day was 5.5 p.m.

Harry Moon, clerk to the Registrar of the Pharmaceutical Society, produced the Register of Chemists and Druggists, in which the name of the defendant did not appear. Witness received the bottle produced from the previous witness, and handed it to Mr. Tickle, the analyst, on July 15. It was in the same state as when he received it.

Thomas Tickle, public analyst for the city of Exeter, stated that he was a B.Sc. and a Fellow of the Chemical Society. He had received the bottle from the last witness, and had analysed the contents, and found that it contained opium. Laudanum, which was tincture of opium, was the principal ingredient in it. The quantity of opium was not less than 16 gr., which was a poisonous quantity.

The Defendant, in reply to his Honour, most emphatically said that he did not sell the laudanum. He was relieved every afternoon from half-past three to about a quarter to five, but it was sometimes five or ten minutes past five. When he got a letter saying that he had sold laudanum and soap liniment he at once wrote emphatically denying it altogether. He would not hide the thing if he had done it, and he certainly would know if he had sold it.

In cross-examination defendant said that he believed that he had met Mr. Foulds on the staircase of the Court, but did not think that he had ever seen him before. It was frequently a quarter past five when he returned. He might be there at five minutes past, but he would be having tea. There was no registered assistant on the premises, and he was in charge of the shop. They had a relief man, but he would not like to say that he had sold it. In February he sold to someone a bottle of Kay's linseed, and received a lawyer's letter, and he paid the penalty of £5 for the technical offence. After that time he had been very careful. He did not call any witnesses.

His Honour said that the case was practically undefended. The defendant was in charge of this shop, and his main allegation was that he denied having sold this particular poison; but the witness Foulds had sworn that he knew him, because he sold to him previously, and the defendant admitted that he had sold poison on another occasion. Foulds swore positively to the defendant as having sold it to him. There was nothing easier than for the defendant to deny the statement, but that denial must be supported, and the only circumstance the defendant alleged was that he very often did not return until a quarter past five, and that this sale took place at five minutes past five, when it was highly probable that he was not there. There was nothing to show that the defendant was not in the shop, though it was open to him to call the person who was in charge. He had not done so, and there must be judgment for the Society for the penalty of £5.

Mr. Pritchett asked his Honour for Counsel's costs, which were granted.

Defendant said that he had no means of paying. He had been dismissed from his situation in consequence of these proceedings, and he had had to borrow the other £5, which he paid. He had eight children, and had no means whatever.

His Honour said that no doubt the Society would take that into consideration.

Mr. Pritchett said that the Society brought these cases for the protection of the public, and it was really Boots, Limited, which ought to pay. They sympathised with this man, if he was dismissed, and thought the company ought to pay the penalty.

Sale of Food and Drugs Acts.

Iron Pills.

On Friday, July 17, 1903, at the North London Police Court, before Mr. Fordham, the hearing was commenced of a case in which the Islington Borough Council is taking proceedings under the Sale of Food and Drugs Acts against Parkes' Drug Stores, Limited, for the sale of iron pills (Blaud's formula) not of the nature, etc., demanded. Mr. Bramall appeared for the Borough Council, and Mr. C. H. Kirby was for the defendants.

Mr. Bramall explained that the pills were stated on the label to have been prepared not according to the British Pharmacopœia, but according to Blaud's formula. The prosecution alleged a deficiency of 78·5 per cent. of ferrous carbonate. The third sample, however, had been sent to Somerset House for analysis, and he asked for an adjournment. Perhaps, also, the magistrate would ask the analysts at Somerset House to certify just what percentage there was of ferrous carbonate.

Mr. Fordham having expressed his willingness to adopt that course,

Mr. W. W. Ward, inspector under the Acts, entered the witness-box to give formal evidence of purchase. On June 5 last he entered Parkes' shop at 804, Holloway Road, N., and asked for "iron pills." The assistant said "Blaud's?" Witness said that would do, paid 1s. 4d., for which he was given a receipt, and divided the pills into three parts.

Mr. Bramall asked whether Mr. Kirby admitted that the formula of the French Codex was Blaud's formula? If not, it might be necessary to bring Dr. Blaud's nephew from the South of France.

Mr. Fordham thought it would be more convenient to put that question at the later hearing.

After some discussion as to the date to be fixed for the latter, it was arranged that it should take place on Friday, August 7.

Cream of Tartar.

On Tuesday, July 21, 1903, at the County Bench, Malmesbury, Wilts, Thomas Dykes, grocer, of Brinkworth, near Malmesbury; Albert Adye and Sydney Adye, trading as Walker and Co., grocers, of High Street, Malmesbury; and Edward Henry Lockstone, grocer, of Oxford Street, Malmesbury, were summoned at the instance of Mr. Sam Smith, Inspector under the Sale of Food and Drugs Acts, for contravening Section 6 of the Food and Drugs Act, 1875, in that they sold a certain quantity of cream of tartar which was adulterated with lead in the proportion of three-quarters of a grain to the pound.

Mr. H. Bever, of Swindon, appeared to prosecute on behalf of the Wilts County Council, and Mr. F. W. Beck, of Messrs. Neve, Beck and Kirby, London, defended.

Mr. Bever said he desired to point out that the prosecution was only in one sense a prosecution of the defendants. It was also an attack upon the wholesale traders, who supplied the defendants with the cream of tartar. Cream of tartar could be prepared with reasonable care without the adulteration complained of. The cases now before the Court represented a distinct infringement of the 6th section of the Sale of Food and Drugs Acts, there being an appreciable quantity of lead in the cream of tartar sold.

Evidence of a formal character was given by Mr. Sam Smith, the Inspector, who purchased samples of the article.

Dr. Bernard Dyer, public analyst, spoke to analysing certain samples of cream of tartar last year. Four of these contained one grain of lead per pound, five contained half a grain, and the remainder contained about one-eighth of a grain. This year he analysed further samples, one of which contained one grain, five contained three and a-quarter grains, and the remainder none. Formerly there was a crude or commercial cream of tartar, but the British Pharmacopœia of 1898 spoke of "purified cream of tartar."

Cross-examined by Mr. Beck, witness admitted that the British Pharmacopœia of 1885 contained no statement as to the reactions with the tests for lead. He admitted that the presence of the lead was due to the process of manufacture, but did not consider the use of lead-lined vats in the process of manufacture was necessary. He had not pushed his tests far enough to ascertain whether cream of tartar was ever absolutely free from lead. He would say that samples containing from a quarter to one-eighth of a grain per pound might be met with in lead bought from chemists of the highest reputation.

Dr. Tubb Thomas, medical officer for the County of Wilts, gave general evidence as to the uses to which cream of tartar was put. It should certainly be entirely free from lead, which was an extremely dangerous and accumulative poison, especially when taken in small doses.

Dr. Arthur Pearson Luff, Home Office expert in the examination of poisons, said that, taking into consideration the uses to which cream of tartar was put, the amount of lead found in the samples taken was decidedly injurious to health. He personally knew of a case where the 160th part of a grain of lead per day in water had given rise to lead poisoning.

For the defence, it was urged by Mr. Beck that the article sold in this case was not a drug, seeing that it was bought from a grocer, and consequently the British Pharmacopœia, the only standard upon which the prosecution relied, was a standard that did not, and could not, apply in this case. That being so, there was no evidence before the Court of a sale to the prejudice of the purchaser.

Mr. Bever replied, and argued that there was no evidence before the Court that there were two standards of cream of tartar in the market.

After retiring for consultation, the Chairman said the magistrates regarded this as a test prosecution. They held that the substance was a drug within the meaning of the Act, and that the purchaser was prejudiced. Defendants would be each fined £5 and 10 guineas costs.

Camphorated Oil.

At Hyde Borough Police Court last week, Frank Tym, 44, Bennett Street, Newton, was summoned, at the instance of Samuel Lea, Inspector under the Sale of Food and Drugs Acts, for selling camphorated oil deficient in camphor to the extent of 73 per cent. on June 8.

Inspector Lea said the defendant kept a grocer's shop, and also sold drugs. He visited the shop on the day in question and purchased from his wife four ounces of camphorated oil, for which he paid eightpence. He told Mrs. Tym that he was an inspector, and that he should submit it for analysis. He sent a sample of it to the public analyst, who certified that it was deficient in camphor to the extent of 73 per cent.

The Defendant said he expected to be represented by the firm from which he purchased the stuff, but nobody had appeared. He quite admitted that he did not know the nature of the stuff.

A fine of 5s. and costs was imposed.

Medicine Stamp Duty Acts.

Selling Medicines Unstamped.

On Friday, July 17, 1903, at St. Helens (Lancashire) Police Court, before Col. McTear and Alderman J. Massey, Maurice Evans Darby, of 21, Kirkland Street, St. Helens, was charged with exposing for sale certain medicines liable to stamp duty without a licence, and also for not having them properly stamped. Mr. B. Hawkins, of the Solicitors' Office, Somerset House, prosecuted on behalf of the Inland Revenue, and the defendant pleaded not guilty.

Mr. Hawkins stated that the Inland Revenue authorities had the power to deal with the case without it going into Court, and as customary in such cases, they had offered the defendant certain terms, but he had failed to comply with them.

The Defendant here interrupted, and stated that before the case went any further he had two strong objections to make, viz., that the date in the summons was wrong, and secondly, that the information was bad in law, inasmuch as the case had been decided for the Inland Revenue authorities, who had fixed the penalty at 10s. He contended, under the circumstances, that the Court had no jurisdiction. He hoped the Clerk would rule in his favour.

Thomas Clancy, Inland Revenue officer, stated that on January 14 his attention was attracted to a card in the defendant's private house window. It bore the following words: "Sold here—Old Tomb's ointment for healing bad legs, gathering breasts, eczema, wet and dry scurvy, sore hands and faces, boils, cuts, burns, bruises, and all wounds. Sole proprietor, M. E. Darby, 21, Kirkland Street, St. Helens. Worth a King's ransom. Unfailing remedy for chilblains, etc." He went into the house and purchased from the defendant a box of the ointment advertised in the window, and he charged him 2d. for it. There was no medicine stamp on the label. He sent the box to the Government Laboratory in London. At that time there was no licence for the sale of medicines in force for the defendant's premises. Defendant said the ointment was good for all the complaints specified.

Geo. Sleathe said, as supervisor of Inland Revenue, he called upon defendant to see if he would comply with the terms of the Commissioners. He asked that the matter should be delayed for a time, and the end of June was given him.

Defendant submitted that the case ought never to have been instituted. The Commissioners had decided the case, and their penalty was 10s., and he maintained that they should have taken action in a civic court to recover the money.

The Chairman fined the defendant £1 and costs in each case.

On Wednesday, July 15, 1903, at the Marlborough Street Police Court, before Mr. Plowden, John E. Jewell, chemist and druggist, Haymarket, London, S.W., was charged at the instance of the Commissioners of Inland Revenue with selling twelve dutiable medicines unstamped. Mr. Denniss appeared for the prosecution, and the defendant conducted his case in person, pleading guilty in respect of nine of the articles complained of.

The preparations were:—Heppell's compound iodised sarsaparilla blood-pills, Dr. Auber's golden seeds, Dr. Auber's pile-suppositories, Heppell and Co.'s corn-plaster, Brou's injection, Vinolia cream, Injection of matico, Sirop de chloral de Follet, Dr. Auber's iron suppositories, Pâté pectorale au lactucarium, Papier Fayard et Playon, Marion Sim's apiol-and-steel pills.

The Defendant at first claimed exemptions for the sirop de chloral on the ground that it was not a secret remedy, but later pleaded guilty in respect of this preparation. He said that his assistants had instructions to stamp everything, and the neglect was probably due to an oversight.

Mr. Plowden imposed a fine of £1 and 2s. costs in each of the eleven informations, the twelfth claim not being pressed by Mr. Denniss.

High Court of Justice—King's Bench Division.

Smuggling of Saccharin.

The Crown v. White, White, and Child.

On Thursday and Friday, July 16 and 17, 1903, before Mr. Justice Lawrance and a special jury, a case was heard in which the Attorney-General, on behalf of the Crown, filed an information to recover penalties under the Customs Consolidation Act, 1876, from the defendants, Messrs. Robert James White and John George White, the proprietors of the London Essence Company and Kops Brewery, and Mr. Joshua Frederick Child, Messrs. White's manager, for being in possession of 696 lb. of saccharin on which duty had not been paid, which had been smuggled into the country subsequent to the Finance Act of 1901. The defendants pleaded "Not guilty."

The Attorney-General (Sir R. Finlay, K.C.), the Solicitor-General (Sir E. Carson, K.C.), and Mr. F. F. Daldy appeared in support of the information; and Sir E. Clarke, K.C., and Mr. C. C. Scott were for the defendants.

The Finance Act of 1901, which came into operation in April of that year, imposed a duty of 1s. 3d. per ounce, or 20s. per lb., on saccharin, a substance which was 550 times sweeter than sugar. In June, 1901, on various occasions, consignments of cases described as containing "chemical products" or "foot powder," and being free goods, were delivered at Southampton. These cases came under the observation of the examiners of Customs and were traced from Nottingham to the premises of the London Essence Company in George Street, Camberwell, and thence to the premises of Kops Brewery at Fulham. Mr. Starkey, Solicitor to the Customs, on August 30 paid a visit, in company with Inspector Fox, to the premises of the London Essence Company, where he saw the defendant, Mr. Child, Messrs. White's manager. On Mr. Starkey's informing him that he knew the defendants had received eleven cases of smuggled saccharin at the price of 23s. 6d. per lb. from Firmenich, Mr. Child acknowledged that that was so. Mr. Child explained the matter by saying that he had met Firmenich abroad, and that later he had called on him in London and offered this saccharin at 23s. 6d. per lb., saying that it had been imported before the duty was imposed. It appeared that these cases of saccharin, in being forwarded from Nottingham to the London Essence Company, were invoiced as resorcin. It also appeared that the market price of saccharin at the time was 52s. per lb. The value of the 696 lb. received by the defendants was £1,809 12s., and the penalties recoverable under the Customs Consolidation Act of 1876 were treble the amount of the duty payable, or £5,428 16s.

The defendants' case was that they had no knowledge that the saccharin was smuggled, and that there was no intent to defraud. Mr. J. G. White had taken no part in the business of the London Essence Company or Kops Brewery, and Mr. Robert White's knowledge of the transaction in question was limited to the conversation he had had on the telephone with his manager, Mr. Child. The reason that the "saccharin" had been invoiced as "resorcin" was that they had bound themselves to buy saccharin only of the Saccharin Corporation, and it was therefore advisable to conceal the fact that they were buying elsewhere.

The jury found Robert James White and Joshua Frederick Child guilty, and John George White not guilty.

Judgment was given for the Crown against both the guilty defendants for £4,176, the amount the Attorney-General said that the Crown claimed.

POISONING CASES AND INQUESTS.

The deaths by poisoning reported in the seven days ended July 22, 1903, number fourteen, thus:—

Poison.	Accident.	Suicide.
Alcohol	1	—
Carbolic Acid	1	2
Chloroform	2	—
Cocaine	1	—
Hydrochloric Acid	1	1
Hydrocyanic Acid	—	1
Mercuric Chloride	1	—
Ptomaine	2	—
Kind not stated	—	1
Total	9	5

Alcohol.—Whisky caused the death of a child at Glasgow.

Carbolic Acid.—A woman at Blackburn, and another at Leeds, committed suicide by taking carbolic acid. A woman at Stratford, E., who was short-sighted and kept carbolic acid in a kola bottle, drank carbolic acid in mistake for stout.

Chloroform.—A man died in the West London Hospital under chloroform. An anæsthetic of chloroform and ether caused the death of a woman in St. Bartholomew's Hospital.

Cocaine.—The wife of Mr. W. H. Pemberton, analytical chemist, Seacombe, died from "heart-paralysis, caused by an overdose of cocaine taken by misadventure."

Hydrochloric Acid.—A Jewess at Shoreditch committed suicide by taking spirit of salt. A woman at Enfield took the same acid in mistake for whisky.

Hydrocyanic Acid.—An under-butler to the Countess of Warwick committed suicide by taking prussic acid.

Mercuric Chloride.—A photographer at Lambeth accidentally took a solution of corrosive sublimate instead of vinegar.

Ptomaine.—Two young children died at Paddington and Hornsey respectively from ptomaine poisoning.

Attempted Suicides.—A number of persons attempted to commit suicide by taking such substances as carbolic acid, hydrochloric acid, laudanum, oxalic acid, and zinc sulphate.

PRACTICAL NOTES AND FORMULÆ.

Ink for Celluloid.

Powdered tannin, 15; dry ferric chloride, 10; acetone, 100. Dissolve the tannin and the ferric chloride separately, each in half the acetone, and mix the solutions.—*Rev. Med. Pharm.*, **10**, 727.

Betton's Dentifrice Powder.

Cuttle bone, powdered, 4 lb.; powdered orris root, 4 lb.; prepared chalk, 1 lb.; musk, 7 grains; rose oil, 48 minims; lavender oil, 48 minims; carmine solution, *q.s.*—*Amer. Drugg.*, **42**, 222.

Cements for Porcelain and Glass

(1) Quicklime, 10; fresh white of egg, 25; plaster of Paris, 55; water, 10. Reduce the lime to powder and rub it down with the white of egg; add the water, and quickly incorporate the plaster. Use at once. (2) Freshly prepared casein, 100; sodium silicate, syrupy, *q.s.* Mix the casein in a mortar with sufficient sodium silicate solution to produce a honey-like mass. The addition of 5 parts of magnesia to every 100 parts of this mixture gives a good cement for meerschaum.—*Amer. Drugg.* **42**, 222.

PATENTS AND TRADE MARKS.*

New Patent Applications.

SURGICAL AND OTHER NEEDLES (No. 9,995, of 1903).—J. A. Nelson, Owensboro', Daviess, Kentucky, U.S.A. Relates to means for preventing the laceration of the flesh by the thread during the operation of stitching up a wound. This object is attained by means of a needle formed with a suitable eye and a longitudinal bore at the end, grooves being formed in the side of the needle between the eye and the bore whereby a thread may be passed through the eye and along the bore in such a manner as not to extend beyond the lenticular walls of the needle.

STERILISING AND PACKING SURGICAL ABSORBENT DRESSINGS (No. 10,239, of 1903).—R. W. Johnson, 38, College Avenue, New Brunswick, New Jersey, U.S.A. Relates to dressings of cotton gauze and absorbent cotton lint, which are rendered antiseptic in the usual manner. The material is then folded upon itself in a zigzag manner so as to reduce the width, and laid upon strips of tissue paper, which are folded over it, completely covering it. The whole is then rolled up tightly and again sterilised. By this means the material is completely protected from dust and germs. In using the material from the roll it is only necessary to uncover the exact quantity to be used.

CRUTCHES (No. 10,421, of 1903).—J. McAllister, 35, Darnley Road, Barrhead, and J. Parkhill, 13, Darnley Road, Barrhead. The outer cover or covers of a crutch are secured to the socket by means of wires attached thereto, the ends of which engage under the lips at either end of the socket and so hold them in position. The covers are inflatable.

AMBULANCE OR LITTER (No. 10,539, of 1903).—S. Kay and A. E. Brindley, Public Health Department, Parsons Lane, Bury. Consists of a sheet, preferably formed of jute or similar material, and provided with handles or loops for carrying purposes. Two bands, about 7 in. wide, are attached to the sheeting to give extra support to the shoulders and hips of the patient. The sheet is provided at one end with a folding foot-piece or flap, which may be doubled over and secured to the sheet. Two sets of handles are provided; one set for the purpose of carrying the ambulance by hand, and the other set for the purpose of suspending it from poles. The chief advantages of this ambulance lie in its flexibility, strength, and the absence of leather or other material liable to damage.

MEDICATED SWEETMEATS TO RELIEVE PULMONARY, CHEST AND THROAT DISEASES (No. 11,264, of 1903).—M. Bjornstad, College Road, Auckland, New Zealand, and J. Stacey, of Mount Street, Auckland, New Zealand. Consists of 1 lb. of sugar, 4 oz. of extract of malt, 2 oz. of butter, 2 gr. of cream of tartar, or as an alternative 2 oz. of vinegar, and from 140 to 280 minims of beechwood creosote, with the addition—where the confectionery is to be specially used for asthma—of 1 oz. of extract of ginger or of ground ginger, 1 drachm of *Grindelia robusta*, 1 drachm of quebracho, and 1 drachm of yerba santa.

NOTE.—Opposition to the grant of any of the above-mentioned Patents must be filed at the Patent Office on or before August 24, 1903.

New Trade Mark Applications.

HAND, ARM, AND SNAKE DEVICE, for disinfectants, by McDougall Brothers, 68, Port Street, Manchester. 253,095.

GERMELINE ("Germe" disclaimed), for disinfectants and disinfecting soap, by Sieber and Co., Lee Mill, Shawclough, Rochdale. 254,856.

EKTOGAN, for oxygen preparations for healing and nutritive purposes, by Kirchhoff and Neirath, Oranienburgerstrasse 23, Berlin. 253,071.

CARLSBURGA ("Carlsburg" disclaimed), for a mixture of artificial salts of Carlsbad and Homburg with volatile carminative, for use as a medicine, by T. M. Davis, 241, Lewisham High Road, S.E. 253,366.

CONSO, for medicine for human use, by T. P. Baker and A. E. Baker, both of Olney House, Kettering, and others.

NOSIQUE, for a medicine for human use, by L. J. Holland and Co., 103, Tollington Park, N. 254,693.

CALIFIG label, for chemical substances prepared for use in medicine and pharmacy, for California Fig Syrup Company, 324, Hayes Street, San Francisco, U.S.A. 255,006.

LITHYOL, for chemical substances prepared for use in medicine and pharmacy, by Chemische Fabrik vormals Sandoz, 60, Fabrikstrasse, Basel, Switzerland. 255,103.

LACVITUM ("Lac" disclaimed), for powdered milk for use as food and preparations of same, by Prideaux's Pure Casein and Life Food Company, Limited, Motcombe, Dorset. 254,889.

PEAULINE ("Peau" disclaimed), for a toilet preparation to be used as a massage fluid, by T. M. Davis, 241, Lewisham High Road, S.E. 253,367.

BLACK PRINCE (254,471) and **CARNAVAL** (254,970), for perfumery, etc., by Lever Brothers, Limited, Port Sunlight, Cheshire.

LEMONA label ("Lemon" disclaimed), for a toilet cream, by Lemona, Limited, 13, Bartlett's Buildings, Holborn Circus, E.C. 254,710.

TREEK-A-TRIQUE, for perfumes, perfumed powders, and perfumed soaps, by W. F. Charles, Baxter Gate, Loughborough. 254,797.

NOTE.—Opposition to the registration of any of the above-mentioned Trade Marks must be filed at the Patent Office on or before August 24, 1903

NEW REMEDIES.

THE NOTES in this column embody recent suggestions in therapeutics, for the information of dispensers; they deal with novel applications of drugs and preparations in common use, in addition to new remedies strictly so-called.

Injection of Camphor Guaiacol.—Matignon and Bernex have prescribed the following injection as an antithermic in the initial stages of certain affections. Guaiacol, 1; camphor 5; olive oil, 150. Twenty grains of this is injected into the subcutaneous conjunctive tissue. The antipyretic effect is prompt and lasting.—*Journ. Pharm. Chim.* [6], **17**, 521.

Aspirin in Rheumatism and Sciatica. — Dr. E. Manser Sympson has obtained good results with aspirin in the treatment of rheumatism, sciatica, lumbago, and similar affections. It proved specially valuable in the treatment of the two last-named, doses of 12 gr. repeated from three to six times being sufficient, in most cases, to effect a cure in young or middle-aged cases. In elderly cases, repeated 8 gr. doses gave relief, but did not bring about a complete cure. Muscular and chronic rheumatism were also favourably influenced by aspirin, and satisfactory results were obtained in osteo-arthritis. In one case of acute rheumatism aspirin at once relieved the pain and excessive perspirations, but did not appear to have much influence on the temperature. It has no depressing effect on the heart.—*Quart. Med. Journ.*, **11**, 117.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and 'Patent Notes for Inventors' free on application.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

The Drug Sales.

London, Thursday, July 23, 1903.

The chief characteristics of to-day's Drug Auctions were the large quantities of goods offered and the slowness with which bids came. There were eighteen catalogues, comprising old and new drugs, and the supply was greater than the demand. As a result, in the majority of cases, sales were only made when goods were offered cheaply. Large quantities of Gum Benjamin, Rhubarb, Wax, Honey, Cardamoms, and Senna, amongst other things, were catalogued; the numbers of packages are listed below. The retailer will obtain a better idea of the quantity of Senna offered for sale from the fact that the approximate weight of the total number of packages was 26 tons; that is to say, sufficient to make nearly half a million pints of the B.P. infusion, quarter of a million pints of tincture, over 150,000 lb. of compound liquorice powder, and who can calculate how many billion cups of Senna tea? The sale, without reserve, of over 200 cases of Calumba Root leaves the market pretty clear. Ipecacuanha was slaughtered, and fuller particulars of a drop of 6d. to 9d. per lb. are recorded below. One broker withdrew a quantity of this drug which had been catalogued "without reserve." Cardamoms are about 2d. dearer. Moreover, there is a big demand privately. There were no bids for Menthol, which was bought in at firm prices. Oil of Peppermint H.G.H. was sold without reserve at 3d. below last sale's price. The quantity of opium, which was also "without reserve," was 80 bricks, sea damaged, and realised 8s.

	Offered.	Sold.
Aconite Root	14	4
Aloes	80	21
Ambergris	—	6
Areca Nuts	148	0
Araroba	15	15
Asphaltum	68	0
Australian Sandarac	14	0
Balsam Copaibæ	—	9
Balsam Peru	23	0
Balsam Tolu	4	0
Betel Nuts	10	0
Buchu Leaves	37	1
Calisaya Bark	12	0
Candle Nuts	36	0
Cardamoms	501	90
Cascarilla Bark	29	0
Cassia Fistula	13	13
Cassia Oil	4	0
Castor Oil	77	7
Castoreum	2	0
Canella Alba	14	0
Cedarwood Oil	7	0
Chalmoogra Oil	8	0
Chiretta	10	0
Cinnamon Oil	7	0
Citronella Oil	4	0
Colocynth	16	0
Colombo Root	242	219
Croton Seed	—	9
Crown and Grey Bark	43	29
Cubebs	31	0
Cuttle Fish	21	16
Dragons' Blood	36	2
Egg Albumen	3	0
Ergot of Rye	24	2
Eucalyptus Oil	43	0
Galangal Root	9	9
Gamboge	16	0
Gentian Root	7	0
Guaza	20	0
Gum—	68	0
Arabic	34	
Benjamin	163	49
Elemi	5	0
Guaiacum	2	5
Kino	8	0
Mastic	2	0
Myrrh	55	4
Honey	482	61
Hyoscyamus	7	0
Ipecacuanha	79	34
Jalap	—	40
Kamala	2	2
Lemongrass Oil	11	0
Lime Juice	15	0
Lime Oil	5	2
Liquorice Root	2	0
Menthol	4	0
Do. Crystals	6	0
Nutmegs Oil	10	0
Opium (bricks)	80	80
Orange Peel	25	2
Orris Root	10	16
Papaw Juice	1	0
Peppermint Oil	29	29
Petit-Grain Oil	4	0
Pulp	27	0
Puree	2	0
Quassia Chips	—	20
Red Bark	4	0
Rhubarb	100	8
Rose Oil	21	3
Russian Aniseed	40	0
Sarsaparilla	75	64
Sassafras Oil	10	0
Scammony	6	0
Do. Root	115	0
Seedlac	79	79
Senna	31 126	72
Do. Pods	12	10
Singapore Wood Oil	138	0
Squills	22	22
Storax	13	0
Strophanthus Seed	23	0
Tamarinds	140	29
Tonquin Beans	16	0
Do. Musk	5	1
Turmeric	60	169
Valerian Root	11	0
Wax	57 590	110
Wintergreen Oil	4	4
Wood Oil	—	138
Yellow Bark	45	0

ALOES.—Bright Capey Curaçoa realised 17s. to 18s. per cwt., and fine bright liver 32s.

AMBERGRIS.—A tin containing $1\frac{1}{4}$ oz. fair flavour grey was sold at 85s. per oz. Black undeveloped realised 25s. to 27s.

BALSAM COPAIBAE.—9 cases were sold at 1s. 4d. per lb.

BUCHU LEAVES.—11d. was the price asked for good green rounds; 1 bale yellow sold at $8\frac{1}{2}$d.

CALUMBA ROOT.—Over 200 bags were offered without reserve; these sold at 8s. 6d. for dull sorts, up to 14s. 3d. for good medium bright.

CARDAMOMS—Were dearer; medium sized fetched good prices, 1s. 4d. to 1s. 7d.; bold were not wanted. Decorticated fetched up to 1s. 2d. for good; fine were held for 1s. 3d.

CASSIA FISTULA.—13 bags realised 30s. per cwt.

DRAGONS' BLOOD.—7 cases of good bright, part reboiled, lump were offered, but not sold, £10 5s. being the lowest price which would be accepted. Dull lump, £7. Reeds, R.S.V. mark, were firmly held at £9.

ERGOT OF RYE.—Fair was bought in at 1s. 1d.

GAMBOGE.—16 small cases of fair Siam pipe were offered (this is practically the only lot here), and held for £18, a bid of £16 being refused.

GUM BENJAMIN.—Fair Sumatra were sold at £5 17s. 6d. to £6 2s. 6d., medium ditto £5 5s. 0d., and ordinary thirds were bought in at 95s.

HONEY.—A quantity of Jamaica was sold at from 18s. to 24s. 6d. per cwt., according to quality.

IPECAC.—Whilst 5s. 9d. was generally asked for good quality Rio one broker gave way and sold a good quantity at 5s. per lb. for natural; cultivated was sold for 4s. 9d.; Cartagena was firmly held for 4s. 5d. per lb.

JALAP.—A bid of 4d. per lb. was accepted for fair Vera Cruz (without allowances or discount).

OIL OF PEPPERMINT.—H.G.H. sold at 11s. 9d. per lb., without reserve. Japan Peppermint Oil was bought in at 8s.

QUASSIA CHIPS.—20 bags sold, without reserve, at 7s. 9d.

RHUBARB.—A small quantity of Canton pickings (dark and spongy) sold at 8d.; other grades were bought in at last sale's prices.

SARSAPARILLA.—A quantity of Jamaica sold at from 9d. to 1s. for fair quality, slightly damaged.

SEEDLAC.—A number of bags of Madras (part blocky) realised from 90s. to 96s. per cwt.

SENEGA.—Spot price is 3s. 2d. per lb., and there is very little stock, scarcely sufficient to last till the new arrives. To arrive, from 2s. 6d. to 2s. 9d. is asked from the other side.

SENNA.—Small to medium spotted Tinnevelly leaf sold with good competition up to $2\frac{1}{2}$d.; dark pods fetched $1\frac{1}{2}$d.; fine pods $2\frac{1}{2}$d. Alexandrian siftings were bought in at 2d.

TURMERIC.—Madras sold at 10s., and some bags, without reserve, at 8s.

WAX.—Several barrels of Jamaica realised £7 12s. 6d. to £7 15s. 0d. per cwt. A number of cases of Beeswax were sold for £6 to £7 15s. 0d.

WOOD OIL.—All offered was sold at from $2\frac{1}{4}$d. to $2\frac{3}{4}$d. per lb.

General Markets.

THE GENERAL MARKET IN DRUGS AND CHEMICALS remains dull. Opium is very firm, so is Morphine. Menthol is as yet practically unchanged. Quinine is slightly higher. A few quotations are given below.

ARECA NUTS—Did not sell, but prices were firm at last sale's prices.

BORACIC ACID.—Crystals, 22s.; powder, 24s.

BORAX.—Crystals, 13s.; powder, 14s.

BROMIDES—In steady demand. Potassium, 1s. $11\frac{1}{2}$d.; Sodium, 2s. $2\frac{1}{2}$d.; Ammonium, 2s. 3d.

CAMPHOR.—Japan crude is higher at 176s. There is no difference in the price of refined. Bells, 2s. 3d.; Flowers, 2s. 2d. 1d. less for ton lots.

CASCARA.—A sale has been made at 55s. for three year old.

CANNABIS INDICA.—The old stock is now nearly finished, sales having been made privately at 3s. 3d. this week.

CARBOLIC ACID—Remains quiet. 34° to 35° C., 5d. per lb.; 39° to 40° C., 5¼d.; detached crystals, 39° to 40° C., 6¾d., in 2½-cwt. drums; crude, 60° F., 1s. 6½d.; liquid (95 to 98 per cent.) of pale straw colour, 1s. 3d. per gallon.

CITRIC ACID—1s. 1d.

COCAINE—Is firm at 17s. 6d.

CODEIN—10s.; an advance is expected.

CREAM OF TARTAR—Is a trifle easier in the absence of orders. First white crystals on spot, 87s.; powder, 89s.; 98 per cent. foreign powder, 91s.; 95 per cent., 88s.

GINGER.—At the auction 718 packages of Cochin were offered, and 104 packages were sold, for the most part without reserve. Washed rough fair medium and small fetched 31s. to 31s. 6d. Japan: 226 bags were offered, and 40 bags sold, but the price was not disclosed. There was little demand for Jamaica, of which about 700 packages were offered and 150 sold; good bold bright, 62s. to 65s.

GLYCERIN—67s. 6d. to 68s. per cwt. The latter figure is for ½-ton lots.

IODIDES—Unaltered. Potassium, 8s. 9d.; Sodium, 9s. 10d.; Iodoform, 11s. 8d.; Iodine, Howard's Resublimed, 9s. 9d. to 10s.

MENTHOL.—Sales have been made down to 23s. 6d. per lb. for Kobayashi, but the market is still hard, and 24s. is quoted; somewhat less would, however, probably be accepted.

MERCURIALS—Steady at unchanged prices Calomel, 3s. 0½d.; Corrosive Sublimate, 2s. 8½d.; White Precipitate, 3s. 7d.; Red ditto, 3s. 4½d.

MORPHINE—Is very firm at 4s. 6d.; makers would probably hesitate to accept large orders at this figure.

OPIUM—Still remains very firm at the advanced price of 10s. for manufacturing. It is reported that 11s. 6d. has been paid in Salonica.

OTTO OF ROSE.—The latest reports are to the effect that the Bulgarian rose-harvest is an exceptionally good one. What the effect of this will be on the prices is difficult to state at present. It would seem not unreasonable, however, to expect that these would be somewhat lower than those of last year. On the other hand, there are rumours!

OXALIC ACID.—2⅝d. to 2¾d. net, delivered free London.

QUICKSILVER—Unaltered at £8 12s. 6d.

QUININE—Rather harder in the second-hand market, B&S and Brunswick Sulphate for December delivery being quoted 11½d. per oz., while makers of these brands still quote 1s. per oz. Howard's Sulphate is quoted at 1s. 3d. to 1s. 4d. in 1-oz. phials.

SODIUM BICARBONATE.—£7 5s. per ton landed. Howard's Crystal or Powder, 45s. per cwt.

STROPANTHUS SEED.—Sales have been made of Kombé at 5s., at which price 4 bags were offered in sale.

TARTARIC ACID.—English on the spot, 1s. 1½d.; foreign, 1s. 1¼d.

CINCHONA BARK.—At to-day's auction at Amsterdam the quantity offered was small. The sale opened at about parity of last sale.

Foreign Markets.

AN OPIUM TAX AND ITS CONSEQUENCE.—In his report on the trade of Swatow for the year 1902, Mr. Acting-Consul Willis states: "The import of foreign opium in quantity is much the same as in 1901, though its sterling value is less by approximately £30,000. It is somewhat surprising that there has not been a considerable falling-off in the importation of the foreign drug. A proclamation was issued in July last by a recently established Revenue Bureau for the Kuangtung Province, announcing the institution of an additional tax throughout the province upon prepared opium, which they called a "boiled opium tax," but for convenience and economy in the expenses of collection, they started to levy this tax on the crude opium at the port of entry at the rate of 120 Haikuan taels on each tael weight (1·33 oz.). His Majesty's Acting-Consul protested against the tax, as being contrary to the additional Article to the Chefoo Convention, the native dealers too were unwilling to pay it. They consequently refused to take delivery of the drug, and for a period of two or three months all import ceased. Matters were ultimately brought to a head by the illegal seizure by the armed runners of the local branch of the Revenue Bureau of two chests of Bengal opium imported by the British firm of Messrs. Bradley and Co., when on their way from the Customs opium godown to the premises of the firm. The protests of His Majesty's Consul-General at Canton against this action, doubtless combined with the strong native opposition to the tax, have succeeded in obtaining its withdrawal, at any rate for the present."

THE OPIUM OF BAGHDAD.—In his report on the trade of Baghdad for the year 1902 the Acting British Consul-General states that the crop of opium was exceptionally good both in quantity and quality, and about 777 cases were exported to China (chiefly Hong-Kong), while 203 cases were shipped to Europe. Prices in Hong-Kong varied from 560 to 800 dol. per case for fine opium, the latter price being touched in November. The cause of the rise was speculation. Prices here ranged from £45 to £78 per case of 140½ lb.

CLOVES.—The output of cloves from the Island of Pemba (Zanzibar) during the year 1902 was 7,462,374 lb. The crop was the scantiest within a period of ten years. The 1901 crop was 10,564,925 lb.

OTTO OF ROSE.—The British Consular officers in Bulgaria, in their report on the Trade of Bulgaria for the year 1902 state as follows—"The steadily increasing prosperity of the attar of rose industry is shown by the fact that since 1895 the area under cultivation has nearly doubled, having reached the figure of 13,700 acres. Last year's crop was expected to be one of the largest on record, but a week of scorching winds during harvest time is calculated to have reduced the yield by some 25 per cent. The damage done to the quality of the roses is shown by the fact that 360 lb. of flowers were required to produce 1 oz. of attar—or twice the usual quantity. The yield totalled about 75,000 oz., as compared with 135,000 oz. in 1900. Some 13,000 native stills were employed on last year's crop, which is estimated at 25,000,000 lb. of rose flowers, which were sold at the low price of a fraction over ½d. per lb. Modern stills cannot at present be worked at such a profit as the native variety, as the output does not cover the outlay on the former, whereas the latter are in the hands of small distillers who supply their own labour and fuel, and are able to undersell their modern rivals by 25 to 30 per cent. Prices for last year's yield ruled low, namely, between 15s. 6d. and 17s. 9d. per oz. Consequently growers and exporters have held back some 10,000 oz. The low prices of the last four years are accounted for partly by the competition of cheap synthetic and artificial oils, and partly by the practice of sophistication, which, it is to be hoped, the stringent measures expected to be adopted by the Government will succeed in checking. For the prevalence of adulteration, however, consumers are largely themselves to blame, and it should be noted that buyers can always obtain the pure article if they choose to pay for it."

Prospect of the Crops.

The following is an abstract from a report on the medicinal herb crop published by Messrs. Stafford Allen and Sons, Limited:—Aconite is a fair average crop. Belladonna is later than usual, and has suffered much from the late spring frosts. The crop is below the average. Conium is plentiful, and digitalis does not seem seriously affected. Elaterium has been much damaged by late frosts, but hyoscyamus, on the whole, is a good crop, though a portion of it has suffered severely. *Lactuca virosa* is rather late, but an average crop. With lavender the young plantations are looking well, but older plantations show signs of falling off. Poppies were damaged by heavy rain and hail in June. Pennyroyal promises a good crop, and rhubarb appears unaffected and promises well. Rosemary looks best on high exposed ground, and not so well in other situations. Roses are later than usual; picking has only recently commenced. Savin is looking well.

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

Liability to Medicine Stamp Duty.

After consultation with several local chemists, it appeared to me that the irritation against the Board of Inland Revenue was to a great extent due to want of consideration. The best thing possible to chemists from a business point of view is to have their qualification recognised by a great public department, and distinguished from the company drug store man, as Somerset House appears to be doing. Besides which, really chemists have sailed very close to the wind, and it has been very difficult for common sense to say where liability began, and in the case of articles of 1s. in value (1s. 6d. would be better) the public can and will pay an additional 1½d. As for the penny trade, the adoption of any recognised formula seems to meet the objection, with the additionable advantage of being confined to chemists. Personally I am inclined to think that it would be of incalculable benefit to the public if the cheap and indiscriminate abuse of drugs could be checked. I am very doubtful about the benefit to either vendor or purchaser of the penny box of pills. If the Society, however, could see its way to publish annually an official formulary, as suggested, it certainly would be of very great use, and our friends could then supply the chief cough mixture or antibilious pills *ad lib.* I think the Inland Revenue can be safely left alone, and may they go on in the way they have started. I am, of course, only speaking for myself.

Blackpool, July 15, 1903. Chas. Turver.

I send you the official answer to our query addressed to the Inland Revenue Authorities on the interpretation of a clause in their previous answer.

Preston, July 22, 1903. Charles A. Arkle.

[Copy of Letter.]

Inland Revenue,
Somerset House, London, W.C.
15th July, 1903.

Sir,—In reply to your letter, dated the 8th instant, I am directed by the Board of Inland Revenue to acquaint you that a medicinal drug uttered or vended entire, without any mixture of composition with any other drug or ingredient whatsoever, may be sold unstamped by any person who holds a patent medicine licence. The class of persons therefore to whom the exemption in favour of entire drugs applies is wider than the class of persons affected by the exemption in favour of "known, admitted and approved" remedies.—I am, Sir, your obedient servant,

H. Bartlett,
Assistant Secretary.

Mr. C. A. Arkle.

The formulary suggested to be issued under the auspices of the Pharmaceutical Society is without doubt what is necessary. There may be a few difficulties to carry out the idea, but most of them could be overcome. A competent staff to select and compile the formulæ could be provided by the Pharmaceutical Society. Then the submitting the book for the consideration of the representative bodies of chemists could also be arranged, but time and money seem to me to present the greatest difficulties—time, because it is imperative to have such a book of reference as soon as possible, so as to get the authorities at Somerset House to agree with and be able to refer to it as well as chemists, and thus prevent that confusion of opinions which causes so much trouble; lastly, money—who is to pay? The funds of the Society cannot be expected to bear the expense. The only practical suggestion I can think of would be—(1) for a guaranteed number of copies to be ordered, the guarantee being the part payment of all such orders; or (2) the issue of the book or formulary in fortnightly or monthly numbers, at a reduced price to members of the Society and full price to non-members; and as a vast number would be compelled to purchase, an immediate flow of money would ensue, and provide the funds required to remunerate the compilers, publishers, etc.

London, July 20, 1903. C. H. Fentiman.

Upon reading my Journal this morning I was astonished to see that the General Purposes Committee on Thursday did not think it expedient to recommend the Council to approach the Inland Revenue as regards the recent decision of that Board. Had the Committee consisted of ordinary chemists and druggists I believe they would have decided otherwise. Hundreds, nay, more, of chemists throughout the length and breadth of the land will be wholly handicapped if this is to be the state of things. Am I to be told, after being behind the counter for nearly forty years, that I cannot supply pennyworths of liver, head and stomach, or gout pills? I should have had no particular objection if shilling goods were mentioned. I have a large portfolio of labels, all of which have been submitted to Somerset House. I therefore trust our members, from John o' Groat's to Land's End, will impress on the Council to represent to the Board of Inland Revenue the impossibility of such an injudicious opinion, not only in preventing mistakes, but also the hardship on the working classes. I am sure that this opinion will be endorsed by chemists generally. In some poor neighbourhoods in London like this we are asked all day long for pennyworths of pills. Why, the Charter itself, if I read it aright, was to watch the interests of its members. What else do we subscribe to the Society for? I fail to see.

London, N., July 17, 1903. W. N. G. Lance.

It is a matter of deep regret that the General Purposes Committee intend recommending the Pharmaceutical Council to refrain at present from approaching the Inland Revenue authorities with regard to the altered conditions of enforcing the provisions of the Stamp Act. As a member of the Society, I beg to record my protest against the masterly inactivity of the Society in the interests of its members. It is well known how slowly move the wheels of Government coaches, and it will require all the time between this and the end of the year to thresh out the matter properly with so formidable a section as Somerset House. This neglect to immediately perform part of the duty imposed by the Charter of Incorporation reflects little credit upon the gentlemen elected to defend our interests. The Society should include every man who holds its diploma, and in face of this decision to do nothing, there can be no further excuse for wonderment that the percentage of members is so small. I venture to say that if this recommendation be confirmed by the Council, it will deter more new members joining than any decision of recent years, and probably result in many present members not renewing their support. The decisions in the cases of Ransom *v.* Sanguinetti and Farmer *v.* Glyn-Jones, together, form the brighest commercial silver lining in the black cloud of pharmacy in the present generation, and the utmost advantage should be taken conjointly by the proper authorities to advance the welfare of those chemists who are properly qualified. It is not my duty to more than indicate the course which should be pursued, nor would I be so presumptuous, or foolishly show the illegitimate competitors how to defend their cause. As the case stands they have a very simple means of overcoming their difficulties, but we have a right to expect our Society to advance our calling and defend our interests now that the time is opportune.

London, N.W., July 20, 1903. C. E. Pickering.

In reading Mr. Kirby's interesting and instructive paper on the recent medicine stamp duty decisions, I was struck with the fact that the writer does not appear to have kept himself fully up to date in his subject. Thus, he says it may very probably be found that in practice other medicines besides those in the British Pharmacopœia and the Codex are within the scope of the third exemption; but the Board of Inland Revenue has already stated (see *P.J.*, June 6, p. 798) that the exemption will apply to preparations made in accordance with formulæ published in any standard book of reference. Similarly, Mr. Kirby seems to be ignorant of the fact that the Board has stated (see *P.J.*, May 30, p. 771) that a chemist would be equally entitled to the exemption, whether the remedy was made by himself or purchased from a manufacturer. I agree with Mr. Kirby that it will be wiser for chemists to indicate the source of formulæ rather than have the worry of defending cases in the police-courts.

London, July 20, 1903. James Wilson.

A Dispensing Difficulty.

I should like, with your permission, emphatically to deny Mr. Ellis's statement that medical men "increasingly and unrestrainedly revile chemists." Speaking from forty years' experience, first as a chemist and later as a medical man, I affirm in the strongest possible way that medical men have the kindliest feelings and highest respect towards their pharmaceutical confrères. Of course, in common with everyone else, they thoroughly despise the quack, and, most of all, the quack chemist. No doubt in their case this contempt and abhorrence is greater than in the case of the general public, because the public simply consider them to be dishonest pretenders, but the medical man knows them to be infinitely worse. Mr. Ellis says that, "Now-a-days a knowledge of medicine can be acquired without attending college or university. The reading of an 'up-to-date book on medicine' is sufficient not only to impart a competent knowledge of medicine, but to render the chemist 'always a match' for the man who has spent five years—mostly doing practical work—in college and hospital." Does Mr. Ellis also affirm that a thorough knowledge of pharmacy can be acquired by simply reading a book on the subject without ever entering a druggist's shop or ever seeing a drug except castor oil, salts, and, may be, Gregory's powder? I think he hardly will, yet he stigmatises the medical man who denies that a competent knowledge of medicine can be thus acquired as a "stupid person." Truly someone is stupid, nay, worse than stupid, and I don't think it is the medical man. Mr. Ellis further says that "a surgeon-protagonist" by protesting against this assumption on the part of quack druggists brought upon himself a "torrent of abuse." Exactly so! Abuse is the favourite weapon of these gentry. Mr. Ellis says, "The public has at the present time much confidence in his (the chemist's) skill and learning." This I heartily endorse, but if Mr. Ellis heard, as we constantly do, the remarks of the quack druggist's poor dupes, he would see that this applied to the true legitimate merit of the non-quack chemist, whom Mr. Ellis terms "veritable puppets." I need hardly say that by quack chemists I do not mean the average chemist, who simply recommends the best remedy for what he thinks is a simple complaint. It is absurd to think that a person would run to the doctor for every slight ailment, and if he could not get advice from the chemist he would take that of a friend not nearly so competent to advise, or, worse still, would fly to an advertised quack medicine. In either case he would probably do himself harm, and certainly would allow time for the disease to get established. If he consulted an honest chemist he certainly would get no harm, and in a doubtful case would at once be advised to see a doctor. When I said that the medical man has the friendliest feelings towards the chemist I should also have said that the average chemist fully reciprocates this good feeling towards his medical friends. Of course, the quack chemist has no such liking, and amongst chemists, as amongst every other body of men, there are a few of those miserable beings who, with no ability or energy to raise themselves, are inordinately jealous of those who do elevate themselves; and a fortnight ago I really could not but think that some—one, at least—combined the two—the quack chemist and the jealous man, or why should an otherwise good letter be spoilt by jealous abuse, and the eminently quack contention that it requires no training to acquire a knowledge of medicine?

Newcastle-on-Tyne, July 21, 1903. T. H. Walker.

Poisoning Dogs and Cats.

I was much interested in the Veterinary Notes by "Centaur" on this subject in your last issue, and I wish to describe a method which he may not have thought of, but which may enable the more timid amongst my colleagues, to whom the operation may have been a nuisance and a worry, to perform the happy despatch easily and without risk. When HCN is administered by the mouth it is well known that animals will sometimes recover if they can obtain access to plenty of fresh air, and it has happened within my experience that a dog that was poisoned with HCN and dropped, apparently dead, into a sack, thrown into a cart, and kept overnight in a stable, was found very much alive and kicking next morning. "Centaur" mentions a "lethal chamber" filled with chloroform vapour, but objects to its slowness in operation. Has it never occurred to him that a lethal chamber may be made by HCN, which, being a blood and not a stomach poison, is inhaled direct into the circulation, and thus acts promptly and surely? This, then, is my method: Choose an open box of such a size that when the animal is in it very little air space is left. The box must be free from holes and nails upon the open edges, so that it will fit close down on an even floor. If the cat or small dog is brought in a basket, one need never see it; the acid can be poured over it, and the basket popped under the box. If the animal is free, it is easy, by a quick movement, to place the box over it, when it is easily kept down. The smaller the box in relation to the animal the less chance it has to struggle. A gimlet hole is then bored in the box, and the acid poured in by means of a thistle funnel. If any difficulty is experienced in getting the animal under the box, a cord may be tied to its collar or round its neck and passed through a hole in the box, when it can be pulled under without any risk of biting. I generally use about ʒii. of Scheele's acid. At first the animal if loose, smells around the lower edges of the box, in an instinctive desire for fresh air, but, with one or two dismal howls or piteous moans, he quickly falls unconscious and immediately expires. For safety's sake, I leave him in the vapour a minute or two, but an unfailing and invariable sign of death is the passing of water by the animal, due, I suppose, to the relaxation of the sphincter.

Oldham, July 20, 1903. James Lees.

THE STUDENTS' COLUMNS.

Lessons in Dispensing (2).

(4) ℞ Tinct. Quininæ Ammon.,				
Liq. Ammon. Acet.	aa	℥iss.	or	42·5 Ml.
Aq. Cinnamom	ad	℥vi.	or	1·7 Dl.*

Ft. Mist.

When ammoniated tincture of quinine is prescribed in an aqueous medium it is absolutely necessary to add a suspending agent, as otherwise the quinine hydrate (formed when this tincture is mixed with an excess of water) separates in clots which, adhere to the sides of the bottle. Further, when an aromatic water, as in above prescription, is ordered, mucilage of acacia, or of tragacanth, should never be used, since this would involve the leaving out of a considerable portion of the aromatic water. This prescription may be expeditiously and correctly dispensed by placing half of the ammoniated tincture in the bottle and shaking it over all the interior, so as to absorb any moisture (this will avoid drying of the bottle), then adding 12 grains (0·75 Gm.) of powdered tragacanth, using the remainder of the tincture to wash the gum from the neck of the bottle. Mix well by agitation, keeping in mind to insert the cork on such occasions, instead of putting a finger over the mouth of the bottle, and then add, all at once, the solution of acetate of ammonium (or an equal quantity of the cinnamon water) and again agitate. The remainder of the ingredients are then to be added in portions agitating after each addition.

(5) ℞ Potas. Chlor.	ʒss.	or	2 Gm.
Acid. Hydrochlor.	ʒi.	or	3·5 Ml.
Syr. Aurantii	℥i.	or	2·84 Cl.
Quininæ Sulph.	gr.xii.	or	7·5 Dgm.
Aq.	℥xii.	or	3·4 Dl.

Ft. Mist.

To the uninitiated a prescription of this sort is invariably a source of error. They may come to the conclusion that the prescriber means diluted hydrochloric acid instead of strong, and that he has written the sign for half a drachm instead of half an ounce in the case of the potassium chlorate, but they never take the view that the prescriber wishes a mixture of free chlorine and quinine sulphate. In reality he prescribes something more than these, since some chlorine peroxide is formed in the interaction between potassium chlorate and hydrochloric acid. This method of obtaining a solution of chlorine is chosen, however, on account of its convenience of manipulation. The full reaction between these two substances is represented by the following equation :—

$$4KClO_3 + 12HCl = 4KCl + 6H_2O + 3ClO_2 + 9$$

The method of dispensing this prescription is as follows :—Place the potassium chlorate in a dry bottle and add the acid, then insert a tight-fitting cork, and set the bottle aside for half an hour, agitating occasionally. One ounce of distilled water is then added, the cork replaced, and the bottle agitated for a minute or two. A larger quantity of water should not be added at first, because it means expelling from the bottle almost the same volume of chlorine. The loss should therefore be minimised as much as is possible. The remainder of the water, with the exception of 2 drachms, is added in portions of 1 ounce, agitating the bottle after each addition. The quinine sulphate is then mixed in a measure with the reserved 2 drachms of water, and sufficient of the mixture in the bottle added to dissolve it. The addition of the syrup of orange peel completes the operation. In dissolving a quinine salt by means of an acid, the salt should never be added to the acid solution. If this is done the quinine aggregates in hard lumps, and is somewhat difficult to dissolve. Always mix the quinine salt with some neutral liquid (water or a tincture) and then add the acid, solution being then instantaneous.

(6) ℞ Cocain.	gr. iv.	or	259 Mgm.
Pulv. Amyli	ʒi.	or	388 Cgm.
Glycerini	ʒviss.	or	2·3 Cl.
Aq. Destillat	ʒiss.	or	5·5 Ml.

Ft. Applic.

This prescription is simply a glycerin of starch with cocaine. The alkaloid is not, however, soluble in glycerin, and for this reason the sanction of the prescriber ought to be obtained to the use of an equivalent amount of cocaine hydrochloride (4·48 grains = 4 grains alkaloid, 290 Mgm. = 259 Mgm. alkaloid). Mix the glycerin and 80 minims (5 Ml.) of the water, and triturate with the starch in a porcelain basin. When thoroughly mixed place the basin over a bunsen flame and heat until a translucent jelly is formed, then cool. A pestle should be used for trituration, a stirring rod being practically useless for this purpose, and the stirring should be constant during the application of heat, and especially vigorous and rapid after the starch granules begin to swell. The cocaine hydrochloride is dissolved in the reserved portion of water, and the solution thoroughly mixed with the *cold* glycerin of starch.

(7) ℞ Camphor,				
Quininæ	aa	gr. i.	or	6·5 Cgm.

Ft. Pil., M. T. xii.

It must be noted that the alkaloid is ordered here. A very good mass is obtained by finely powdering the camphor, mixing the quinine, and 2 grains (13·9 Cgm.) of powdered tragacanth with it, then incorporating 2 drops of glycerin and massing with a sufficiency of syrup of glucose. When the ingredients of a pill are white, a colourless excipient should always be used.

BIRTHS.

Tweedy.—On July 20, at 63, Maryland Road, Bowes Park, N., the wife of S. C. G. Tweedy, of St. Bartholomew's Hospital, of a son.

Walton.—On July 16, 1903, Cissie, the wife of S. A. Walton, of 190, Broadhurst Gardens, W. Hampstead, of a daughter.

MARRIAGES.

Gammie—Strachan.—On July 15, at 36, Duff Street, Macduff, by the Rev. Adam Drummond, Congregational Church, Macduff, John L. Gammie, chemist, to Jemima, daughter of George Strachan, Macduff.

Tate—Saker.—On July 18, at All Saints' Church, Hertford, Anthony, only son of Johnson Tate, of Broom Park, Durham, to Madge, second daughter of William Saker, of Norwood, London, S.E.

Tingey—Wills.—On July 16, 1903, at the Parish Church Croydon, by the Rev. H. Scott Chignell, Mr. William Charles Tingey, to Edith Mabel Wills, second daughter of Mr. G. S. V. Wills, Principal of the Westminster College of Chemistry and Pharmacy, London.

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* Instead of adhering to millilitres and grammes, the metric equivalents have been purposely varied in order to make the student familiar with the metric system, and enable him rapidly and easily to convert decilitres and centilitres into millilitres, and *vice-versâ*. It requires but a little practice to be able to appreciate the simplicity and convenience of the metric system. For instance (*vide* Ex. 5), 2·84 Cl. are 28·4 Ml. (C.c.), 7·5 Dgm. are 0·75 Gm. 3·4 Dl. are 34 Cl., or 340 Ml. (C.c.).

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Soluble Essences (C. B.—92/7).—See MacEwan's 'Pharmaceutical Formulas,' which contains much information on the subject.

Prescription (S. A. M.—92/6).—There is no reason to suppose that the mixture would prove harmful, if taken in moderation.

Meat Juice (L. and H.—92/2).—Messrs. Francis Newbery and Sons, Charterhouse Square, London, E.C., are special agents for the preparation you name.

Destroying Worms and Slugs (S. A. M.—92/7).—Sprinkle the ground plentifully with powdered lime during dry weather, and repeat the operation in half an hour.

Hair Preserver (J. S.—91/33).—Hydrogen peroxide, 10 vols., is commonly used, but cannot be relied on to give a natural golden appearance. An infusion of quillaia bark is sometimes employed.

Medicine Stamp Act (W. H.—91/19).—The fact that a person is duly registered as a chemist and druggist is regarded by the Board of Inland Revenue as entitling him to the benefits of the exemption.

Heroin Hydrochloride (S. S. S.—92/8). — It is diacetylmorphine hydrochloride. The compounds known under the trivial names "heroin," "dionin," and "peronin" are all esters of morphine.

Information Wanted.

"Purifin" (G. B.—91/34).—Makers of or agents for.

"Ethyl Chloride" (J. L.—92/1). — Name and address of makers of glass tubes for the substance.

DEATHS.

Aylwin.—On July 11, Peter Aylwin, Chemist and Druggist, Haslemere. Aged 76.

Brooke.—On July 19, Thomas Noden Brooke, Chemist and Druggist, Rochdale Road, Manchester. Aged 40. Mr. Brooke had been medically attended recently for heart disease, but his death was in no way expected, and his family went away for their summer holiday on Saturday, July 18, leaving him at home. Much sympathy is felt for the bereaved family in the district. At the inquest, on Wednesday last, evidence was given by the widow, and by Albert Mills, chemist's assistant to Mr. H. S. Lockwood, 112, Rochdale Road, who stated that at noon on Monday, July 20, he received a note to the effect that deceased's shop had not been opened that morning. He went to the shop, got in by the back way, and found Mr. Brooke dead in bed. The medical evidence showed that death was due to heart disease, and a verdict of "Death from natural causes" was returned.

Day.—On July 10, John Edwin Day, Pharmaceutical Chemist, of Horncastle. Aged 27. Mr. Day, who had been a member of the Pharmaceutical Society since 1899, had acted as manager for Mrs. Richardson, of Dudley, for the past four years.

Barclay.—On July 19, suddenly, the result of an accident, at Endelberg, Switzerland, John Barclay, B.Sc., Pharmaceutical Chemist, of Osmotherly Cottage, Blackwell, eldest son of Thomas Barclay. Aged 36.

Haussknecht.—The death is reported of H. Carl Haussknecht, Professor of Botany at the University of Weimar. Professor Haussknecht had been a corresponding member of the Pharmaceutical Society since 1892.

Laycock.—On July 15, Robert Laycock, formerly in business as a chemist and druggist at Rotherham and Scarborough. Mr. Laycock, who died from cancer in the throat, was the son of the late Mr. Laycock, chemist and druggist, of Rotherham.

Sloper.—On May 19, Frederick Evans Sloper, Chemist and Drugist, of Oxford Street, Sydney, New South Wales. Aged 79. Mr. Sloper, who was a native of Bath, soon after serving his apprenticeship entered the employ of Messrs. Savory and Moore, with whom he remained seven years. He then joined the firm of Ferras, Score, and Co., and in 1852 went to Sydney with large shipments of the products of the firm—viz., sulphuric acid and various alkalies. Subsequently he purchased a chemist's business in Sydney, which he carried on until 1870, when he returned to England. In 1873 he went back to Sydney and established the present business, at Oxford Street, where he remained until the time of his death.

Calendar for the Week (July 26—Aug. 1, 1903).

Days of M	Days of W	Events of the Week.	Sun Rises.	Sun Sets.
26	**S**	**Seventh Sunday after Trinity.**	4.15	7.57
27	M	British Pharmaceutical Conference, Royal Hotel, Bristol; at 7.30 p.m—Reception, Dance, and Smoking Concert.	4.17	7.55
28	Tu	British Pharmaceutical Conference, Lecture Hall, University College, Bristol; at 10 a.m.—Sessions of Conference and Visit to Bath.	4.18	7.54
29	W	British Pharmaceutical Conference; at 10 a.m.—Sessions of Conference and Garden Party.	4.19	7.53
30	Th	British Pharmaceutical Conference; at 9.40 a.m.—Excursion to Forest of Dean.	4.21	7.51
31	F	☽First Quarter, 7.15 a.m. Federation of Local Pharmaceutical Associations, Royal Hotel, Bristol; at 9.45 a.m.—Annual Meeting.	4.22	7.50
1	S	London Bridge opened, 1831.	4.23	7.49

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Alcock, Arkle, Atkins, Atkinson, Barclay, Barker, Bellamy, Bird, Birkett, Boorne, Branson, Cope, Crake, Davis, Ferrall, Gadd, Gammie, Gibson, Hallett, Harrison, Jamieson, Lawson, Léger, Low, Matthews, Nicholls, Ough, Parry, Pickworth, Pollard, Radford, Ransom, Robertson, Shuttleworth, Smith, Squires, Stewart, Swaffin, Tweedy, Wand, Wavell, Will, Wills, Wilson, Wright, Young.

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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, July 30, 1903.

This has been a Week of Conferences and inclement weather. The British Pharmaceutical Conference, which met at Bristol, despite the unfavourable elements, passed off successfully, and was well attended by pharmacists. The British Medical Association, which met at Swansea, was equally unfortunate from the meteorological standpoint.

Mr. F. Ransom, who has been one of the Hon. General Secretaries of the Conference for thirteen years, has announced his resignation, and Mr. Edmund White has been elected to succeed him. Mr. Idris has been re-elected President, and Mr. John C. Umney will continue to serve as Treasurer.

Practical Pharmacy was represented at the Bristol meeting by papers on two of the concentrated liquors of the B.P., on compound tincture of benzoin, crystals in extracts, the preparation of compressed tablets, morphine determination in opium, the standardisation of iron arsenate, B.P., and the chloroforms of belladonna and aconite, B.P.C.

The Chemical Subjects included various analytical processes, such as the quantitative separation of strychnine from quinine, the volumetric use of Fehling's solution, the determination of uric acid, and the refractive index of essential oils. The preparation of absolute alcohol from "spirit" also received attention.

Several Contributions were of especial interest to botanists and students of materia medica. Among these may be mentioned the papers on Balearic botany, the willows used in pharmacy, the barks of the Salicaceæ, *Hyoscyamus muticus*, *Lactuca virosa*, Kô-sam seeds, and a false cusparia bark.

Several Semi-Political Papers were read, dealing with such subjects as the future of pharmacy, a curriculum concurrent with apprenticeship, and agricultural insecticides.

The Bath Waters, the suprarenal glands, and the new Pharmaceutical Institute of the Berlin University completed the varied list of subjects on which papers were read.

The Dispensing Difficulty was touched on by Mr. Idris in his presidential address to the members of the Conference. He advocates the complete separation of the two branches of the healing art, prescribing and dispensing; in default of any such arrangement, he is of opinion that the regulations for the storage of poisons should be enforced in doctors' dispensaries. He also suggests that the General Medical Council might interfere in cases where medical men employ unsupervised and unqualified dispensers.

As regards Prosecutions under the Sale of the Food and Drugs Acts, there has been a comparative lull during the past week. Ground ginger and milk of sulphur have, however, been the subjects of proceedings.

Baron de Bush met his death on Friday of last week as the result of a railway accident. The deceased gentleman was a member of the firm of Messrs. W. J. Bush and Co., Limited, manufacturing chemists.

"Southern and Eastern Sketches" is the title of an interesting illustrated article by Mr. G. C. Druce, M.A. The author describes some of the experiences which befell him during his travels abroad last spring.

The Efficacy of the Basil Plants as a protection against mosquitoes has been disproved by a series of experiments which have been made by the Principal Medical Officer of Health for Sierra Leone.

The Medicine Stamp Duty Acts are the subject of a paper to be read at to-morrow's meeting of the Federation of Local Associations. The article, which explains the present position of pharmacists with regard to the recent interpretations put on the Acts by the Board of Inland Revenue authorities, appears in this issue.

The Markets in Drugs and Chemicals remain quiet. Few alterations in prices have occurred during the week. Opium continues very firm. Menthol is very slightly weaker. Quinine is practically unchanged, whilst Cascara and Senega are still interesting.

THE INCIDENCE OF MEDICINE STAMP DUTY.

It has now been made clear by the Board of Inland Revenue that, as the outcome of the decisions in the cases of Ransom *v.* Sanguinetti and Farmer *v.* Glyn-Jones, it is intended henceforth to regulate the practice of the Board strictly in accordance with what must be regarded as the intentions of the Legislature when the Medicine Stamp Duty Acts were passed. Originally, there appear to have been two objects kept in view by the Government when legislating on this subject; first, the protection of the public against quacks and unqualified dealers in medicine; and, secondly, the increase of the public revenue. Both objects have been well attained during the hundred and twenty years which have elapsed since the first Medicine Stamp Duty Act was passed, and—though a desire to obtain increased revenue now appears to be the predominant idea in the minds of the authorities—it is gratifying to learn that it is proposed to throw no further difficulties in the way of recognising the distinction, clearly made by the Legislature, between individuals qualified by training and registration to handle medicines and all other persons, including limited companies and mere holders of medicine licences.

In a paper read at the annual meeting of the Federation of Local Pharmaceutical Associations on Friday, and published at length in this week's Journal (see p. 200), it

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is shown that liability to medicine stamp duty is incurred by three classes of remedies—patented medicines, proprietary articles, and secret remedies. It is also explained that numerous mixtures or compounds which have for many years past been sold unstamped, under designations including the name of an ailment or of an organ of the body, will henceforth be considered liable to duty unless the result of further legal proceedings is to make untenable the position at present taken up by the Board of Inland Revenue. If the existing views of that body should prevail, all preparations sold by chemists and druggists under such names as "Antibilious Pills," "Cough Mixture," "Lung Tonic," "Liver Pills," "Tic Mixture," etc., will be rendered liable to stamp duty, except in cases where the composition of each article is fully disclosed upon the label, or a reference is given on the label to some recognised formulary in which the recipe for the article is published. Either course will be attended by certain inconveniences, but—failing a High Court decision to the contrary—one or the other must be followed.

If it be decided to disclose the composition of the medicine, the exact quantity of such ingredient must be specified, but the list of ingredients may be printed upon a separate slip, as in the following copy of a label which has recently been marked "Not Liable to Duty" by the Board of Inland Revenue:—

GOUT AND RHEUMATIC MIXTURE.

Dose.—One tablespoonful to be taken twice a day.

GOUT AND RHEUMATIC MIXTURE.

Ingredients:—

Iodide of Potassium	5 gr.
Citrate of Lithia	5 gr.
Citrate of Potassium	10 gr.
Tincture of Cimicifuga	10 m.
Chloroform Water ....up to	℥i.

A similar label, which differed only in not stating the quantity of each ingredient, was marked "Liable to Duty." It is understood that the Board will also insist upon the payment of stamp duty if medicine dispensed from a physician's prescription bears on the label any indication of the ailment for which it is prescribed. Thus, it is held that the designations "Cough Mixture," "Indigestion Mixture," etc., followed by the usual instructions for use, will render the medicine liable, as will also such directions as "To be taken when the cough is troublesome," unless the prescriber dispenses the medicine himself and makes no separate charge for it. Further, it should be noted that the Board is prepared to recognise as "known, admitted and approved" remedies any mixtures or compounds for which formulæ are given in any "well-known book of reference," and that a formulary published by the Pharmaceutical Society or the *Pharmaceutical Journal* would be regarded as such a work, though a book published by a private individual, or local association, or a trade protection society—such as the Proprietary Articles Trade Association, or the Chemists' Defence Association—would not be recognised by the Board, as at present advised. In conclusion, chemists and druggists are now requested to oblige the Editor by sending copies of recipes suitable for inclusion in a chemists' formulary of approved remedies, in view of the possible publication of a work of that description at an early date.

THE PRESIDENTIAL ADDRESS AT BRISTOL.

It has invariably been the case that the President of the British Pharmaceutical Conference is a pharmacist of high intellectual attainments. The President for 1903 is no exception to the rule, and Mr. T. H. W. Idris's presidential address, delivered last Tuesday at Bristol, is a signal proof of the variety of the author's interests and of the thoroughness with which he attacks the work incidental to his position. As a prominent figure in the municipal life of London, and as the founder of a most successful manufacturing firm, Mr. Idris has many claims upon his time, and his readiness to work as an officer of such bodies as the London Chemists' Association and the British Pharmaceutical Conference deserves the highest appreciation from his brother pharmacists. "Ability points the road to opportunity" said Mr. Idris, who proceeded to refer particularly to such deservedly successful men as Frederick Baden Benger and John Robbins. The epigram applies, as the long address printed at p. 134 bears ample testimony, with equal force to Mr. Idris himself. The delightful possibilities opened up by the necessary scientific studies of the pharmacist having been touched on, Mr. Idris in his address referred to two subjects with which his avocation has made him familiar. Vast strides have of late been made in the methods of analysis of the essential oils, and in the systematic detection of the clever sophistications so frequently practised by exporters of those interesting compounds. In the manufacture of aërated waters, again, an important feature of recent progress is the increased recognition of the advantages of refrigeration. Both these topics were spoken of in a manner which showed a perfect mastery of the subjects.

The next subject with which Mr. Idris dealt was the report of the Departmental Committee on Poisons. A reference to the recent successful prosecution by the Pharmaceutical Society of the firm of Alexander Cross and Sons, Limited, for the illegal sale of arsenical ant-destroyer, received attention, this leading up naturally to the comparative ease with which the criminal poisoner is able to escape punishment for his murders, and to the acknowledged defects in the existing system of death certification. Emphasis was laid on the recommendation, long since drawn up by the London County Council, to the effect that every certificate of death should include a declaration of the absence of signs of poison. A summary of certain celebrated poisoning cases was given, and was followed by lists of fatal mistakes in dispensing or selling drugs by doctors, in public institutions, and by pharmacists respectively. The first list was much longer than the others, a fact which emphasises the necessity—in default of the complete separation of prescribing and dispensing—of the regulations for the storage of poisons being made applicable to doctors' dispensaries. Mr. Idris complained of the action of the General Medical Council in declining to interfere with the employment of unqualified persons in the private dispensaries of medical men, in spite of the fact that the subject had been brought to the notice of that body by the Privy Council. "I believe," said Mr. Idris in conclusion, "that the separation of medicine from pharmacy is proceeding, but the process is very slow. . . . Let all our aims be with a view to being of service to others, satisfied that the reward to ourselves will be in proportion as we do good work."

THE MODERNISATION OF PHARMACY.

Of all the papers read at the British Pharmaceutical Conference this week, none is likely to prove of more practical and commercial value than that by Mr. Edmund White and Mr. Henry Rodwell. It is possible that some of the older generation of pharmacists may be disposed to regard with some disapproval, if not with actual horror, the idea of replacing the pills in which their forefathers took such pride by the compressed tablets which American business enterprise has popularised; but the "elegance," utility and convenience of the tablet must now be universally acknowledged. Difficulties of manipulation have in the past tended to make the retailer dependent to a large extent on the manufacturer for this form of medicinal product, and have undoubtedly hindered its full development. Methods of manufacture, more or less satisfactory, have indeed been described; but all the better-known granulation processes have been found more or less tedious or unsatisfactory. The contributions to the Conferences of 1902 and 1903 from the pharmaceutical laboratory of St. Thomas's Hospital seem now to have solved the problem. At Dundee last year Mr. White was able to describe a method of tablet-manufacture with an excipient of starch and oil of theobroma, which obviated many of the difficulties attending the more usual modes of granulation; while in the paper which the same pharmacist read at Bristol this week an additional step forward has been taken. Of the two methods now suggested, one involves the use of oil of theobroma, in the form of an aqueous emulsion, applicable to the greater number of substances required in tablet form; while the second consists in the application of the oil in ether-alcohol solution, the latter being the more useful for vegetable drugs and "pill-powders." Without having any physiologically harmful effects, these excipients enable the pharmacist or the manufacturer—for the method is found applicable to the preparation of what would be regarded as wholesale quantities—to prepare uniform and smooth tablets, with the minimum of compression and of trouble in granulating, sifting and lubricating during manufacture. The paper, which is printed in full at page 156, will repay the most attentive perusal.

TECHNICAL RESEARCH.

A correspondent of the *Standard* has made some very pertinent remarks on the subject of the proposed Technical High School for London. He points out the wide difference between a school for research in pure science and a school of research in applied science. An institution of the latter kind may be assumed to be Lord Rosebery's ideal, but such a scheme must be carried through properly or not at all. For the thorough equipment of a school for the most advanced technical research, much more than four acres of ground is necessary. That this is the case may be seen by a consideration of the work which is being done at some of the provincial technical schools of England. Manchester erects a complete manufacturing plant for weaving textiles, with laboratories adjacent; Birmingham digs out its miniature coal mine, which alone requires a space of eleven acres; and Sheffield acquires a blast furnace and small ironworks extending over fourteen acres for its technical research school in the single branch of iron and steel manufacture alone. Technical research is urgently needed in very many industries, among which are the manufacture of iron, steel, soap, gas, paper, alkali, electrical engineering, oil engines, dyes, tanning, etc. But research of that nature, properly conducted, in each of the above-named industries, would entail the erection of a miniature factory in each case. Will South Kensington take kindly to the blast furnace, tan-yard, gasworks, of its Charlottenburg, even if it may be possible to cram all these into the four acres of the technical high school? The eminently sensible suggestion is put forward that a committee consisting —not of politicians, county councillors, or scientists—but of representatives of all the leading manufactures of the country, should be formed to report on (1) the objects and methods of a technical research school, (2) the possibilities of such school being successful in or near the Metropolis, (3) the amount of space required, the cost of foundation and maintenance, and some idea as to the nature of equipment from the standpoint of the manufacturer. It is believed that the establishment of a technical institution on a site at South Kensington would not be found among the committee's recommendations.

GROCERS AND THE PHARMACOPŒIA.

In last week's issue (see page 119) a legal case was reported from Wiltshire, where several grocers were fined for selling cream of tartar which contained as an impurity an appreciable quantity of lead, and was thus below the standard of the B.P., 1898. The arguments adduced for the defence, though not adopted by the magistrates, are of particular interest. It was urged that a person who expected to receive a Pharmacopœia article must ask for it under the Pharmacopœia name, and this the inspector who had purchased the cream of tartar had not done. The British Pharmacopœia of 1898 speaks of "Bitartrate of Potassium" and of "Purified Cream of Tartar," but the drug had been asked for simply as "cream of tartar." It was further contended that the article was not a drug, seeing that it had been bought from a grocer, and that, consequently the Pharmacopœia was a standard that could not apply. The magistrates, however, adopted the view that cream of tartar is a drug, that the purchaser of cream of tartar is entitled to receive an article conforming to the tests of the Pharmacopœia, and that grocers are not entitled to more licence than chemists and druggists. Without discussing the vexed question as to the desirability of recognising a commercial standard differing from the standard of the Pharmacopœia, there can be no question that it would be unfair to the public to allow a grocer to sell with impunity an article which, if sold by a chemist, might result in the latter being fined. It may seem equally unfair to expect the grocer to be able to understand or apply the Pharmacopœial tests for purity, but the grocer is not acting fairly towards the public, or towards those who have been educated to have a knowledge of drugs, if he goes out of his way—for it is nothing less—to assume, by selling drugs to the public, responsibilities to which he is necessarily unequal.

THE CONFERENCE AT BRISTOL.

Apart from the fact that the weather was far from avourable, the Bristol meeting of the British Pharmaceutical Conference has been one of the most successful and enjoyable of recent years. In order to bring about such a result, it is always necessary that the local organisation should be good and that great pains be taken to perfect the details of the scheme of entertainment. Both these requirements were fully met by the Local Committee, and the members of the Conference are to be congratulated on having been so well looked after during the past week. At the reception on Monday evening, about two hundred and fifty guests were entertained at the headquarters of the Conference. A warm address of welcome by the Lord Mayor of Bristol was responded to with equal warmth by the President of the Conference and the Presidents of the Pharmaceutical Societies of Great Britain and Ireland. Subsequently, a well attended smoking concert was held in one room, while a dance was proceeding in another, and it was long past midnight when the company separated, after having had a thoroughly enjoyable time. On Tuesday afternoon, a large party was conveyed by special train to Bath, where they were welcomed by the ex-Mayor, Mr. E. E. Phillips, and the Baths and Roman Promenade were described by Alderman R. H. Moore. The Abbey was also visited, the party being conducted over the edifice by the Rector, who explained the various matters of interest. A garden party at the Zoological Gardens on Wednesday was unfortunately somewhat marred by the rain which came to spoil the weather of the first fine day since the Conference assembled. The whole day excursion to the Forest of Dean and Tintern Abbey, on Thursday, was pleasurable in the extreme, and the usual complimentary speeches at the luncheon on that day formally closed the fortieth annual meeting of the Conference. During the week, the ladies attending the meeting were taken to visit various places of interest in and around Bristol, and brief reference must also be made to the hospitality offered by Mr. and Mrs. J. W. White, at their residence, on Wednesday afternoon. The evenings of Tuesday and Wednesday were pleasantly occupied at headquarters by impromptu entertainments organised by Mr. Richard Bremridge, Mr. Layman, and other prominent visitors.

The papers read at the Conference were of great practical value and theoretical interest, and in no way fell short of the high standard always maintained in these respects at the annual meetings of the Conference. The long discussions on Wednesday were evidence of the exceptional interest taken in some of the papers, but the proceedings were throughout excellently conducted by the President, Mr. Idris. The members showed in the most unmistakable manner their high appreciation of the manner in which that gentleman had fulfilled his duties by unanimously re-electing him to the office. On the invitation of Mr. G. T. W. Newsholme, who spoke on behalf of the pharmacists of Sheffield, that city was selected as the place of meeting for next year. Mr. F. Ransom, of Hitchin, who has for thirteen years acted as one of the Honorary General Secretaries with unvarying popularity and distinction, has, to the regret of all the members, felt himself compelled to relinquish the position, and on Wednesday, Mr. Edmund White (London), one of the most regular contributors of original work in pharmacy, and a member of the Executive Committee of the Conference, was selected in his place, to share with Mr. E. S. Peck, of Cambridge, the duties which fall to the General Secretaries' lot. Mr. J. C. Umney, who has been Treasurer for five years, was cordially re-elected, the financial statement for the year being most satisfactory. It is always pleasant to be able to record that anything pharmaceutical is increasing in vigour and prosperity. Certainly such a description is applicable to the British Pharmaceutical Conference, which seems to have before it every prospect of a future equal in usefulness and dignity to that period of uninterrupted prosperity which duriug the last forty years the Conference has continuously enjoyed.

BARON DE BUSH.

William Ernest, first Baron de Bush, the eldest son of the late Mr. William John Bush, and Chairman of W. J. Bush and Co. (Ltd.), manufacturing chemists and distillers, of Hackney, Mitcham, and Messina, Sicily, died on Friday morning, July 24, as the result of falling from the Scottish Express leaving Euston at 8.10 on Thursday evening. Baron de Bush, who was forty-two years of age, had been closely connected with the chemical industry of this country practically all his life. A recognised expert, he had served on many International Juries, and had received numerous distinctions. In 1885 he was British Juror for chemicals at the Antwerp Exhibition, when he received the thanks of the Foreign Office for his services; and in 1888 was President of the Chemical Section and British Representative on the Supreme Jury of the Brussels Exhibition. Two years later he was Chairman of the British Jurors at the Edinburgh International Exhibition, and in 1897 President of the Chemical Jury at the Brussels Exhibition. He was a Knight of the Orders of Leopold of Belgium and the Crown of Italy, and also had the First Class of the Family Order of Saxe-Coburg and Gotha. Mr. Bush was created a Baron of the Duchy of Saxe-Coburg and Gotha by Ducal letters patent in 1889, and subsequently received the Royal licence to use the title in this country. He married in 1899 Clara Pauline, daughter of the late M. Louis Grund Joran, of Freeport, Illinois, the American *prima donna*. During the Sessions 1877, 1878, and 1879 he was a student at the School of Pharmacy of the Pharmaceutical Society. A portrait of the late Baron de Bush will be found at page 231 of this ssue of the *Pharmaceutical Journal.*

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Fish-Liver Oil.

J. C. Umney and C T. Bennett have examined a sample of non-freezing fish-liver oil which, in many respects, responded to the Pharmacopœial tests for cod-liver oil. The refractive index and the percentage of free fatty acids were found to be the most valuable tests for purity, the fish oil showing over 3·0 per cent. of the latter. The B.P. nitric acid test has also been found to be useful for excluding fish oils from cod-liver oil when time is not a matter of importance.—*Chemist and Druggist*, **63**, 37.

Colour Tests for Strychnine.

An article by L. F. Kebler deals with alkaloidal colour tests, particularly those for strychnine. The author has carefully gone through the sulphuric acid oxidation colour reactions for strychnine and for a mixture of morphine and hydrastine, which has been stated in a work of fiction to give very similar colourations. He finds that the latter will not dissolve in pure concentrated sulphuric acid without colouration, as pure strychnine does, but it must be remembered that improperly purified strychnine does not produce an absolutely colourless solution. The shades of colour produced by treating strychnine, dissolved in sulphuric acid, with a fragment of potassium bichromate, are not the same as, though in some respects similar to, those formed with morphine-hydrastine.—*Amer. Journ. Pharm.*, **75**, 331.

Action of Ozone on Carbon Monoxide.

W. A. Jones and C. E. Waters have independently investigated the action of ozone on carbon monoxide. It is found that ozone does not act on carbon monoxide as readily as might be expected from its apparent unsaturation, there is some oxidation to carbon dioxide at high temperatures, the oxidation depending on the amount of ozone present in the oxygen. Jones did not find the least evidence of oxidation by hydrogen peroxide, even when concentrated solutions were employed.—*Amer. Chem. Journ.*, **30**, 40, 50.

Ultra-Violet Light Filter.

At a recent meeting of the Vienna Photographic Society, Eder exhibited a new light filter. The dye used is nitroso-dimethylaniline, which is of a yellow colour and absorbs all the visible rays, but transmits the whole of the ultra-violet. By combining this dye with cobalt glass a filter is produced that transmits the ultra-violet only. Some remarkable photographs of landscapes taken with these filters were also shown.—*Brit. Journ. Photog.*, **50**, 484.

Levulose as an Article of Children's Diet.

L. Fuerst (*Zeits. für dietet. und physik. Therap.*) strongly recommends levulose as a food for children. It may be used instead of saccharose or lactose to sweeten infants' milk, to which it imparts a pleasant flavour, while it never occasions the digestive disturbances to which the use of other sugars often gives rise. Slightly older children, who often lose weight when weaned, take levulose chocolate and syrup readily. Levulose is of marked benefit to badly nourished children and to those recovering from illnesses. When given to children suffering from glandular enlargements, tuberculous or non-tuberculous, the effect on the glands is equal to that of cod-liver oil.—*B.M.J. Epit.*, **1**/1903, 100.

Detection of Resin in Liquid Storax.

C. Ahrens and P. Hett have examined specimens of adulterated liquid storax, which gave from 55·1 to 63·7 per cent. of resin, soluble in light petroleum ether. The acid number of this was between 116·3 and 120·9; the saponification number (cold saponification) between 171·6 and 177·6. Pure storax gave a petroleum ether extract of 37·6 to 47·6 per cent., the acid number of which ranged from 36·6 to 62·9, and the (cold) saponification number 194·6 to 198·4. The method is preferable to that of Dieterich, that of direct titration of the original drug.—*Zeitsc. für angew. Chem.*, through *Pharm. Zeit.*, **48**, 363.

Carbohydrates in the Animal System.

According to Bach and Battelli, the following reactions occur during the decomposition of carbohydrates in the animal system, their theories being based upon the decomposition of glucose. Glucose is first converted into lactic acid which is split up into alcohol and carbon dioxide. The alcohol at the moment of production is easily oxidised by the oxygen of the blood, with the co-operation of oxydases to acetic acid, which in its turn is decomposed into methane and carbon dioxide. The methane is oxidised to formic acid, and this is split up into carbon dioxide and hydrogen, the latter being finally oxidised to water.—*Chem. Zeit.*, **27**, 638.

Germ-free Clinical Thermometers.

That the "clinical" may be, at times, a source of danger has more than once been pointed out, and that organisms become fixed in the scratches of the glass caused by the graduation lines, so that they cannot be removed easily by simple washing and wiping, has been demonstrated. Stini has described, before the Société de Thérapeutique, a simple pocket case in which the clinical thermometer is carried always immersed in a sterilising solution. It consists simply of a metal tube closed at one end with a tight-fitting cap, which screws on by a fine thread, and is fitted with a fluid-tight washer. The thermometer is enclosed in another close-fitting metal case, similar to that at present used, but freely perforated laterally with holes, so as to allow free access of the antiseptic to the instrument, in which it is by this means kept immersed. This smaller tube is carried in the larger one, partially filled with the liquid antiseptic. Any germicidal antiseptic may be used. The author employs a 1 per cent. solution of phenosalyl.—*Bull. gen. de Thérap.*, **145**, 12.

Silver as a Reducing Agent.

W. S. Hendrixson has studied the behaviour of finely divided silver towards substances that readily give up oxygen such as chromic, chloric, bromic, iodic, and permanganic acids. In all the experiments silver was precipitated from an alkaline solution of silver oxide by formalin and afterwards carefully purified. Both chloric and iodic acids are capable alone of oxidising large quantities of finely-divided silver. Both acids react quantitatively upon silver, with the result that a molecule of the acid is completely reduced, and six atoms of silver are oxidised, one of which forms a halide, and five form silver chlorate or iodate. Bromic acid reacts in a similar manner. Dilute sulphuric acid alone is incapable of dissolving finely-divided silver, and the seeming solvent action is due to the oxygen of the air, oxygen dissolved in the acid, or to that derived from some external source. In the near future an attempt will be made by the author to ascertain whether, by excluding extraneous oxygen, the actual oxidising power of a bichromate solution may not be very accurately determined with silver.—*Journn. Amer. Chem. Soc.*, **25**, 637.

Heroine and its Maximum Dose.

Several communications relating to the toxic power of heroine have recently appeared, in consequence of which the Tax-Komitee des Allgemeinine oesterreichischen Apoteker-Vereines recommend that the maximum dose of heroine be fixed at 0·003 Gm. ($\frac{1}{20}$ grain) for a single dose and 0·01 Gm. ($\frac{1}{6}$ grain) for the daily dose.—*Zeit. d. Allg. oest. Apot. Vereines*, 1903, 321.

Liquid and Solid Cresol Disinfectants.

According to E. Baroni, a fluid product similar to certain proprietary cresol disinfectants may be obtained as follows:—Powdered resin, 20, is mixed with caustic soda solution, sp. g. 1·332, 9, and heated to saponify; when solution is complete heavy tar oil, 78, is gradually added with constant stirring, until a homogeneous mixture is obtained. Heat is maintained until a pellicle forms on the surface of the liquid, which is then strained and allowed to cool in a covered vessel. The solid form is obtained by a similar procedure with the following ingredients:—Venice turpentine, 7; resin, 6; beef fat, 80; solution of soda, sp. g. 1·332, 90; tar oil, sp. g. 1·030-1·035, 75. The mass thus obtained is easily miscible with water and may be used as an antiseptic soap, as well as for a disinfectant, when diluted.—*Annales de Pharm.*, **8**, 495.

Xanthoxylon Scandens.

An investigation of the wood of this Javan plant has been made in the laboratory of pharmaceutical chemistry at the university of Utrecht by A. van der Haar. The wood, under the name of Arenybérégédég, is used as a fish poison. It appears to contain an alkaloid, the hydrochloride of which is crystallnie; one or more acids soluble in acetone and ammonium carbonate, but insoluble in water; one or more acids soluble in acetone and sodium carbonate, but insoluble in water; and one or more acids soluble in water and in alkalies, but insoluble in acetone. The bark contains also a higher aliphatic alcohol with a melting-point of 60°, and an acetate with a melting-point of 40° C.—*Pharm. Weekblad.*, **40**, 473.

Plant Cultivation in German Colonies.

Much has lately been heard of the efforts made by Germany to establish the cultivation of various useful plants in her African colonies, but, according to P. Preuss, who is well qualified to speak on this matter, the outlook is by no means rosy. These efforts have been made in order, if possible, to render Germany independent of foreign countries for colonial products. In 1889 the Government established botanical gardens in Victoria, at the foot of the Cameroon Mountains, in order to test the suitability of the climate for the cultivation of various plants, and also to produce seeds and plants for distribution. Since then no trouble has been spared to make the enterprise successful. Amongst the plants cultivated the cacao tree at first gave rise to hopes, but the quality of the seed soon fell off. In order to determine the reason of this, Preuss himself undertook an expedition to Central America in order to study the varieties of tree cultivated there and the methods of curing the seeds. As a result of this inquiry the prospects of the cacao cultivation have improved. Coffee and tobacco have hitherto failed, and the cultivation of other plants has been either unsuccessful or of so little value as to be of no practical importance. No matter where the ginger plants are brought from, none but typical African rhizomes are produced. Sisal hemp alone has the prospect of being a source of profit. At present more attention is being paid to indiarubber, cotton, guttapercha, nutmeg, vanilla, pepper and clove, and palm oil. Earth nuts and sesame seed are looked upon as possible sources of profit.—*Ber. d. d. Pharm. Ges.*, **13**, 93.

PHARMACY AS A RESPONSIBLE CALLING.[*]

BY T. H. W. IDRIS, L.C.C., J.P., F.C.S.

I AM proud to have the honour of presiding over this Conference at this, its second visit to Bristol, after an interval of twenty-eight years, when Mr. T. B. Groves presided over a meeting in this city, a city which by me, during my earlier years as a pharmacist, was regarded as the Capital of the West, which title it may justly claim. When I look through the list of my predecessors in this position, I am forcibly impressed with the responsibility that rests on me, and of the necessity for me to ask for your indulgence and for your assistance in sustaining me in my attempt to do my duty. Three of my predecessors have been Fellows of the Royal Society, and all the previous occupants of this office have been men of distinguished ability and scientists of no mean order. I cannot hope to approach the scientific address of my immediate predecessor, nor the able addresses of those who have interested you in former years, but I can ask you to join with me in being thankful that our lives and theirs have been bound up with pharmacy. These men's lives remind us of the possibilities of our calling. It is obvious that an occupation so interesting as ours, involving manual and mental training, and the pursuit of learning of so wide a range, must have inherent possibilities of an extensive order, and that no business can be more compatible with intellectual culture. In former days our calling was almost the only avenue to scientific chemistry, and in our own day no inconsiderable accession has been made to chemists of the first rank by students of pharmacy. Although pharmaceutical students are too frequently satisfied with only getting up the chemistry necessary for passing the qualifying examination, and place no great store on the possibilities arising from what they have acquired, there are abundant examples which prove that the possibilities are great, and that the possibilities increase with every extension of knowledge of the science.

Of Opportunities for Using Knowledge.

It is said that opportunities occur exactly in proportion to the ability to take advantage of them. This is probably true. It is also maintained that ability creates the opportunity; this is probably true, too, as it is certain that ability points out the road to opportunity. No matter how small or how great the knowledge, opportunities for utilising it in the service of our fellow-beings, and to our own advantage, will certainly occur. It is well known to everybody from personal experience that opportunities for using knowledge always occur in a much greater ratio than the knowledge available, and, further, that in almost every life opportunities occur for utilising all the knowledge that has been gained. Three pharmacists that I and most of you had the pleasure of knowing (who have passed away since our last meeting) may be mentioned as illustrations;—our valued colleague, Frederick Baden Benger (one of my predecessors in this chair, who rendered important services before that time as Secretary of this Conference), John Robbins, and Gustav Mellin. These three men all made real and important improvements in articles of common use through applying science to their production, thus rendering real public services and gaining for themselves large financial rewards. I had the pleasure of knowing Mr. Robbins intimately, and from him and from the late Sir B. W. Richardson I had many interesting particulars concerning Mr. Robbins' first step on Fortune's ladder. Very briefly stated, it happened in this way.

The Romance of Hydrogen Peroxide.

Sir Benjamin Ward Richardson was preparing a lecture to be delivered at the Royal Institution, and wished to procure some peroxide of hydrogen for one of his illustrations. He tried several chemists, but failed to obtain as strong a preparation as Thenard had previously obtained. Sir Benjamin's difficulty came to the ear of Mr. Robbins one night; Mr. Robbins stayed up nearly all that night, and finally succeeded in producing the article of the required strength. The next night, about ten o'clock, after the shop was closed, he took his bottle of peroxide to Sir Benjamin's house, and after some difficulty obtained an interview. Sir Benjamin was engaged in his laboratory repeating unsuccessful attempts to produce the article, and on testing the contents of Mr. Robbins' small bottle was delighted to find it to be just what he required. "You must let me have a couple of pints of this," said the scientist. "That is not possible," said Robbins, "I cannot prepare it at my employer's; I am an assistant to Mr. Garden." "Then come to my laboratory," said Sir Benjamin. So Robbins obtained leave of absence, and made the peroxide in Sir Benjamin's house. In giving his lecture, Sir Benjamin acknowledged his indebtedness to the young chemist's assistant. Many uses for the preparation were speedily found, and Mr. Robbins was quickly on the road to fortune, although when he worked at it all night he did it without the slightest idea of any pecuniary result, but simply with a desire to overcome a chemical difficulty. This also illustrates the delight that comes from taking pleasure in one's business.

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[*] Presidential Address to the British Pharmaceutical Conference, delivered at Bristol on Tuesday, July 28, 1903.

Excitement a Necessity of Life.

Some form of excitement, some hobby, is, I believe, a necessity of life. "Happy is the man that findeth wisdom and the man that getteth understanding." "Her ways are ways of pleasantness, and all her paths are peace." In our calling we are fortunate in being able to connect our business with the delights of the microscope and the spectroscope, and with almost every branch of natural science. The reading of our pharmaceutical and scientific journals will often reveal exquisite possibilities to a thoughtful and well-informed reader, even if we imagine possibilities that do not exist. Still, if we err at all, it is better to err on the side of dreaming too much rather than too little. In my experience it may be said of the chemist's shop parlour:—

> "Strange things pass nightly in this little room,
> All dreary as it looks by light of day;
> Enchantment reigns here when at evening play
> Red fire-light glimpses through the pallid gloom."

But it is not only in the study, in the home, and in the shop that scientific studies connected with our business yield pleasure, but untold delight is the result when we wander abroad. Here I should like to quote from Hudson and Gosse's beautiful work on the *Rotifera*, especially as it refers to this delightful part of the country:—"On the Somersetshire side of the Avon, and not far from Clifton, is a little combe, at the bottom of which lies an old fish-pond. It is a true silent pond, and without a sign of life." . . "But if, retaining sense and sight, we could shrink into living atoms and plunge under the water, of what a world of wonders should we then form a part! We should find this fairy kingdom peopled with the strangest creatures—creatures that swim with their hair, that have ruby eyes blazing deep in their necks, with telescopic limbs that now are withdrawn wholly within their bodies, and now stretched out to many times their own length. Here are some riding at anchor, moored by delicate threads spun out from their toes; and there are others flashing by in glass armour, bristling with sharp spikes or ornamented with bosses and flowing curves; while fastened to a green stem is an animal convolvulus that, by some invisible power, draws a never-ceasing stream of victims into its gaping cup, and tears them to death with hooked jaws deep down within its body. Close by it, on the same stem, is something that looks like a filmy heart's ease. A curious wheelwork runs round its four outspread petals; and a chain of minute things, living and dead, is winding in and out of their curves into a gulf at the back of the flower. What happens to them there we cannot see; for round the stem is raised a tube of golden-brown balls, all regularly piled on each other. Some creature dashes by, and like a flash the flower vanishes within its tube. We sink still lower, and now see on the bottom slow gliding lumps of jelly that thrust a shapeless arm out where they will, and grasping their prey with these chance limbs, wrap themselves round their food to get a meal; for they creep without feet, seize without hands, eat without mouths, and digest without stomachs."

The Delights of Botany.

The delights of botany are well described by my predecessor in last year's address:—"Like the apothecaries of old, we live straitened lives, but we can increase their brightness by pursuing in our leisure hours a science such as the one I am mentioning; and by recording such interesting facts as Nature from time to time may reveal to us, we may do something to explore a small portion of that vast forest of the unknown, by which even in the twentieth century we are surrounded, or lighten to some extent the gloom of ignorance which enshrouds some of Nature's problems, and which even the rays of the electric light have not at present illuminated." True it is, as I heard the late Dr. H. B. Brady say in an address at the Square, these lines which I have never forgotten, that:—

> "Nature never did betray
> The heart that loved her; 'tis her privilege
> Through all the years of this our life, to lead
> From joy to joy; for she can so impress
> With quietness and beauty, and so feed
> With lofty thoughts, that neither evil tongues,
> Rash judgments, nor the sneers of selfish men,
> Nor greetings where no kindness is, nor all
> The dreary intercourse of daily life,
> Shall e'er prevail against us, or disturb
> Our cheerful faith that all which we behold
> Is full of blessings."

Essential Oils and their Constituents.

I will not attempt to discuss the progress made in any of the branches of science connected with our calling, but I think it will be desirable to mention two subjects connected with my own avocation that will be of interest to almost every pharmacist. The first is that of essential oils, a group of bodies that have attracted so much attention in recent years. In discussing the composition of these bodies it should always be borne in mind that they are necessarily of a very indefinite nature, and that they vary in composition to a remarkable extent, depending on such a variety of causes and conditions, such as cultivation, temperature, humidity, soil, sunshine, variety of the plants, maturity of the portion from which the oil is obtained, and so many other circumstances that to start with considering them to be definite mixtures of chemical compounds, and to generalise on a few particular experiments, is very dangerous, and every endeavour should be used to obviate such a possibility. But it is one which is always hard to resist, and unfortunately has sometimes been encouraged to a considerable extent. It is well known that lemons grown in different portions of Sicily yield oils of different optical rotations, but with fairly constant degrees of rotation in each particular district. Black and white peppermint appear to alter from one variety to the other in different climates, and mint grown in different countries yields very different oils, as shown by John C. Umney. More attention has been recently paid to a branch of this subject which has been greatly neglected. I refer to the development of the various constituents of essential oils during the growth of the plant. Much information can be gathered in this quarter, in a few cases, on account of the fact that certain plants yield several oils in regular sequence, which can be periodically and frequently examined. For example, a pure orange flower oil—the oil distilled from the orange peas, as they have been termed—and normal orange oil are well-known articles of commerce, and have been sufficiently well examined to prove that the terpenes are developed with the maturing of the fruit.

The Development of Esters.

But it is in such cases as the development of the esters in lavender oil, etc., that one must examine the oils under less favourable conditions. In this department, Charabot has particularly interested himself, and has, amongst other conclusions, stated that the formation of esters in the plant takes place by the direct action of acids on alcohols; it is favoured by a kind of enzyme which exerts its dehydrating action inside the chlorophyll granules. A careful perusal of Charabot's various papers, however, leaves one with the feeling that the conditions of the experiments were not such as to allow very safe deductions to be drawn from them yet. The possibility of determining accurately a definite constituent of an essential oil is very tempting, and frequently biases one so that an attempt is made to value the oil on such a basis. This is most marked in some cases in which it should be so—that is, where is has been pretty clearly decided that the constituent is the only valuable one present—such as, I think I may say, the cineol in eucalyptus oil. But the fact that the constituent is easily determined should be severely put aside in forming an opinion on the matter. I take lavender oil as a type. I express no opinion on the point, but there are two opposite schools of thought here—the one urges that lavender oil should invariably be valued on its ester contents—the other holding that such a valuation is useless. In Leipzig the oil is sold on such ester value, whilst in the home of its production, the South of France, it is not. Parry has stated that some of the finest oil of the Italian Frontier contains but 25 per cent. of esters, and John C. Umney has stated that some oils with over 40 per cent. of esters are very rank, although he believes that the ester value is a useful basis for classifying oils below 40 per cent. Messrs. Schimmel are the chief supporters on the Continent of the ester value, whilst the majority of the actual distillers are quite averse to it. The need of continued researches before coming to any conclusion is therefore obvious. Many more examples of endeavour to draw hard and fast conclusions before the time is ripe for them might be given, but time will not allow me to more than call attention to the point in the way I have just done. An important discovery of the past few years is the detection of a few nitrogenous compounds in certain essential oils. Of these the most important is methyl anthranilate, the peculiar amido-acid first found in neroli oil. This odorous ester was discovered in oil of neroli by Erdmann, and soon after in oil of jasmin by Hesse and Müller. It was then shown to be present in the oils of orange, orange peas and lime flowers by Parry, and in mandarin oil by Walbaum. Charabot then found it, together with methyl methyl-anthranilate in mandarin leaf oil, and John C. Umney has detected it in Chinese neroli oil. The discovery of the open chain alcohol, nerol, an isomer of geraniol, by Hesse and Zeitschel this year is interesting and important, as hitherto the only known alcohols of this series found in essential oils were geraniol, linalol, and citronellol.

Sandal Wood and Lemon Oils.

Sandal wood oil has been the subject of numerous researches during the past few years. The earliest work on the subject is that of Chapoteaut, which was followed by Parry, who observed that Chapoteaut was working on adulterated oil, and that the oil consisted almost entirely of alcoholic constituents and not aldehyde. Since then numerous Continental chemists have taken up this subject, and it is now clear that the so-called santalol is a mixture of at least two isomeric sesquiterpene alcohols, and that the bodies present in the West Australian and West Indian oils are quite different from them. Hence the oils from the two last-named sources should hardly be called sandal wood oil at all. The chemistry of lemon oil has been a fruitful study of recent years, and I am glad to recognise that the work has to a very considerable extent been accomplished by English chemists. It is not long ago that we regarded lemon oil as little else than terpene; when citral was found some believed that the chemistry of lemon oil was settled. Although a great many bodies have now been found in the oil, the most important (recently discovered) are the esters of geraniol and linalol, discovered by Umney and Swinton, and the aldehydes, octyl and nonyl aldehydes, for which credit it due to Burgess and Child. If lemon oil be distilled under ordinary pressure—a proceeding the expediency of which in analytical processes is open to considerable doubt—the first 10 per cent. will naturally consist in the main of terpenes. It had been observed that many samples under such treatment yielded a distillate, which differed only a degree or so in its optical rotation from that of the original oil. On a comparatively few experiments—and possibly relying on a now admittedly incorrect statement of Schimmel that lemon oil contained no trace of pinene—the last edition of the British Pharmacopœia directs that 2° shall be the maximum difference in rotation. Now the same sample of lemon oil, if distilled under reduced pressure, and under suitable fractionating apparatus—which is the rational method of conducting the test—will often yield a distillate whch has a different figure of 8° or even 12° in rare instances. Where did the absurd first advocated standard of 7 to 8 per cent. of citral in lemon oil come from? Was it through a few exceptional samples—or was it through a mistake in the analysis of the oils? I take up several price-lists, and find lemon oil guaranteed to contain 7 per cent. of citral. I think I am not exaggerating when I say that such a sample is practically never met with. If it were we would easily obtain from 12 to 15 per cent. of terpeneless oil from natural lemon oil, which is admittedly absurd. The work on this group of oils has led to the patenting in Germany of artificial oils of lemon and mandarin. It is probable that such patents will die a natural death, but attention should be called to them. I might spend the whole of the time at my disposal on this interesting subject, but my object is merely to point to the matter and leave those interested in it to follow it up for themselves.

The Adulteration of Essential Oils,

Before leaving the subject of essential oils, I feel compelled to draw attention very briefly to one other aspect of it. I mean the adulteration practised in commerce. Time was when adulteration was very coarse and very frequent. It is still very frequent, unfortunately, but it is not now so coarse. With the development of our knowledge of the chemistry of the oils, the refinements in adulteration have grown. And it becomes a continual struggle between the honest chemist and the dishonest, but skilful, adulterator as to who shall circumvent the other. Compare the old adulteration of lemon oil with turpentine with the mere dilution with lemon terpenes. Petroleum oil and camphor oil are still regular adulterants of peppermint oil, but glyceryl acetate is far more ingenious, and has been recently found by C. T. Bennett. A small percentage of cocoanut oil is common in lemon-grass oil, but 5 per cent. of acetone has much greater chances of passing unnoticed, and has recently been found by Parry. The "scientific" adulteration of the oils of citronella, peppermint, lemon, otto of rose, spike lavender, and many others has reached alarming proportions, and they should be watched with great care. For years a solubility test was accepted as a guarantee of the purity of citronella oil, simply because American kerosene was the usual adulterant, and rendered the oil insoluble in 80 per cent. alcohol. The wily adulterator naturally sought a fresh adulterant, and for years past many hundreds of tons of adulterated citronella oil must have come into this country and been accepted merely because they passed Schimmel's test. But the recent work of Parry, Umney, and Bennett has exposed the extent of this adulteration, and caused a fresh standard of purity to be looked for. I am informed from quite reliable sources that not 5 per cent. of the citronella oil of the market is now pure. This can only be regarded as a disgraceful state of things, and it is only by the most scrupulous care that such dishonesty can be checked.

The Advantages of Refrigeration.

The second matter of present interest in my own branch of manufacture is the recently recognised enormous advantages of refrigeration applied to the manufacture of aërated or carbonated beverages. If water be cooled to the temperature of greatest density, or to about 4° Centigrade, the necessary amount of carbon dioxide is absorbed so readily that a pressure of two atmospheres in the carbonating vessels is found to be sufficient for the manufacture of soda water instead of, as at present, five to twelve atmospheres being required at normal temperatures, and soda water at the reduced temperature mentioned can be practically treated as a still liquid, as no serious disengagement of gas takes place until the temperature has been allowed to rise. It will at once be realised that under these conditions the bottling of aërated waters becomes a much more simple and rapid process than that which now obtains. The breakage in the bottling machines is greatly reduced, the danger to the operatives is consequently materially lessened, greater economy in production is obtained; but the most important advantage is that of uniformity in the quality of the product and in the pressure in the bottles. The system is in full operation in several factories in America and in Germany, but, as far as I am aware, it is not in full operation in any factory in the United Kingdom, but it has been partially adopted, and arrangements are now being made for its complete adoption in more than one factory in England, and it appears to me that it must of necessity be adopted by every good-class manufacturer. As the refrigerating or ice-making plant required must necessarily be of sufficient capacity to refrigerate the greatest amount of water required to be treated during the busiest working day, it necessitates a considerable expenditure in first cost, and as the working hours of any factory are necessarily less than one-third of the hours in the week, and considerable waste is involved in recovering reduced temperature after every stoppage, it appears to me that to work the process economically the refrigeration must necessarily be carried on continuously, and the cold produced beyond the usual factory hours must be utilised in ice-making or in some other way.

Report of the Committee on Poisons.

Since our last meeting the Departmental Committee on Poisons has issued its report. It is well known to you all that this Committee was appointed as the result of an energetic and well-organised agitation by the proprietors and manufacturers of secret poisonous compounds sold for use in connection with various agricultural and horticultural operations, organised by a solicitor acting in the interests of these manufacturers, and promoted in the House of Commons by a maker of these poisonous compounds. The findings of the majority of this Committee was, broadly, what was desired by the makers of these compounds—that is, that poisons for use in connection with agriculture or horticulture should be freed from the restrictions now placed on their being sold, although the most important portion of the evidence and a minority report by Mr. Walter Hills pointed out the grave public dangers that would ensue from the lessening of the present restrictions. No Bill based on this report has yet been introduced, but a most instructive commentary on the report is afforded by the fact that a Bill for the Compulsory Dipping of Sheep was introduced by the Department of Agriculture, when it soon became evident to the late President of the Board of Agriculture that more information on the subject was necessary before the Bill could be passed, and that it was desirable that positive information should be obtained as to whether the use of poisons was necessary, and also as to what preparations would be most effective in use for the purpose. The Bill was therefore withdrawn, and a Departmental Committee has been appointed to conduct an inquiry as to the composition and essential constituents of efficient dips and other preparations for the treatment and dressing of sheep, etc. Another most significant commentary on the origin of the Poisons Committee and its findings is afforded by the prosecution by the Pharmaceutical Society and conviction of the firm with which Mr. Cross, M.P., and a member of the Poisons Committee, is connected, for the illegal sale of the "Ballikinrain Ant-Destroyer," a preparation of arsenic put up in a most dangerous, sweet, and seductive form, costing about 3½d., and sold for 2s. 6d., a form that no chemist would for a moment assume the responsibility of selling, and at a rate of profit so enormous that it could not be justified. It is to be hoped that in any future legislation the indiscriminate sale of such a preparation will be made still more difficult than it is at present, and that the taxing of agriculture and horticulture by such inordinate profits will be made impossible by the recommendation of the most desirable remedies, and by the fixing of reasonable prices by the Board of Agriculture. Nothing is more certain than that chemists are far more anxious to be restricted and assisted in the carrying out of their responsible duties under the Pharmacy Act than they are to make profits out of such sales, for the grave dangers to the public, and the heavy responsibilities connected with sales of poisons are always present to the chemist, and his experience impresses them on him. It would be easy for me to pile up evidence in support of these statements, but time will not permit me to notice more than two aspects of the question not at present realised by the public, *i.e.* :—(1) The impunity with which the criminal poisoner is enabled to carry on his or her operations; and (2) the very slight protection to the public that is afforded by the present system of death certification.

Certification of Causes of Death.

The two most important Government inquiries into matters relating to the death certification during recent years have been those of:—

(1) The Select Committee, appointed in 1893, to inquire into the sufficiency of the existing law as to the disposal of the dead, for securing an accurate record of the causes of death in all cases, and especially for detecting them where death may have been due to *poison*, violence, or criminal neglect.

(2) The Departmental Committee appointed in 1902 to prepare a draft of the regulations to be made by the Secretary of State in pursuance of the powers given him by Section 7 of the Cremation Act, 1902.

It is not too much to characterise the evidence before these two bodies as "revelations," and it has a distinct bearing on the question of death certification in relation to poisoning. For instance, the Death Certification (1893) Committee reported that:—"So far as affording a record of the true cause of death and the detection of it in cases where death may have been due to violence, *poison*, or criminal neglect is concerned, the class of certified deaths leaves much to be desired." The Registrar-General deposed that "never a year passed in which he did not have to prosecute some doctor for giving false information on the certificate." In the Report of the Cremation Committee it is stated: "We have also had to consider the possibility of cases in which the person who would naturally give the death certificate is himself the murderer. Dr. W. Wynn Westcott pointed out in a paper (*British Medical Journal*, December 6, 1902) that the London County Council had long since drawn up recommendations which had been presented to successive Lord Chancellors and Home Secretaries, and which recommended *inter alia*: "That no death should be registered without a certificate of the cause of death, signed by a registered medical practitioner or by a coroner, that no such certificate should be given until after inspection of the dead body, and that the certificate must include a declaration of the absence of the signs of poison, violence, accident, or criminal neglect."

Medical Certificates and Ambiguous Symptoms.

No means exist for the critical examinatıon of medical certificates, and the ambiguity of the symptoms often enables the secondary cause of death to be registered with the concealment of the primary cause. With burial the body can of course be exhumed, in the event of suspicious circumstances arising afterwards, but—although the strictest investigation before by the cremation authority is devised to prevent it—we cannot overlook the facts that cremation destroys the evidence of crime, and that the Cremation Committee (1902) disclaimed the idea that "any possible restrictions can guard completely against the risk of cremation being used for the concealment of crime." It must not be forgotten that about 3,000 burials take place every year in this country without any death certificate, and it is fairly certain that criminals who are acquainted with the effects of poisons would not be at all likely to select any means of effecting their objects other than some form of poison. Mention may be made here of some of the celebrated murders mentioned in the above reports which have a bearing on the matter by reason of a certificate or a burial order, either false or careless, being relied on to successfully hide the crime.

Notorious Poisoning Cases.

(1) *The Rugeley Murders* (1855-56).—The murderer was Dr. William Palmer, of Rugeley. The body of Ann Palmer, his wife, had been fifteen months in the grave under a certificate of "bilious cholera." J. P. Cook died suddenly and *Palmer gave the certificate.* On exhumation of Cook's body there was evidence of poisoning by strychnine, and antimony was also found in his body. The antimony was used by Palmer to expel the strychnine. Mrs. Palmer's body was exhumed and antimony found in her body. "The history of the illness," says Dr. T. Stevenson, the Home Office Analyst, "shows that the symptoms were consistent with the effects of tartarated antimony, but not with those of 'bilious cholera' or any other disease. Antimony had not been prescribed for her during her illness." The conviction for the murder of Cook led (according to the *Quarterly Review*) to the exhumation of six other victims of Palmer, murdered by various means.

(2) *Catherine Wilson* (1862), convicted for the murder of Mrs. Soames, while nursed by the prisoner. The body was exhumed, but no poison was found in the remains; yet the medical and other circumstances proved to the court that deceased had been destroyed by vegetable poison—probably colchicum. From the facts at the trial it was proved that deceased was one of *four* victims of the prisoner.

(3) *Winslow* (1860), indicted for the murder of his mistress, Ann James, to whom, it was clearly proved, antimony had been administered. The prisoner, however, was acquitted, owing to the difficulty of proving the administration. Three relatives of the woman James were also proved, after exhumation, to have died from antimony poisoning. The cause of death was not suspected at the time.

(4) *Dr. De la Pommerais* (1864), convicted in Paris of the murder of a woman named Pauw, whom he insured. She died from digitalin poisoning. He found no difficulty in getting a certificate for "gastritis and perforation of the stomach."

Cremation in Poisoning Cases.

(5) *The Famous Besançon Case.*—In 1854 the learned chemist Henri Deville, whilst Professor and Dean of the Faculty of Science at Besançon, was called upon to perform a medico-legal investigation of a case in which an entire family had died during an epidemic of cholera. The six members of the family were exhumed, and four of the six were found to have died from arsenic at the height of the cholera epidemic. The murderer, who would inherit the property, hoped that from the similarity between the symptoms of cholera and those of arsenic poisoning, his crimes would remain unknown for ever. Commenting on this crime, Professor P. Brouardel (who, as director of the Morgue, obtained perhaps an unequalled experience of medico-legal cases) says in his invaluable book 'Death and Sudden Death,' that "If these bodies had been submitted to cremation the toxicological analysis would have been impossible." It is only fair to add, however, that whether the bodies could have been cremated in this country at the present time is extremely doubtful. The certificates required under the Cremation Act, 1902, viz.—(1) An application for cremation making certain declarations; (2) registrar's certificate; (3) certificate of medical attendant; (4) confirmatory medical certificate, and (5) authority to cremate, signed by the medical referee of the cremation company, have not been sufficiently long in vogue to allow of an opinion as to their efficacy as a check on the concealment of crime.

(6) *Dr. E. Pritchard*, of Glasgow (1865), charged with the murder of his wife and mother-in-law, by administering tartarised antimony, aconite and opium to the latter in tapioca, in porter or beer, and in Batley's sedative solution, and by administering tartarised antimony and aconite to his wife in articles of food and medicine. He certified that his mother-in-law died of paralysis, and his wife of gastric fever. He was executed.

(7) *Mary Ann Cotton* (1873), indicted for the murder of her stepson. The body was exhumed and arsenic found to be the sole cause of death. She was convicted. It is stated on well-ascertained facts that she had murdered, by poisoning, her mother, fifteen children, three husbands, and a lodger —making in all twenty persons in a few years. They died rather rapidly one after the other, and the medical man assigned "gastric fever" as the cause of death when the symptoms were not consistent with this disease. Commenting on this trial, Dr. T. Stevenson says:—"The trial and conviction of this criminal for those insurance murders brought to light another fact, viz., the great insecurity of life in this country, owing to the perfunctory manner in which some medical men discharge an important duty in filling up certificates of the cause of death. With fully-marked symptoms of arsenical poisoning, these sudden and violent deaths were registered one after the other as 'gastric fever.'"

(8) *Higgins and Flannigan* (1884) committed a murder by means of arsenic, and no fewer than ten other persons, all of them duly certified and buried, are afterwards proved by exhumation to have been destroyed by them in the same way. They had procured fly-papers, soaked them in water, and administered the liquid to the deceased. The use of these

fly-papers for poisoning illustrates in the strongest manner the desirability of prohibiting the unnecessary use of poisonous materials for any purpose in which non-poisonous articles would be equally suitable.

More Recent Murders by Poison.

(9) *Neill* (1892) murdered Matilda Clover by strychnine. Her body was exhumed. The Treasury prosecuted "the apothecary" or "L.S.A." who gave the certificate of death, for unlawfully and wilfully making a false certificate of death (delirium tremens). He had not attended her, nor seen her when dead, but relied on the statements of a brothel keeper and her servant.

(10) *Chapman* (1903), executed for the murder of his "wives." There were three at least of them who died from antimony poisoning. The first "wife" was certified as having died from phthisis, the second from gastric enteritis, and the detection of arsenic first, and antimony later, in the body of the third, led to the discovery of the crimes. The record of the sale of antimony kept by the chemist was most material evidence in proving poisoning by antimony.

(11) At Bilston some few years back two children were killed by antimony, and two months afterwards the body of a third child was exhumed and antimony found in its body, although in this last case the cause of death had been certified as "asthenia and gastric fever."

(12) Surgeon-Major Cross (1887) poisoned his wife with arsenic and strychnine, registering her death as due to "typhoid."

The number of these illustrations could easily be increased tenfold, but the cases that I have cited are, I think, sufficient to show the position. Dr. T. Stevenson said, in evidence before the Cremation Committee, that he had been through all the criminal cases of arsenical poisoning of which he had personal knowledge, and in 50 per cent. no sufficient suspicion had arisen in the mind of the medical attendant that the cause was one of poisoning until after death. He could not say in what proportion it arose after burial, but in the very first case on which he was employed by the Home Office, the body had been buried—no suspicion arising. There was a medical certificate, and the neighbours brought about the suspicion.

Prescribing and Dispensing.

The reports and evidence of the two committees that I have quoted from have a very important bearing on another subject of great importance to the public safety—that is, the separation of prescribing from dispensing. In almost every other civilised country in the world the dangers of the prescriber dispensing his own medicine and giving his own death certificate have been realised, and the separation of the functions of prescribing and dispensing as far as possible has been enacted and enforced. It is eminently desirable in the interests of the safety of the public that this should obtain in our own country, and it may be laid down as an indisputable fact that the chemist is not by his education and training competent to prescribe, nor is the doctor by his education and training competent to dispense. The intrusion of the old apothecaries on the domain of medicine in England and Wales has resulted in serious confusion in the public mind, and has led to public evils. It is necessary in the public interest that such another mistake in connection with medicine should not be repeated. I am glad to know from personal experience that prescribing by chemists is greatly diminishing, but in order that the separation of prescribing and dispensing should be more fully realised, it is necessary that the pharmacist should have the position that he has in other countries, and that his calling should be recognised by the State as a distinct branch of the medical profession. In order that he should attain this object nothing, to my mind, is more important than that before his scientific training as a pharmacist he should be compelled to pass an examination equal in stringency to that required on entering on the study of medicine, which would enable the pharmacist to study for the higher branches of the healing art without having to pass a further preliminary examination. The insufficiency of the present Preliminary Examination seriously handicaps the pharmacist in his scientific progress and in attaining that position that he should command in the public interest. It is not necessary for me to argue further that pharmacists ought not to prescribe and dispense their own prescriptions, but it must be recollected that the doctor is a watchful check on any blunder made by the chemist, whilst there is no check on any mistake made by the doctor who prescribes and dispenses his own medicine, because he gives his own death certificate, and it must necessarily be a serious temptation to a medical man to avoid publicity in the case of such a misfortune. It should be borne in mind that the regulations of the Pharmaceutical Society, in accordance with the Pharmacy Act, as to keeping, dispensing, and selling of poisons, are not binding on medical men nor in public institutions. These provide that chemists shall:—(1) Keep poisons in bottles with a distinctive mark indicating that they contain poisons; (2) store poisons on one of three special systems designed to distinguish the poison bottles from others; and (3) send out liniments, embrocations, and lotions containing poisons in bottles distinguishable by touch, and with a label that the contents are not to be taken internally. I believe that the following list fairly represents the number and nature of the reported mistakes in doctors' surgeries, public institutions, and chemists' shops published since 1898. I have omitted names, but have given the dates of the reports in the medical and pharmaceutical journals:—

Mistakes in Doctors' Surgeries.

(1) May, 1903.—Dr. —— mixed the labels for a belladonna and aconite liniment and a mixture, with the result that a prominent local gentleman was poisoned fatally. The jury returned a verdict of "Death by misadventure," and recommended that liniment should be placed in bottles of special shape and labelled "poison." The jury expressed admiration of the doctor's manly conduct in confessing the mistake.

(2) November, 1902.—Dr. ——, in making up a bottle of medicine for a child, labelled in error a carbolic and glycerin lotion, which was in a similar bottle. This he gave to the mother, it was administered, the child died, and the jury attached no blame to the doctor, but agreed with the coroner that a blue-fluted bottle should have been used for the poison.

(3) November, 1902.—Dr. ——, in making up powders for two children, by a mistake which could not be definitely explained, put in sulphate of strychnine in place of santonin. The bottles were kept in the same cupboard; one child died, the other was saved by using chloral as an antidote. The jury found "Death of misadventure," and suggested that poisons should be kept in fluted bottles and separate from other drugs. They expressed sympathy with the doctor.

(4) September, 1902.—Dr. —— prescribed neuralgia mixture for one woman and a mixture containing morphine for her mother. The latter visited the former, bringing her medicine, which was drunk by the daughter by mistake, and she died. The doctor, in evidence, said it was not customary to put such a medicine as the mother's in a poison bottle, as it was not *de facto* a poison to the patient for whom it was dispensed. Asked what possible objection there was for putting it in a poison bottle, he said that if she died the relatives would have a suspicion that she died from it. The coroner characterised this as a "wild" explanation. In returning a verdict of "Misadven-

ture," the jury added that there should have been a label on the bottle indicating its poisonous contents.

(5) February, 1902.—Dr. —— supplied liniment of aconite and belladonna and a mixture to a woman patient in bottles "very much alike." She drank the liniment in mistake for the medicine. Jury returned verdict of "Misadventure," and coroner said it would be advisable for doctors to strictly adhere to a rule to put such a poisonous liquid in distinctive bottles.

Confusion of Bottles in Surgeries.

(6) April, 1901.—Dr. —— was attending a child suffering from typhoid fever. The father called at the surgery for the child's medicine, and received a bottle (the label of which was upside down), some of the contents of which were given to the child. The doctor found that he had given the father a bottle of "tinctura ferri," instead of one produced at the inquest, labelled "for ———'s child." The evidence of one of the doctors who made the post-mortem was that the dose would have caused death even had deceased been in good health. Another doctor present at the post-mortem would not like to have said that, although he should not like to try the experiment. The jury returned a verdict of "Misadventure," and expressed the opinion that the doctor should have been more careful in dispensing his medicines.

(7) March, 1901.—Dr. —— employed an unqualified dispenser who, in making up powders for three children, by mistake substituted strychnine for santonin. The bottles were on the same shelf in the dispensary. The first child was buried under the doctor's certificate before the death of the other two aroused suspicion. He gave the certificate because he thought the worms (from which all the children suffered) had set up convulsions which was the cause of death. Strychnine was found in the child when disinterred. The jury found that all three deaths were caused by the administration of strychnine through misadventure, and strongly recommended that all bottles containing poison should be kept distinct and separate from other bottles.

(8) March, 1901.—Dr. ——, receiving an urgent call to a diphtheria case, left an unlabelled bottle of carbolic acid on his desk. Returning, he found a number of patients awaiting him, including one to whom he gave a bottle of—as he thought—physic for catarrh. The patient took some of it and died. In shape and colour the carbolic acid and the medicine bottles were alike, and the doctor labelled the former for the latter. It was not until after returning from the patient's death-bed that he found the medicine bottle on his desk and the acid bottle missing. Verdict, "Misadventure."

(9) January, 1901.—Dr. —— instructed his assistant to make up for a patient suffering from rheumatic gout a belladonna and aconite liniment. This was done and put in a bottle with an ordinary label, not marked poison. Afterwards a mixture was dispensed and forwarded to the invalid. Subsequently the latter sent for another bottle of medicine, and the liniment already made up in a bottle similar to the previous medicine, was forwarded to him, and he took 1½ oz. and died the same night. The jury found that the deceased had been accidently poisoned, and expressed the opinion that bottles containing poisonous medicines dispensed by medical practitioners or chemists should have a distinctive shape, and be labelled "poison" on both sides.

(10) January, 1900.—Dr. —— always told his housekeeper to keep the belladonna and aconite liniment in the surgery. It was, however, "inadvertently left in her room" on one occasion, when it was "given" by one of the doctor's servants to a lady visiting the doctor, who was suffering from face-ache. She died, and a verdict was returned of "Misadventure."

Doctors' Lack of Care.

(11) October, 1900.—Dr. ——, whilst confined to the house from temporary indisposition, took a dose of opium, to the effects of which he succumbed. Two local doctors, who gave evidence, said that "medical men, when using poisons for themselves generally measured with their mouths, adding that whilst they were careful to measure for other people they were not careful for themselves." Verdict, "Misadventure."

(12) December, 1900.—Dr. —— wrote a prescription for a powder for an infant's arm swollen after vaccination. The prescription was for "urophen and boracic acid." The surgery dispenser read it as "morphia, 1 scruple; boracic acid, 2 drachms." There was no initial "e" to the word "europhen." The dispenser cautioned the mother that it contained poison, and labelled the powder "poison powder." The doctor, in evidence, stated that the dispenser's duty was simply to prepare medicines according to the prescription, and not to make enquiries about them. The jury returned a verdict of "accidental death," and asked the coroner to say that they hoped the doctor would, in writing prescriptions, take every means possible to avoid the recurrence of such an unfortunate mistake. As to the dispenser, the jury felt that his business was one requiring the greatest care, and they did not think that he showed quite such an intelligent interest in the matter as he ought to have done when he made up for a baby a prescription containing a violent poison. They thought he might very well have asked a question about it in the first place.

(13) December, 1900.—Dr. —— kept four surgeries in charge of housekeepers. An application was made at one of these for the doctor's attendance on a woman. His housekeeper telephoned him, but he declined to come that night, and telephoned to the housekeeper to mix a bottle of medicine consisting of mag. sulph., 1 oz.; tinc. nux vom., 1 dr.; and water, 6 oz. Also one calomel pill was to be supplied. The next morning the patient was dead. The housekeeper's daughter, age seventeen years, mixed the medicine in her mother's absence, and had done so before in the doctor's absence. A post-mortem showed death to be due to pneumonia, but another doctor said the medicine was not proper for that complaint. The coroner condemned the action of the doctor in prescribing without seeing the patient, and said: "for a girl of seventeen to act as a doctor's assistant was a very dangerous practice." Verdict, "Death from pneumonia," and the coroner consented to report the matter to the General Medical Council. Writing to the local Press, the doctor himself said: "It would be impossible for a country practitioner to carry on his profession if he could not employ unqualified dispensers—usually his wife or daughter."

More Accidents in Doctors' Surgeries.

(14) January, 1899.—Dr. —— was treating a patient for influenza. He gave his dispenser (a medical student, who said he had had twelve years' experience in dispensing medicines) a prescription and also verbal instructions to make a 4-oz. linctus of morphine, and then at the moment changed it into 8 oz. The dispenser was confused in consequence, and was not sure from the prescription and the verbal alteration which were to be taken. He understood the drachm and a-half in the prescription to mean powdered morphine, and did not recollect the doctor saying it was to be liquor morphinæ. He worked out the prescription as well as his confused state would allow him. He weighed 50 gr. of morphine, and some gum acacia, and measured 8 drops of prussic acid, and mixed them together. The bottle was labelled "two tablespoonfuls," but he calculated the 50 gr. by always having dispensed teaspoon doses. It did not occur to him to calculate the amount of morphine in two tablespoonfuls. The coroner commented on the prescription as

having been "made out in a most slipshod manner," and said "if the dispenser did not understand the prescription he had no right to make it up." The jury returned a verdict of "Death by misadventure," and the dispenser was censured.

(15) June, 1899.—Dr. —— administered to a man suffering under the influence of drink a draught containing chloral, 20 gr.; potassium bromide, 10 gr.; and morphine, between 1 to 2 gr. A post-mortem showed death from diseased condition of organs, accelerated by an overdose of morphine. The doctor admitted that he did not weigh the constituents of the draught. The jury returned a verdict according to the medical evidence, and added a rider: "And the jury consider the act of guessing the quantity of active poison most reprehensible."

(16) September, 1899.—Dr. —— dispensed, as he believed, tincture of steel, infusion of chiretta, and chloroform water. The lady patient became ill, and afterwards told the doctor that she strongly suspected that she had been poisoned. To convince her to the contrary, the doctor drank some of the medicine, became seriously ill, and died from strychnine poisoning. The medical evidence showed there had been a mistake (arising, it was suggested, by the proximity of the two bottles) in dispensing solution of strychnine for chloroform water.

Mistakes in Public Institutions.

(1) December, 1902 (Workhouse).—Nurse gave carbolic lotion in mistake for "house mixture." Inmate died. Suggestions for the storage and care of poisons ordered to be adopted in future.

(2) June, 1901 (Asylum).—Three persons died from the effects of an overdose of chloral. The mixture was to contain 30 gr. of chloral, but if, as was conjectured, the concentrated chloral was used it contained 240 gr. The senior assistant medical officer said that, to the best of his recollection, he had taken a bottle from the cupboard containing the poison and placed it on the bench in front of him, together with the bottle containing the diluted chloral. He had to use both kinds of chloral for separate medicines. He left the surgery for a few minutes, and on returning must have picked up the wrong bottle. The jury returned a verdict of "Misadventure," and added a rider that the bottles or contents should be coloured differently.

(3) March, 1900 (Hospital).—Nurse ordered to give a man a preparation of strychnine during the night if he became no better. She took from a chest a preparation of strychnine used for hypodermic injection instead of the ordinary solution. The patient died from an overdose. Verdict, "Misadventure."

(4) April, 1899 (Hospital).—Two ounces of paraldehyde given in night to restless patient instead of 1 drm. It was taken by a nurse from a bottle of pure paraldehyde, to which a label bearing instructions for a previous patient had been affixed by another nurse. That label was "1 drm. of paraldehyde, in 2 oz. of water." The nurse took this to mean that 2 oz. of this would be equivalent to 1 drm. of the drug. The verdict was "Misadventure, with an opinion that greater care should be exercised by doctor and nurses in the labelling of bottles and the dispensing of medicines."

(5) December, 1899 (Hospital).—Two patients fatally poisoned by strychnine, through liq. strych. being filled into spt. ether. nit. dispensing bottles. Three dispensers employed, all having a qualification. Verdict, "A misadventure, but in consequence of lax system which obtained in the dispensary unable to fix the blame on any individual." Recommended that the poisons should be kept in differently-shaped bottles, and that the initials of the dispenser who last filled them should be shown on the bottles.

Dispensing Mistakes in Chemists' Shops.

(1) July, 1903.—Qualified assistant to a chemist gave solution of strychnine in mistake for solution of morphine to a man who was in the habit of taking morphine. The man died. Verdict, "Death from misadventure."

(2) March, 1903.—Assistant to chemist in dispensing a prescription for powders by mistake substituted strychnine for exalgin. A death followed, and the result of the assistant being tried for culpable homicide, was a verdict of "Not guilty."

(3) February, 1903.—Chemist dispensed liquor. ammon. fort. for sal volatile, in consequence of which a man met his death. Chemist himself prescribed the mixture for a cold. He was arrested and tried for manslaughter, and sentenced to fourteen days' imprisonment.

(4) January, 1903.—Drug Stores dispensed a prescription for "two calomel pills to be taken at bedtime," by supplying twenty-four pills inscribed "2 pills to be taken 3 times a day." Twenty-two of the pills were taken. The prescription was said to be very indistinctly written. Damages of £150 were obtained. The assistant who dispensed was qualified.

(5) July, 1902.—Apprentice to chemist supplied laudanum for tincture of rhubarb. There was no doctor's prescription. A death resulted, and the jury returned a verdict of "Misadventure."

(6) May, 1902.—Assistant to chemist supplied strychnine on an order for morphine. A doctor took some and died.

(7) August, 1901.—Drug stores supplied methylated spirits for lime water. A dose, according to doctor's instructions, was given an infant, who died from syncope, due to a convulsive fit, consequent on an irritant. The bottle was "put up" on the manager's instructions by a boy. Verdict, "Death from misadventure."

(8) June, 1901.—Chemist supplied by mistake strychnine in a cough mixture which he prescribed for a child. He was tried at the Assizes and liberated on his own recognisances. It was urged at the trial that at his great age (eighty-two) he did not appreciate the regulations to keep poisons apart from other drugs. An undertaking was given that he should not again go into business.

(9) August, 1900.—Assistant to chemist was applied to for "fluid magnesia," but after a dose had been given to a child it was discovered that the bottle contained "liquid ammonia." Medical evidence did not in any way attribute the death which followed to swallowing ammonia. A verdict that deceased died from diarrhœa and convulsions was returned.

(10) October, 1899.—Chemist dispensed a doctor's prescription for Mrs. A; the mixture was repeated. Then the medical man sent a few days afterwards a new prescription for a Mrs. A of a somewhat similar but not identical address. This was dispensed in the ordinary way. Next a "repeat mixture" was ordered for Mrs. A with the result that the first prescription ordered by the doctor was dispensed. Chemist thought he was dispensing for two Mrs. A's, but there was only one. The first medicine was for reducing fever, the second was a tonic. Verdict, "Death from milk fever, probably accelerated by the mistake in the medicine."

It will be observed that fatal results are reported in all the published accounts of mistakes in doctors' surgeries, and that in the list of mistakes in chemists' shops two cases without fatal results are included and one doubtful case. It should also be noted that in two of the fatal cases in chemists' shops the chemist combined the functions of both prescriber and dispenser.

Doctors not Competent to Dispense Medicines.

These published accounts speak for themselves. It may confidently be said:—(1) That few doctors are competent by proper training to dispense. (2) That even if they were rendered more fit by education to discharge that function, the very nature of their other duties militates against that concentration of thought which the experience of pharmacists teaches is so essential in the practice of pharmacy. (3) That the separation of prescribing from dispensing necessarily insures much greater care and thought by both the prescriber and dispenser, and, further, in each case one is a check on the other. (4) That it would be more satisfactory from a public point of view were doctors freed from the possibility of having mistakes to cover or answer for. This latter could be best obtained by separating pharmacy from medical practice altogether, or by insisting on doctors employing only qualified chemists in their surgeries, the doctors themselves not to be allowed to dispense. There is ample precedent for the former of these alternatives. In France, for instance, physicians are not allowed to sell medicines to their patients, or even keep a stock of specially-prepared medicines on hand for dispensation, except when the pharmacist of a locality refuses to make up a prescription according to the doctor's orders, and only then after duly stating his refusal, or again in cases where there is no pharmacy within a few miles of the doctor's residence. Although the doctor cannot, in principle, sell or retail medicines, he has the right to have them prepared in his presence by a pharmacist of his choice, and take the same himself to his sick patient. In Germany and Austria doctors cannot dispense medicines except where, as in sparsely-populated districts, the population is too small to support a pharmacist. According to the Dutch, Danish, Italian, and Spanish medical laws, the doctor prescribes the medicine and the apothecary prepares it. The doctors who establish themselves at places where no apothecary is established are authorised to furnish medicine. Without enumerating all countries where pharmacy cannot be conjointly practised by the medical profession, it may be mentioned that even in such a Republic as the Argentine prescriptions can only be dispensed in pharmacies unless there is not one within reach of the medical man.

Dispensing as a Trade Matter.

It may be said that this is a trade agitation. It is as much a trade matter for the chemist who is specially trained for the purpose to have the dispensing of medicines as it is for the doctor to desire to participate in it. But, as a matter of fact, the question is one of considerable public importance, and complaint as to the deficiencies of the present system can only come from pharmacists initially, because to them is made known the manner in which the public suffer, or run the risk of suffering, through the combination of the functions of prescriber and dispenser. That the "trade" aspect of the question is not lost sight of by a section of the profession is shown by a letter to the *British Medical Journal*, which also illustrates the manner in which the public suffer:—"After many years of both dispensing and non-dispensing practices, I infinitely prefer the former. Double the income, with half the work, is the result of dispensing. If the practice exceeds £700 it is well to keep a dispenser, in my experience, and this can be done with little expense, even in smaller practices, by the aid of a pupil or lady dispenser who will also act as governess. I never found dispensing affect one's social position, though I certainly do think it is *infra dig.* to be seen mixing medicines.—Yours, etc., 'Common Sense.'" A better example is that furnished by letters read in an action brought by a *locum tenens* to recover fees due. The defendant doctor wrote to the plaintiff doctor:—"The surgery, to pay expenses, must make at least £4 per week, so charge them more, and put in second bottles and plasters, ointments and lotions whenever you get the least chance. I thought I would give you another hint *re* the practice. When visiting a certain house I saw you gave a big 6-oz. bottle to a child five years old, and the dose marked on it was one teaspoonful three times a day. Now you will see at once that we should never make a fortune at that rate. There would be forty-eight teaspoonful doses in that bottle, costing 1s., and taking three every day, these would last for sixteen days. Kindly remedy this. Give to a child of that age ℥iss. bottle, charge 1s., and order a teaspoonful every two or three hours, so they may come back next day or the day after. The 6-oz. bottles are for adults, and order one tablespoonful dose at least four times a day."

Some Evils of Dispensing by Doctors.

Both the Council of the Pharmaceutical Society and the General Medical Council have been moved in this matter of doctor's dispensing. But before detailing the circumstances leading to these enquiries, it may be mentioned that the late Dr. D. J. Leech, the Chairman of the Pharmacopœia Committee of the General Medical Council, in addressing the School of Pharmacy of the Pharmaceutical Society, in 1899, said:—"The practice of pharmacy by doctors is not only an evil to the pharmacist but to medical men themselves. It leads practitioners to limit themselves unduly to the use of certain drugs, and they lose time which might be devoted to other and more profitable matters. It is true there are also many people who like to have their medicine from a doctor, but I believe medical men would gain if, whenever possible, they gave up dispensing, and there are few places in which there are not pharmacists ready to take up the work." At some of our medical schools the abolition of doctors' dispensing has been advocated, notably by Dr. Risien Russell, in an address to University College Hospital Medical School in 1901. The medical journals have also not been silent on the subject. The *British Medical Journal*, in an editorial in April, 1901, after referring to the prosecutions against medical practitioners in the West of Scotland, who left open shops away from their residences in charge of unqualified dispensers, says: "There is another abuse not so easily controlled. . . We allude to the employment of unqualified persons as dispensers at surgeries some distance away from the practitioner's residence. A case occurred not long ago" (see December, 1900, in above list) "in which a practitioner, having four of these surgeries connected with his house by telephone, telephoned to the woman in charge, an unqualified person, to make up a prescription containing, among other things, nux vomica, for a patient whom he had not seen. This was of course indefensible, and if it could be shown to be a common practice, would constitute an abuse for which, in the interests of the medical profession, the General Medical Council would be bound to find some remedy." Again the *Medical Press* said in May, 1899:—"The General Medical Council has done its best to throw cold water on the outcry against the employment by medical practitioners of unqualified dispensers, and the Government is delighted to have an excuse for leaving these matters as they are. There is not much reason to suppose that such accidents are common, but it is impossible to gainsay the assertion that if they are frequent the public would not be likely to hear of them, seeing that it rests with the person who has most to lose from a scandal to get the dead past to bury its dead."

The Heaton Norris Fatality.

The "outcry" to which reference is made above was that which followed the Heaton Norris fatality in 1899. The subject was brought before the Privy Council, Parliament, the General Medical Council, and the Pharmaceutical Society. Mr. W. S. Glyn-Jones addressed a letter to the Privy Council, pointing out that the accident was as much due to the ignorance as the carelessness of the dispenser, and that although it might be said an isolated case did not show that the practice was common, it was a wonder, in view of the death certificate, that any case became public. He suggested (in view of the then probable fresh poisons legislation) that if it was not expedient to prevent doctors dispensing, it should be easy to enact that the assistants employed should be qualified chemists or doctors. This letter was brought before the notice of the Pharmaceutical Council, and referred, with a suggestion from Mr. Glyn-Jones that an amendment of the Act should be sought, to the Law and Parliamentary Committee. Pertinent questions were asked by Major Rasch in the House of Commons, but only unsatisfactory replies were elicited. The Privy Council forwarded several communications to the General Medical Council, and a committee which was appointed to consider them issued a very weak and unsatisfactory report, but from this and other reports it will be seen that the General Medical Council will not countenance unqualified medical practice, regards as unprofessional conduct the employment of unqualified persons to sell poisons in doctors' open surgeries, but declines to interfere with the employment of unqualified persons in the private dispensaries of doctors. And the Pharmaceutical Society seems chary of interfering in view of the General Medical Council's action, or, rather, inaction.

The Decay of Prescribing.

It has lately been emphasised in the medical press that the doctor is not now a capable prescriber. The *Lancet*, for instance, only in April last, observed that "owing to the methods of instruction adopted at the medical schools at the present day in relation to practical pharmacy it is not a matter of surprise that practitioners should sometimes go astray when writing prescriptions." And Mr. Donald McEwan, in a paper on "Limits of Discretion in Dispensing," having pointed out that the choice of a suitable pill excipient is frequently left by the doctor to the dispenser, the *Lancet* has acknowledged that this is "in consequence of the want of practical dispensing experience on the part of medical students." In an article in the *British Medical Journal* for January 10 of this year it is stated that: "To some of those who have experience in the examination of students for their qualification to practise there is no fact more striking than the extent to which inefficiency prevails in this elementary but most necessary accomplishment"; and this appears to be supported by the practice of so many doctors ignoring the Pharmacopœia and ordering nostrums, proprietary preparations, and portable medicines selected from automatic prescribing price-lists, with the result that the patients copy the example of the doctor and prescribe for themselves to such an extent as to be a grave public danger, and against the consequences of which chemists are frequently called upon to warn customers of probable serious results.

The Separation of Dispensing from Prescribing.

The importance of separating dispensing from prescribing was very vividly impressed on my mind during a short experience as dispenser to a surgeon in Wales. During the holiday of my employer a neighbouring practitioner acted as *locum tenens*. He came in about midnight one night, and asked me to put up a draught containing a drachm of laudanum. Thinking that he looked rather excited, I enquiringly mentioned the dose, and was measuring it very carefully when, appearing to be annoyed at my want of quickness, he took the laudanum bottle out of my hand, poured as near as I could guess about 3 drm. into a 1½ oz. phial, and made it up with camphor water. The patient who took that draught did not wake up the next morning, and the death certificate was in order. During my connection of over forty years with many chemists' shops, only one serious accident has been personally brought under my notice, and in that case there was, fortunately, no serious inconvenience produced, and that was in a case where the chemist prescribed and dispensed the medicine, and the mistake would not have been possible with the present regulations as to the storage of poisons. This subject was referred to by Mr. Deane in his addresses at Bath and Birmingham in 1864 and 1865. Mr. Stephenson at Aberdeen in 1885, and Mr. Martin at Oxford in 1894, in an admirable address to this Conference, also referred to doctors dispensing, pointing to the deep-rooted habit of the English people to expect the doctor to supply the medicine he has prescribed, and observing that any change can only come about by the slow process of educating the patients and by the exhibition of goodwill and feeling between medicine and pharmacy. He added: "Before it can happen universally, there is no doubt that pharmacy must have acquired such a professional standing and education as will enable it to perform its delicate and confidential function with the tact and reserve which is the outcome of prolonged training." I have only quoted the opinions of doctors who defend the practice of dispensing; I could easily quote much more weighty opinions from medical men of higher ideals, who realise that the methods pursued in the surgeries of doctors who do their own dispensing are injurious to the elevation of the medical profession. As it it perfectly well known that nearly the whole of the best and most eminent men in the profession carefully avoid having anything to do with dispensing, it is not necessary for me to quote their opinions. I believe that the separation of medicine and pharmacy is proceeding, but the progress is very slow. I venture to hope that my humble contribution to the subject will promote the objects that we have in view—greater respect for the noble profession of healing, greater usefulness of the pharmacist, and, above all, greater safety of the public. Let all our aims be with a view to being of service to others, satisfied that the reward to ourselves will be in proportion as we do good work.

PRACTICAL NOTES AND FORMULÆ.

Odol Dentifrice.

Salol, 40 Gm.; saccharin, 0·4 Gm.; thyme oil, 10 drops; peppermint oil, 300 Gm.; tincture of vanilla, 200 Gm.; alcohol (90 per cent.) to make 1,000 Gm.—*Amer. Drugg.*, **42**, 100.

Relcus's Ointment.

Iodoform, 1; salol, 2; powdered boric acid, 5; antipyrine, 5; vaseline, 40. This ointment is valuable for the dressing of all wounds, particularly those which are suppurating or are of doubtful asepsis. It is at the same time antiseptic, analgesic, and deodorant.—*Journ. Pharm. Chim.* [6], **17**, 407.

Waterproof Cement.

Alcohol (methylated), 95 per cent., 1,000; sandarac, 60; mastic, 60; turpentine oil, 60; dissolve the gums in the spirit and add the turpentine. Soak glue, 125; isinglass, 125, in water until saturated; drain, press off excess of water and melt the soft residue on the water-bath. Heat the solution of resins, also to near boiling point on the water-bath, and mix the two solutions while hot. This cement is quite resistant to cold and almost so to hot water.—*Drog. Zeit.*, through *Nat. Drugg.*, **33**, 60.

Modified Arsenical Caustic.

Danlos renders arsenical caustic paste less painful, without materially lessening its efficacy, by combining orthoform and cocaine hydrochloride with the active ingredients, in the following proportions:—Porphyrised arsenious acid, 1; cocaine hydrochloride, 1; orthoform, 8. The cocaine lessens the immediate, the orthoform the consecutive, pain. The powder is applied, mixed with a few drops of water, in the form of a paste.—*Nouv. Rem.*, **19**, 149.

PAPERS COMMUNICATED TO THE CONFERENCE.

NOTE ON COMPOUND TINCTURE OF BENZOIN.

BY ALFRED WRIGHT, A.K.C. (LOND.), A.A. (OXON.),

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In June, 1901, a chemist at Birmingham was summoned for selling compound tincture of benzoin containing only 82 per cent. of the solid extract required by the B.P. The analyst's report showed that the sample only contained 147 Gm. (in 1,000 C.c.) of solid extract, whereas according to the B.P. there should have been 183 Gm. Eventually the summons was withdrawn, the Somerset House authorities having stated that the sample bore no evidence of being below the strength of the compound tincture of benzoin made according to the particulars prescribed in the British Pharmacopœia. Subsequently Dr. Hill, in his quarterly report to the members of the Health Committee of Birmingham, stated that his standard for calculation was 180 Gm. of solid extract per litre, a standard which had been advocated by a well-known manufacturing chemist, and also by the analyst to the Chemists' Defence Association. A sample prepared in his own laboratory yielded 182 Gm. per litre, and twenty-three samples bought from various chemists in the city and submitted to him by the inspector since the issue of the 1898 British Pharmacopœia gave an average of 180 Gm.; the average of the whole of the samples received, including two adulterated ones, was 176 Gm. Of those twenty-five samples, the two referred to, containing respectively 115 and 147 Gm. of solid extract, were certified as adulterated, and the vendors were prosecuted and fined £20 and £5 respectively; two, containing 158 and 169 Gm. of solid extract, were somewhat deficient in strength, and the remaining twenty-one samples contained 174 to 201 Gm. In the face of those figures Dr. Hill stated that he could not conscientiously pass a sample containing only 147 Gm. per litre as genuine, as he felt it was neither fair to the public nor to careful chemists and druggists, as it put a premium on the use of inferior ingredients. Dr. Hill thought it probable that the sample in question had not been made from benzoin alone, but from benzoin and bark, and how the chemists at Somerset House could give the certificate they had excited his wonder and passed his comprehension, unless they made for their guidance a standard tincture from benzoin and bark instead of from benzoin. Six other samples of compound tincture of benzoin received during the quarter were of satisfactory strength, containing from 175 to 186 Gm. of solid extracts per litre. Subsequently a letter written by Mr. T. Dunlop was printed in which the writer stated that he had made two half-pints of tincture, one with Siam benzoin (in tears), the other with Sumatra benzoin (containing 17 per cent. of barky matter, an equivalent for this being taken). The former evaporated till it ceased to lose weight, gave 22 per cent., the latter 23 per cent. of solid extract. Mr. Dunlop concluded with an expression of opinion that a tincture with only 14·7 per cent. of extractive was no credit to the individual.

With these statements before me, I thought it might be of interest to the members of the Conference if I endeavoured to ascertain how far in practice the figures given by Dr. Hill were in accord with figures obtainable from tinctures sold to the public. I therefore procured commercial samples of the various drugs used in the preparation of the tincture, the samples being such as could be purchased in the ordinary way of trade from the wholesale houses. The drugs were assayed, and gave the following figures so far as regards solubility in B.P. alcohol:—

Socotrine aloes	83	per cent.
Balsam of tolu	94·25	per cent.
Storax purified by pure spirit	89·5	per cent.
Storax purified by methylated spirit	91	per cent.
Storax unpurified	58	per cent.
Siam benzoin, first quality	95·5	per cent.
Siam benzoin, second quality	96·75	per cent.
Sumatra benzoin, first quality	96·25	per cent.
Sumatra benzoin, second quality	67·25	per cent.
Sumatra benzoin, third quality	73·25	per cent.

With these drugs I then prepared half-pint samples of compound tincture of benzoin and obtained the following results:—

—	Specific Gravity.	Amount of Extractive per Litre.
Siam benzoin, first quality	0·892	200·2 Gm.
Siam benzoin, second quality	0·892	200·4 Gm.
Sumatra benzoin, first quality	0·892	200·2 Gm.
Sumatra benzoin, first quality, with unpurified storax	0·887	162 Gm.
Sumatra benzoin, first quality, with methylated spirit purified storax	0·892	190·1 Gm.
Sumatra benzoin, second quality	0·885	172 Gm.
Sumatra benzoin, third quality	0·887	194·2 Gm.
Sumatra benzoin, third quality, with unpurified storax	0·892	143 Gm.

I then proceeded to obtain specimens of the tincture from various parts of England, Scotland, and Wales. I asked that with each sample I might be informed whether the tincture was home-made or purchased from a wholesale house, and I have therefore so classified the results:—

Home-made.

—	Specific Gravity.	Amount of Extractive per Litre.
Sample 1	0·8925	160 Gm.
Sample 2	0·891	184 Gm.
Sample 3	0·878	140 Gm.
Sample 4	0·895	204 Gm.
Sample 5	0·867	106 Gm.
Sample 6	0·885	172 Gm.
Sample 7	0·890	163·8 Gm.
Sample 8	0·8875	176 Gm.

Made by Wholesale Houses.

—	Specific Gravity.	Amount of Extractive per Litre.
Sample 1	0·8825	142·2 Gm.
Sample 2	0·892	164·2 Gm.
Sample 3	0·892	172 Gm.
Sample 4	0·882	154 Gm.
Sample 5	0·900	192 Gm.
Sample 6	0·875	143·8 Gm.
Sample 7	0·906	185·8 Gm.
Sample 8	0·8925	183·8 Gm.
Sample 9	0·8925	181·8 Gm.

Uncertain.

—	Specific Gravity.	Amount of Extractive per Litre.
Sample 1	0·892	174 Gm.
Sample 2	0·8725	122·2 Gm.
Sample 3	0·887	180 Gm.
Sample 4	0·8925	180 Gm.

The class "Uncertain" is of such tinctures that could not with certainty be included in either of the other classes. The figures I have given represent in each case the mean of two determinations. The specific gravity was in all cases taken with the usual specific gravity bottle. The extractive was determined by evaporating 5 C.c. of the tincture to dryness on a water-bath until the weight was constant. Comparing the figures obtained from tinctures prepared by myself with the results from the tinctures from various sources, I am inclined to think that it is probable, in cases where the amount of extractive is low, that this may be due to the use of unpurified storax. I am also bound to admit that though at the outset I thought the standard proposed by Dr. Hill and Mr. Liverseege was too high in the result, I must agree with them that the adoption of a standard of 180 Gm. per litre is reasonable.

WILLOWS USED IN PHARMACY.

BY E. M. HOLMES, F.L.S.

Comparatively little information concerning willow bark is found in works on materia medica, and still less concerning the varieties from which salicin is commercially obtained. The recent investigation by Dr. Jowett showed that the percentage of this substance varies considerably according to the time of year at which the bark is gathered, and even according to the sex of the tree. A recent trial in a court of law showed that *Salix fragilis* is the species that is generally used for the manufacture of salicin, although other species, especially those allied to *Salix purpurea*, yield a large percentage of it. The fact that bark, after keeping, or if not carefully harvested, yields very little salicin, was also stated. But the fact that the bark is usually imported instead of being obtained from the fenny districts of England and Scotland, led me to enquire why the bark containing salicin is not available in this country. Although my enquiries have not yet produced so satisfactory a result as I could wish, some of the information that I have obtained seems of sufficient general interest to bring before the members of the Conference. In the first place I found that growers of willows for basket manufacture cultivated a large number of varieties, which they know only by trade names, and are as a rule ignorant of the botanical species to which they belong. In the second place the shoots are usually cut down every year if required for basket or chair making, or every two years if required for splitting to make bands for casks, etc. As the plants rarely flower until they are three years old or more, there is little chance of identifying them botanically unless they are cultivated in a garden. It will be readily understood, therefore, that it is a matter of some difficulty to ascertain what are the botanical species or varieties actually under cultivation in this country.

The character of the stipules, the mode of growth, and the serration and pubesence and shape of the leaves, are the only guides available, and these are by no means so useful as might be supposed, since they vary according to circumstances, the shape of the stipules being alone the best indication of the species. Stipules, however, are not always present. Different species of the genus *Salix* are known respectively as willows, osiers, and sallows. The term willow is generally applied to the species that form trees, even when they are pollarded close to the ground, and grown as shoots or osiers, 6 to 9 feet long. The name osier is especially applied to forms and hybrids of the species *S. viminalis*, which grow readily into long rods or shoots almost without lateral branches. The name sallow is given to willows that have a shrubby growth, and more or less broad downy leaves.

Willows.

The tree willows in cultivation are three in number, as follows:—

Salix alba.—The white willow. This is the species usually allowed to form a trunk about 8 feet high, and then pollarded. It is common along the banks of canals and ditches in marshy land, and the leaves have a white silvery appearance. The heartwood of the trunk is tough and not easily indented and white, hence its very appropriate name. Mr. A. T. Maw tells me that the wood is used for making wooden legs and chip boxes, such as are used in pharmacy. These latter are made in Hamburg, where the wood is cut up in factories, and served out to workpeople, who make the boxes in their own homes. Probably this accounts for the fact that they are made cheaper in Germany than in England. The wood of the white willow is also in considerable demand for making cricket bats, and of late years has become so scarce (being worth about 5s. per square foot) that the demand is greater than the supply. This is possibly owing to the fact that when the trees are pollarded they soon rot and become hollow, which they do not so readily do when allowed to grow naturally.

Salix fragilis.—This is now commonly called the crack or snap willow, because in spring-time a slight pressure causes the branches to break off from the stem. Although a marked feature in this species, *Salix fragilis* is by no means the only species in which it occurs. The wood of the tree is red, hence it was formerly called the red willow, but that name has quite gone out of use in botanical works in this country. This has led to some confusion concerning the plant, since the name of *Salix rubra* has been given to a hybrid between *S. purpurea* and *S. viminalis.* The name of red willow bark is, however, still retained to some extent in trade usage in Belgium, where the name "rood scorce"—*i.e.*, red bark—is locally applied to the bark of the red willow.

Salix triandra.—This willow and its hybrids and varieties is the principal one grown in this country in the form of shoots or osiers for white basket-work. A large number of varieties are known under different names, but are generally distinguished as willows.

Osiers.

Salix viminalis.—This is considered as the type of the osiers. The leaves are long, very tapering, rolled back slightly at the edge, and white and downy beneath; whilst those of *S. triandra* have a green appearance, and are neither silvery nor white. The true osiers are chiefly used for hampers and brown wicker work, and are not usually peeled.

S. vitellina.—This species is readily recognised by the bright yellow colour of the bark of the annual shoots. It is chiefly sold for binding purposes—*i.e.*, as a withy—in horticulture and agriculture, thousands of bundles being annually used by the market gardeners near London for binding celery and other vegetables, and by florists for binding packages of rose and fruit trees, etc.

S. vitellina is sometimes regarded by botanists as a form of *S. alba*, but it has not, like that species, been found to contain salicin.

Salix purpurea.—The typical plant is a bush, with branches spreading downwards, and forms only comparatively short shoots. A hybrid of this species with *S. viminalis*, known as *S. rubra*, has, however, upright long shoots, and is one of the finest, toughest, most pliable osiers, and one of the whitest when peeled. This hybrid, and other forms of *S. purpurea*, are used on the Continent in France, Belgium, Italy, and Austria for the finest fancy basket-work. The osiers are generally peeled, and as the bark contains a large proportion of salicin, it has also some value. All the varieties of this species have the leaves nearly opposite and stipules, if any, small and linear; they are usually absent in the typical form of the species. This species is apparently not much cultivated in this country, probably because the osiers are liable to give off side twigs, or roughs, which in Belgium are removed by hand labour, to which the British workman seems averse.

Salix acutifolia, known as the Russian or Caspian willow, is a very quick-growing species, which produces long rods suitable for basket-work chairs, and is grown more freely on the Continent than in this country. It is easily recognised by its purplish-black bark, furnished with a whitish-waxy bloom.

Salix pentandra.—A broad-leaved, fragrant species growing wild in the north of England, is sometimes used in Yorkshire for coarse basket work.

So far as I have been able to ascertain hitherto, the large proportion of willows grown in this country are derived from *S. viminalis* and its varieties for hampers and work made of unpeeled osiers, and from *S. triandra* and it varieties for work made from peeled osiers, the finest quality of peeled osiers being imported from the Continent. For the manufacture of salicin *S. viminalis* and *S. vitellina* are of no consideration, since they are not known to contain salicin, and the osiers are not peeled, so that the bark is not a waste product. *S. triandra*, although the osiers are usually peeled, does not afford salicin, so that its bark has no value for that manufacture. *S. pentandra*, which contains salicin, is not usually peeled, and neither *S. purpurea*, nor *S. rubra*, nor *S. fragilis* appear to be grown to any extent in this country.

The bark obtained for the manufacture of buff rods, which are so largely used for chairmaking and brown hand-baskets is of no value, since the rods are dyed by boiling them before removing the bark for eight or nine hours, so that any salicin they might contain would be in the water in which they are boiled.

The osiers, or long shoots from the truncated stocks, are generally cut in autumn, so as to give the stumps time to heal. The osiers are then placed in ditches till April, May, or June, when those that are intended for white or buff basket-work are peeled. Salicin being soluble in water, the bark naturally loses some in this way, and if the bark is allowed to be rained upon whilst drying it loses more. Apparently, also, it loses salicin by keeping, since manufacturers state that bark kept for two years contains less salicin. This may be due to an oxydase or other ferment, but the cause of it has not, so far as I am aware, been ascertained by experiment. Growers of osiers do not as a rule trouble to separate the barks of different osiers, so that the possibility of getting bark containing salicin with the greatest possible percentage can only be attained by getting the fresh bark on the spot and treating it chemically at once. This consideration has, I am told, led to a combination of manufacturers setting up chemical works close to the area of production in Belgium.

I have not yet been able to ascertain the whole of the names applied to the varieties cultivated in this country, nor to see more than a comparatively small number of the plants, so that I am not able to give at present definite evidence as to the salicin yielding species in cultivation, nor the extent to which they are cultivated. This I hope to be able to do on a future occasion. It may, however, serve to show the number of varieties that exist if I quote a few that were botanically identified at Kew a few years ago, by growing the twigs until they produced flowers.

Salix triandra.—The male plant included varieties known as Black Hollanders, Old Black (new kind), French Osier, Green Sucklings; and the female plant, Black Mauls, Molds, or Mules, Glibskins, and Jelstivers.

S. purpurea.—Welsh osier; var. *Forbyana*, fine basket osier; var. *rubra*, green box osier.

S. fragilis, var. *decipiens.*—Mottled Spaniards. I have a number of willows and osiers with their trade names under cultivation, and, when they have flowered, I hope to be able to identify them botanically, and to get them examined as to their yield in salicin.

My special thanks are due to the following gentlemen for information and specimens:—Dr. M. T. Masters, F.R.S., Dr. H. van Heurck, Director of the Botanic Gardens, Antwerp; Dr. M. Greshoff, Haarlem; Mr. R. F. Lynch, Botanic Gardens, Cambridge; Mr. J. Martindale, Staveley, Westmorland; and the following gentlemen connected with willow-growing and basket-making:—Mr. W. Allan, of Messrs. W. T. Ellmore and Sons, Leicester; Mr. L. G. Cooper, West Rasen, Lincolnshire; Mr. G. Musgrave, Stoke St. Gregory, Somerset, and Messrs. J. Plater and Son, Birmingham.

AGRICULTURAL AND HORTICULTURAL INSECTICIDES.

BY E. M. HOLMES, F.L.S.

I have noticed on various occasions expressions of opinion in the pharmaceutical press that the proceedings of the British Pharmaceutical Conference would prove more attractive to a large number who do not usually attend its meetings if some of the papers read had a bearing upon important commercial or parliamentary subjects which might either be discussed at the meetings, or subsequently in the pharmaceutical press. Within certain limits, I think the idea is a good one, and I feel that no apology will be required from me—as one who has for many years taken an especial interest in horticulture, and more recently in entomology—for offering a few observations on the subject of agricultural and horticultural poisons, with especial reference to certain recent widely published and unjustifiable misrepresentations which have appeared in the public press.

The importance attached to the scientific study of agriculture and horticulture during recent years has naturally increased the demand for insecticides and fungicides, for destroying animal and vegetable pests. Some of the chemicals used for these purposes, such as potassium sulphide, Bordeaux mixture, lime and copper and ammoniated copper preparations, carbon bisulphide, white hellebore, tobacco paper, kerosene emulsion, sulphur, ferrous sulphate, preparations of tar, quassia powder, and similar substances, do not come under the category of statutory poisons, and can be sold without restriction by anyone. A few, such as corrosive sublimate, Paris green, white arsenic and its preparations, and potassium and sodium cyanides, come within the scope of the Pharmacy Act, 1868, and although these can be sold by wholesale to retail dealers if duly labelled with the seller's name and the word "poison," such substances cannot, as you are aware, be sold by retail except by registered chemists — the persons specially trained to handle them—and then only subject to the strict regulations prescribed by the Act.

Unfortunately, on account of ignorance, or for less excusable reasons, these facts have been misrepresented by a portion of the public press, and even before an official committee appointed by a department of the State. It has been persistently stated that chemists want a "monopoly" of the sale of poisons, in order to make huge profits by such sale, whereas the real facts of the case are that the Pharmaceutical Society is bound by Act of Parliament to see that the disposal of a small number of "scheduled" poisons is restricted to those who have been educated as to the nature and properties of poisons, and fully comprehend the necessary precautions to be taken in using them. This is a public duty, imposed in the public interest, upon the Pharmaceutical Society, and is no more a monopoly than is the practice of medicine. Moreover, it is the duty of the Society's Registrar to prosecute individuals transgressing the law, whenever satisfactory information of a contravention is brought to his notice. Such action may be a distasteful thing to offenders, but ought to be a satisfaction to the nation at large. The annual prosecutions for the illegal sale of poison involves the Society (*see* Privy Council Poisons Committee Report) in an annual loss of about £700, so that this so-called "monopoly" does not appear to be of a highly remunerative character to the prosecuting body. Chemists, too —far from finding the sale of poisons a source of profit—are often compelled to forego sales, through exercising the care and discrimination required by the Statute; and they often feel impelled, on public grounds, to refuse the profit that would accrue from an indiscriminate distribution of the potent articles within the Poisons Schedule.

In cases where there is no evidence that the poison asked for is to be put to a legitimate use, or where there is a suspicion of criminal intention, it is the duty of the chemist to refuse, and he does refuse, to sell, although he may lose a customer thereby. Any appreciable profit that may be made out of the sale of poison falls rather to the lot of the wholesale manufacturer. As an instance, I may refer to an extremely dangerous and inelegant preparation known as the Ballikinrain Ant-destroyer, a half-pint bottle of which contains enough arsenic, in solution or temporarily suspended, to kill 200 people. The contents of such a bottle are said to cost the maker 7d., and it is retailed at 3s. 6d. It is remarkable that the misrepresentation of the position and aims of chemists should be made by the agents of the makers of this and similar preparations, and it is somewhat anomalous that a member of the firm which makes the Ballikinrain Ant-destroyer should also be a member of a Government Committee appointed to make inquires into the alleged necessity for relaxing the provisions of the Pharmacy Act! If the simple opportunity had been afforded the Pharmaceutical Society of challenging the composition of the Select Committee, even as a prisoner at the bar has the opportunity of challenging a jury about to be empanelled, it is not improbable that one at least of the Committee would have been excluded on the plea that he was an interested person.

It may here be pointed out that there is no imperative necessity for the use of arsenic or any other scheduled poison for killing ants and other insects, since there are in the market, easily obtainable and equally efficacious, several non-poisonous preparations for the same purpose. Indeed, it should be distinctly understood by those engaged in agriculture and horticulture that there is no difficulty whatever in obtaining safe and effectual insecticides and fungicides through any tradesman; also that it is only those few poisons which are usually selected by criminal poisoners, and those which have been most frequently used by intending suicides, that are, by Act of Parliament, purposely rendered difficult to obtain. To repeal that Act would be absurd, since the reason for its enactment was to restrict the retail sale to the public of such poisons as much as possible.

Another misstatement which has been industriously circulated through the press, by interested manufacturers, is that chemists are unable to give advice concerning the use of agricultural and horticultural preparations. But this statement will not bear investigation. In fact, the very men who have done the most to provide useful insecticides and fungicides, to make improvements in those previously used, and to publish freely such improvements, reserving only for their own profit the results of discoveries made by themselves, have been chiefly chemists and druggists. This assertion can be verified by reference to the columns of the *Pharmaceutical Journal*, or to the advertisement pages of periodicals specially catering for agricultural and horticultural requirements. In my judgment, chemists are not only acquainted with the requirements of agriculture, but are more competent than ordinary tradesmen to give reliable advice as to the remedies to apply in any given case. Registered chemists have to undergo a stringent examination in botany and chemistry, amongst other subjects, an ordeal through which no ordinary tradesman is compelled to pass, and as the proper uses and doses of antidotes for poisonous substances are included in the technical education of all pharmacists, there can be no serious question as to their special competence to advise and caution the public on these matters. It is also quite beyond dispute that no one class of the community has devoted more time and applied its scientific knowledge to perfecting processes and improving well-known preparations than the chemist, and no one has more freely published the results of his scientific work on the subject. It gives me much pleasure in specially acknowledging the value of the contributions of Mr. G. F. Strawson, whose recent paper on "Standard Fungicides and Insecticides in Agriculture" has received the approval of many influential members of the Royal Agricultural Society.

I may add that it would naturally be the desire, as well as to the interest, of the chemist to sell, whenever possible, non-poisonous preparation instead of those prepared with statutory or scheduled poisons. Judging from inquiries made recently at the Royal Agricultural Show at Park Royal, it would appear that the majority of wholesale dealers—such as the large florists and dealers in agricultural preparations—prefer to sell non-poisonous articles. But the conservatism of the untravelled British farmer and of the homely shepherd keeps up some demand for the more poisonous articles, as giving less trouble, whilst the risk is ignored. It is only this circumstance that prevents to a great extent the use of newer and safer remedies, since harmless preparations not containing scheduled poisons are readily obtainable, and are constantly advertised in agricultural and horticultural journals.

The danger of using poisons like arsenic and Paris green (copper aceto-arsenite) lies, of course, in their insolubility in water, and the probability that when the fluid in which they are dissolved or suspended is evaporated, or is washed away by rain, the insoluble powder may adhere to foliage upon which cattle or horses browse; or, falling upon grass below fruit trees over which the poison has been sprayed, may be eaten unwittingly by valuable dogs, or by fowls, or geese, or animals browsing upon the grass. Two instances have recently been related to me of serious loss resulting from the use of horticultural preparations containing arsenic. In the one case, two valuable cows were lost after innocently feeding upon the grass bordering a path which had been sprinkled with weed-killer; and in the other case, about a hundred and fifty fowls were destroyed through pecking grain or small stones which had inadvertently become splashed with arsenical weed-killing solution. Tasteless poisons, like arsenic, are much less likely to be noticed by animals than acrid powders such as white hellebore, or strong smelling preparations like those of tar, petroleum, or naphthaline. I consider, therefore, that pharmacists, as the legal guardians of the public safety, so far as the sale of poisons is concerned, should aid the Government in endeavouring to reduce the death-rate resulting from the accidental or intentional use of dangerous poisons—(1) By strongly opposing any attempt to extend the sale of scheduled poisons to persons not fitted by the necessary education to safeguard their uses; and (2) by endeavouring to discover substances which are non-poisonous to human beings, and yet will effectually replace white arsenic, nicotine, and potassium cyanide, or their preparations at present in use.

The plants that are used in other countries as insecticides and insectifuges have not as yet by any means been fully exploited, nor have the number of chemical substances obnoxious to insects and fungi been fully investigated. Thus, the tea-seed cake used by the Chinese as a vermifuge on lawns, and the "tuba" root used in the Straits Settlements as an insecticide, have scarcely been tried in this country, while the value of acrid substances such as cayenne pepper, euphorbium, and lobelia, have not been turned to account. Mustard is sometimes used to rid flower-pots of worms, but a full use has not been made of many powerfully odorous but harmless substances which are objectionable to insects. Recent careful experiments have shown that tannin, oxalic acid, and other chemical substances found in plants protect them from the attacks of slugs and snails, and ordinary observation shows that some plants, such as elder, *Euphorbia*, *Campanula*, etc., are hardly ever attacked by caterpillars. The constituents of such plants are deserving of experiment as insecticides, and in organic chemistry there is work in the synthesis of such bodies as the active principle of *Pyrethrum cinerariæfolium*, the only bar to the use of which is its expense. The chemical nature of the poisons employed by spiders and other insects in killing their prey is also worthy of investigation, while further research is necessary with regard to the study of wild plants that carry diseases to those under cultivation. Thus, it is well known that *Dulcamara* and other Solanaceous weeds in hedges may carry the potato disease on from year to year in cultivated ground, and that the barberry in hedges carries one form of the disease that attacks wheat, and will communicate it to the crop. Dr. Plowright's researches have shown many instances of this habit in fungi, of living part of their life on one plant and part on another.

The same kind of research is also needed concerning the habits of insects. Thus, it is well known that the bark of the plum tree, so often planted (because tithe-free) in Kentish hedges serves as the home of the winter-stage of the hop aphis when the hops are cut down. It is also well-known that oily or fatty preparations, if applied to insects so as to cover their spiracles or breathing pores, rapidly kill them by simple asphyxiation, and that, if oil be combined with a strong smelling preparation like that of peat wood or coal tar, it will prevent the insects in the imago or fly stage from depositing their eggs on animals. When the life-story of an animal is known, we find there are always some periods in its existence at which it can be more easily prevented from propagating its species, and such knowledge can profitably be turned to account. It has been shown by a lady who read a paper at a recent meeting of the Linnean Society that even the minute scale insects which are so difficult to destroy have a natural enemy in the form of an internal parasite that reduces their numbers. Sufficient attention has not been paid to the insect friends of the gardener and farmer, such as the lady-bird larva, the lace-wing fly, ichneumon flies, and various sylphid flies and Hymenoptera. In view of the disturbance of the balance of Nature, owing to the destruction of many useful birds, it seems highly probable that in the future some of the more minute insect friends of man will have to be specially cultivated for use on farms and in gardens. An instance of the evil of interference with natural laws has been shown by the introduction of the mongoose into the West Indies resulting in the increase of ticks and other insects to an enormous extent, so as to prove a serious injury to domestic animals. The mongoose, which was introduced to destroy the rat, gave the preference to fowls, and to the native lizard that feeds on and keeps down the ticks and other insects, with the result that the West India Department of Agriculture is already recognising the necessity for protecting such birds and animals as destroy insects injurious to agriculture and horticulture. Many pharmacists possess a love of natural history, and I venture to suggest that, if they exercise their hobby in this practical direction, they will find it possible to combine business with pleasure. Or, if they prefer to keep the two quite distinct, those pharmacists who use their scientific acquirements to improve the position of agriculture, may at least have the satisfaction of feeling that their native country is all the better for their having lived and worked in it.

THE NON-EXISTENCE OF MYDRIATIC ALKALOID IN LACTUCA VIROSA.

BY J. O. BRAITHWAITE AND H. E. STEVENSON.

In a communication to the Chemical Society some years ago (*Pharm. Journ.* [3], **22**, 449), T. S. Dymond announced the isolation of hyoscyamine from "commercial specimens of extract of wild lettuce and of the variety of the edible plant known as cos lettuce, and from a dried flowering plant of the wild lettuce."

Although the matter attracted some attention at the time among pharmacists, who had not expected the occurrence of this alkaloid in a member of the natural order Compositæ, and among the lay public, who were interested to learn of the presence of this poison in a favourite salad herb, an interest which was duly reflected in a leading article of a quasi-scientific character in the London *Daily Telegraph*, it does not seem to have occurred to anyone to employ the very delicate and sensitive physiological test with the juice of the plants, and thereby confirm or refute the conclusions of the author.

The recent appearance of a considerable number of plants of the wild lettuce, *Lactuca virosa*, at Hale End and Chingford, in Essex, has again attracted our attention to the subject and furnished us with material for applying the test. This we have done with negative results. We are unable to obtain the least trace of mydriatic action by the application to the eye of such solutions as would contain hyoscyamine were that base present in the plant.

Four hundred grammes of the fresh flowering herb (which was some 4 ft. high) was crushed in a mortar a few hours after gathering, covered with sufficient 5 per cent. aqueous hydrochloric acid and macerated, in the cold, for forty-eight hours, with frequent agitation. The liquid portion was then removed by straining, the residue strongly pressed, and the bulked liquid filtered. This acid aqueous extract was then shaken out with ether, and the ethereal layer removed. The acid liquid was then made alkaline with ammonia and again shaken out with ether. This separated ether should contain the bulk of the mydriatic alkaloid, if such were present. It was accordingly shaken out with a small volume of water, slightly but distinctly acidified with hydrochloric acid. Several drops of this acid aqueous solution applied to one eye of each of us failed to give the slightest indication of mydriasis.

The acid liquid was then again rendered alkaline with ammonia and shaken out with two successive quantities of ether, which were evaporated at normal temperatures in a small glass capsule. The residue was imperceptible. The glass capsule was washed round and gently warmed with a small quantity of very dilute hydrochloric acid, and the solution applied to one eye of three individuals, several drops being instilled in each case. Again, no trace of mydriasis was observed, the pupil of the eye in all three individuals, remaining normally undilated, and of the same size as that of the untreated eye. The same eye was treated in each case, so that had any trace of mydriatic base been present in the first application, it would have aided the reaction in the second dose.

In consequence of these results we are forced to the conclusion that wild *Lactuca virosa* does not contain a mydriatic alkaloid, even in such minute trace as will give the very delicate physiological reaction.

A COMPARISON OF DIETERICH'S PROCESS FOR THE DETERMINATION OF MORPHINE IN OPIUM WITH THAT OF THE BRITISH PHARMACOPŒIA.

BY HAROLD E. MATTHEWS.

In 'Helfenberger Annalen' for 1896, E. Dieterich publishes a process for the determination of morphine in opium, which consists essentially in removing the bulk of the narcotine present in a water solution by quick precipitation with a limited quantity of ammonia and subsequent precipitation of the morphine by excess of ammonia in presence of ethyl acetate. An examination of the process was made with a view to a comparison with the process official in the British Pharmacopœia of 1898.

The details of Dieterich's process are as follow :—

"Triturate 6 Gm. of opium in fine powder with 6 Gm. of water, dilute, wash out into a weighed flask and make up to 54 Gm. with water. Let the whole digest for fifteen minutes, shaking frequently, and then filter through a folded filter 10 Cm. in diameter. Take 42 Gm. of the filtrate, mix with 2 Gm. dilute ammonia [1](1·7 per cent. NH_3) by rotation, not shaking, and filter through a neatly-folded filter 10 Cm. in diameter. Mix 36 Gm. of the filtrate in an accurately-weighed flask with 10 Gm. of ethyl acetate by rotation, add 4 Gm. of dilute ammonia, close the flask and *shake* well for ten minutes.

In order to separate the resulting emulsion add immediately 10 Gm. of ethyl acetate, and carefully pour off the ethereal layer as completely as possible. Again add 10 Gm. of ethyl acetate and repeat the decantation. Pour the remaining liquid in the flask (leaving behind the crystals adhering to the flask) through a filter 8 Cm. in diameter, and wash out the flask and filter twice with 5 C.c. of water saturated with ethyl acetate. When the flask has well drained and the filter is dry (dry at 100° C.) remove the crystals on the filter to the flask by means of a camel's-hair brush. Set the flask to dry immediately, and dry till the weight is constant."

It will be seen that the morphine weighed is intended to represent 3 9/11 Gm. of opium (36/44 of 42/54 of 6), but the successive quantities of the morphine containing liquors which are weighed off are obviously more concentrated as regards morphine content than are the bulks of which they are a fraction.

It may be asked if digestion in water for fifteen minutes is sufficient to extract the morphine from finely-powdered opium. It was found that the figure obtained on digesting for a longer period was practically the same as that from a digestion of the specified duration.

The precipitation of narcotine previous to precipitation of morphine is attended with the possibility of loss of morphine in the case of an opium containing but little narcotine.

The process is easily carried out, and is very expeditious, the whole of the operations up to the point of drying the morphine crystals occupying about an hour. It should be noted that a temperature of 100° C. is mentioned as sufficient for drying the morphine crystals, whereas everyone knows that a slightly higher temperature, viz., 110° C. (B.P.) (or, according to W. Göhlich, 120° C.[2]), is necessary to render morphine anhydrous and to get concordant results.

To make a comparison several analyses of the same sample of good Turkey opium were made by both Dieterich's process and that of the British Pharmacopœia. But in both cases the morphine was dried at 110° C. and subsequently titrated as in the B.P. process. The results are given in the following table :—

Total yield of Morphine.	Pure Morphine by Titration.	Per cent. Purity of the Morphine.	Percentage pure Anhydrous Morphine.
Dieterich 1 0·5921..	0·5875	99·23	15·39
" 2. 0·5964..	0·5913	99·14	15·49
" 3. 0·5954..	0·5948	99·9	15·58
Average..0·5946..	0·5912	99·42	15·49
B. P..... 5. 1·5720..	1·5680	99·76	15·68
" .... 6. 1·5633..	1·5550	99·47	15·55
Average..1·5676..	1·5615	99·61	15·61

Dieterich's process involves less waste of opium than the British Pharmacopœia process. It has the further advantage of being much more expeditious. But it is not quite as exact as the B.P. process, giving a morphine which is less pure and a smaller total morphine yield.

In the preceding table it should be noted that there is a wide discrepancy between titration No. 3 and the two previous ones. Indeed, if this be neglected, and the mean of the two previous determinations taken, the superiority of the B.P. process as regards accuracy appears to be even greater.

To the buyer of opium this process of Dieterich's appears to me to be a valuable one when slightly modified, on account of the rapidity with which a determination can be made, the results obtained being sufficiently accurate for commercial purposes. But the pharmacopœial process is certainly the better for the exact standardisation of galenical preparations of this most important drug.

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[1] A mixture of 17 Gm. liquid ammonium, Ph.G., and 83 Gm. water.

[2] *Arch. Pharm.*, 1895, **233**, 631-645.

NOTE ON THE CHLOROFORMS OF BELLADONNA AND ACONITE OF THE CONFERENCE FORMULARY, WITH SUGGESTIONS FOR THEIR IMPROVEMENT.

BY R. WRIGHT, F.C.S.
Pharmaceutical Chemist.

The processes for the preparation of the above galenicals are both more or less faulty, and the resulting products are equally unsatisfactory, showing a remarkable variation in character and potency. The experiments herein detailed were set on foot with the object of ascertaining the lines on which it would be necessary to proceed in order to secure really active and reliable preparations.

Chloroformum Belladonnae.

The process of the Formulary has been adversely criticised by P. W. Squire,[1] who states that the result obtained by it is no better than by the original process of simple percolation of the root given in the companion.[2] In a record of some experiments on the subject carried out by W. A. H. Naylor, this statement was fully confirmed.[3]

Examination of Commercial Samples.

Six commercial samples were obtained, and the alkaloids determined by the following modification of the official assay process :—

Introduce 10 C.c. of the sample into a bottle provided with a good cork. Mix 5 C.c. diluted sulphuric acid, B.P., with 25 C.c. distilled water, divide into three equal portions and shake the chloroform with each in turn, drawing off after separation. If the liquids do not separate readily, stand the bottle in hot water, removing the cork occasionally. Should this not suffice, add a few drops of alcohol and shake, when separation will take place immediately. Bulk the acid liquids, add solution of ammonia in distinct excess, shake out the alkaloids with three successive quantities of 10 C.c. chloroform, drawing off each in turn. Mix the chloroformic alkaloidal solutions. This process of extraction is repeated twice more (*i.e.*, until the alkaloids have been thrice extracted with acidulated water). Finally, they are obtained in solution in chloroform, the chloroform recovered, the alkaloids dried over a water-bath and weighed, the weight being subsequently checked by titration. If the final acid solution be water-white, and the alkaloidal residue colourless, the volumetric and gravimetric results will closely correspond.

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[1] *Pharm. Journ.* [3], **24**, 320.

[2] 'Squire's Companion,' edition xvi., p. 127.

[3] *Pharm. Journ.* [3], **24**, 562.

The quantity of alkaloid present in the commercial samples, expressed as grammes per 100 C.c., was as follows:—1 = 0·016; 2 = 0·018; 3 = 0·122; 4 = 0·096; 5 = 0·012; 6 = 0·032.

The maximum amount possible in a strictly B.P.C. preparation, supposing perfect exhaustion of the root to have been effected, would be from about 0·2 to 0·4 Gm. per 100 C.c. From which it is evident that commercial samples of the preparation do not contain more than a small proportion of the available alkaloid.

Experiments on Alternative Processes.

For the purpose of these experiments two samples of English root in No. 60 powder were obtained. They were assayed by a process of extraction with alcohol till exhausted, and subsequent determination of the alkaloid in the tincture. A yielded alkaloid corresponding to 0·30 per cent., and B 0·38 per cent. From each of these samples, chloroform of belladonna was prepared by the following processes:—

1.—Simple Percolation.

This is Squire's original process (*vide* 'Companion,' ed. xvi., p. 127):—

Take of—

Belladonna root in No. 60 powder	4 oz.
Chloroform, a sufficient quantity.	

Pack the powder in a conical percolator and percolate to 4 fl. oz.

2.—B.P.C. Process (*q. v.*, p. 14).

N.B.—6 fl. oz. percolated from 4 oz. drug.

3.—Acid Process (1).

Take of—

Belladonna root in No. 60 powder	4 oz.
Chloroform (containing 1 per cent. by volume Glacial acetic acid), a sufficient quantity.	

Pack the powder in a conical percolator, percolate to 4 fl. oz.

4.—Acid Process (2).

As No. 3, but using chloroform containing 2 per cent. by volume glacial acetic acid.

5.—Squire's Alkaline Process (*vide* 'Companion,' ed. xvi., p. 127).

Take of—

Belladonna root in No. 60 powder	4 oz.
Ammonium carbonate in powder............	½ oz.
Calcium hydrate	½ oz.
Chloroform, a sufficient quantity.	

Mix the powders, pack closely in a conical percolator, percolate to 4 fl. oz.

6.—Ammoniated Chloroform Process.

Take of—

Belladonna root in No. 60 powder	4 oz.
Ammoniated chloroform, a sufficient quantity.	

Pack in a conical percolator, percolate to 4 fl. oz.

7.—Potassium Carbonate Process.

Take of—

Belladonna root in No. 60 powder	4 oz.
Potassium carbonate.......................	½ oz.
Distilled water	4 oz.

Dissolve the potassium carbonate in the distilled water, moisten the powder thoroughly, set aside for twelve hours. Dry carefully, reduce to No. 60 powder, pack in a conical percolator, percolate to 4 fl. oz.

The preparations resulting from the above processes were assayed, with the results shown in the following table:—

Table I.

Showing alkaloidal content of samples of chloroformum belladonnæ.

Sample.	Process.	Alkaloids in Grammes. from 100 C.c.	Approximate Degree of Exhaustion Effected.
I. A B	Squire's Simple Percolation.	0·048 0·032	16 per cent. 8·5 per cent.
II. A B	B.P.C.	0·006 0·004	2 per cent. 1 per cent.
III. A B	Acid Process (1)	0·048 0·044	16 per cent. 12 per cent.
V. A B	Acid Process (2)	0·084 0·098	28 per cent. 26 per cent.
V. A B	Squire's Alkaline Process.	0·080 0·072	27 per cent. 19 per cent.
VI. A B	Ammoniated Chloroform.	0·040 0·076	13 per cent. 20 per cent.
VII. A B	Potassium Carbonate.	0·008 0·016	3 per cent. 4 per cent.

None of these results were deemed satisfactory, although the products of processes III. and IV. showed an improvement upon the others. But it was evident that in order to secure anything like perfect exhaustion of the drug, both process and menstruum would require modification.

The modification required in the process is one which will serve to bring the particles of the drug during percolation into closer contact so as to ensure complete penetration of the tissues by the menstruum. This can be expedited by using the drug in very fine powder, and still more by moistening the powder with menstruum before transferring to the percolator, so as to secure the tightest possible packing.

The modification of the menstruum is a matter of difficulty, seeing that the range of liquids fulfilling the requisite condition of being miscible alike with chloroform and oils is so limited. The two which promised best were absolute alcohol (either pure or ammoniated), and glacial acetic acid.

Further experiments were therefore made, working on the above lines, and employing as menstruum mixtures of chloroform, alcohol, and glacial acetic acid. It was not feasible to reduce the belladonna root to a finer powder, hence the samples previously employed were also used in the following experiments. Moreover the supply of sample B was now almost exhausted, only sufficient remaining to admit of its utilisation for two of the experiments.

The following processes were tried:—

(1) Take of—

Belladonna root in No. 60 powder....	4 oz.
Glacial acetic acid	½ fl. drachm.
Absolute alcohol	1 fl. drachm.
Chloroform	1 fl. oz.

Mix the liquids, moisten the powder, pack quickly and tightly in a conical percolator—percolate with a mixture of seven volumes chloroform and one volume alcohol. The percolate was collected in three fractions, the first of 4 fl. oz., the second and third of 2 fl. oz. each.

(2) Take of—

Belladonna root in No. 60 powder..	4 oz.
Glacial acetic acid	1 fl. drachm.
Absolute alcohol	1 fl. oz.
Chloroform, a sufficient quantity.	

Mix the acid and alcohol, moisten the powder with the mixture, pack tightly, set aside for twelve hours, then percolate with chloroform. The percolate was collected in fractions as before.

(3) Take of—

Belladonna root in No. 60 powder..	4 oz.
Glacial acetic acid	1 fl. drachm.
Chloroform	15 fl. drachms.

Mix the liquids, moisten the powder, pack quickly and tightly, set aside for twelve hours, percolate with chloroform. Collect the percolate in fractions.

(4) Take of—

Belladonna root in No. 60 powder..	4 oz.
Absolute alcohol	2 fl. drachms.
Chloroform	14 fl. drachms.

Mix the liquids, moisten the powder, pack quickly and firmly, percolate with a mixture of seven volumes chloroform and one volume absolute alcohol. Collect as before.

The alkaloids in the different fractions were determined, with the results shown in Table II.

Table II.

Sample of Drug.	Process.	Amount of Alkaloid in Grammes from 100 C.c. (Calculated).	Approximate Proportion of Alkaloid Extracted From Drug.
	I.—Fraction (1)......	0·160	53 per cent.
	,, (2)......	0·048	9 per cent.
	,, (3)......	0·032	6 per cent.
	I.—Fraction (1)......	0·108	28 per cent.
	,, (2)......	0·040	6 per cent.
	,, (3)......	0·025	3·5 per cent.
A	II.—Fraction (1)......	0·100	33 per cent.
	,, (2)......	0·048	9 per cent.
	,, (3)......	0·020	4 per cent.
A	III.—Fraction (1)......	0·110	37 per cent.
	,, (2)......	0·032	6 per cent.
	,, (3)......	Not collected.	..
A	IV.—Fraction (1)......	0·162	54 per cent.
	,, (2)......	0·068	13 per cent.
	,, (3)......	0·048	9 per cent.
B	IV.—Fraction (1)......	0·112	30 per cent.
	,, (2)......	0·055	8 per cent.
	,, (3)......	0·200	3 per cent.

Judging from the figures given in the table, all of which show a vastly increased yield of alkaloid, the best results attend the use of a menstruum containing alcohol.

Squire has stated ('Companion,' edition xvi. p. 126) that the best alkaloidal solvent for belladonna is ammoniated alcohol, and it occurred to me that quite possibly a mixture of this with chloroform would give even better results than had been obtained with the chloroform-alcohol menstruum.

Experiment IV. was therefore repeated, substituting ammoniated alcohol for the absolute alcohol in the formula, and using drug sample A.

The percolate gave the following amount of alkaloid :—

Fraction (1). 25 C.c. = 0·049 = 0·196 per cent.
Fraction (2). 25 C.c. = 0·012 = 0·048 ,,
Fraction (3). Not collected.

It will be seen that 65 per cent. (about two-thirds) of the available alkaloids appear in the first fraction, showing the best results yet obtained.

It appeared to be worth while repeating this experiment alongside one or two others, on another sample of drug. Accordingly, a good specimen of English root in fine powder was obtained, yielding about 0·5 per cent. alkaloids, and from this samples of chloroform of belladonna were prepared by processes I. and IV., also by the latter with the substitution of ammoniated alcohol for absolute alcohol.

N.B.—The former is best prepared in small quantities by passing ammonia gas (obtained by slightly warming a flask containing strong liquid ammonia) into absolute alcohol until the latter is saturated.

The results of this series of experiments are shown in Table III.:—

Table III.

Process.	Alkaloid in Grammes from 100 C.c.	Approximate Proportion of Alkaloid Extracted from Drug.
I. Fraction (1)	0·292	58·5 per cent.
Fraction (2)	0·116	13 per cent.
Fraction (3)	0·072	8 per cent.
IV. Fraction (1)	0·280	56 per cent.
Fraction (2)	0·140	15·5 per cent.
Fraction (3)	0·120	13·5 per cent.
IV. Modified—Fraction (1) ..	0·344	69 per cent.
Fraction (2) ..	0·076	8·5 per cent.
Fraction (3) ..	0·032	3·5 per cent.

It will be seen that these results are more satisfactory than any previous ones, also that the ammoniated menstruum comes comes out best.

More complete exhaustion could doubtless be effected in the case of the alcohol-chloroform preparations by increasing the proportion of alcohol to 20 or 25 per cent., but there are obvious objections to carrying this too far.

The one objection to be urged against the employment of an ammoniated menstruum is that the natural combination of the alkaloid in the drug is disturbed, and that *pro tanto* the product ceases to be a true galenical.

Chloroformum Aconiti.

A similar series of experiments to those recorded in connection with chloroform of belladonna was carried out with this preparation.

Examination of Commercial Samples.

Six of these were obtained and submitted to examination with the following results :—

No.	Alkaloid in Gms. Per 100 C.c.
1..	0·020
2..	0·044
3..	0·032
4..	0·028
5..	0·016
6..	0·080
Average	0·037

Experiments on Alternative Processes.

The experimental samples were prepared from a specimen of English aconite root, yielding on assay 0·46 per cent. total alkaloid. The processes followed were the same as those outlined under belladonna. The results are given in the following table :—

Table IV.

No.	Process.	Total Alkaloids in Grammes from 100 C.c.	Approximate Degree of Exhaustion Effected.
1	Simple percolation	0·172	37 per cent.
2	B.P.C.	0·014	3 per cent.
3	Acid (1)	0·224	49 per cent.
4	Acid (2)	0·220	48 per cent.
5	Alkaline	0·180	40 per cent.
6	Ammoniated chloroform	0·196	43 per cent.

Further experiments were then carried out, using the same root and collecting the percolate in fractions, following the details of the second series of process experiments given under belladonna. The results are shown in Table V.

Table V.

Process.	Total Alkaloids in Grammes from 100 C.c.	Approximate Degree of Exhaustion Effected.
I. Fraction (1)	0·372	80 per cent.
Fraction (2)	0·032	4 per cent.
Fraction (3)	0·028	3·5 per cent.
II. Fraction (1)	0·365	79 per cent.
Fraction (2)	0·048	6 per cent.
Fraction (3)	0·040	5 per cent.
III. Fraction (1)	0·328	71 per cent.
Fraction (2)	0·024	3 per cent
Fraction (3)	0·004	0·5 per cent.
IV. Fraction (1)	0·404	88 per cent.
Fraction (2)	0·044	5 per cent.
Fraction (3)	0·040	5 per cent.

Practical Notes and Conclusions.

Chloroform alone is not a good solvent for the alkaloids of belladonna in their natural state of combination in the drug. It is better adapted for the extraction of the aconite alkaloids, probably because these exist largely in a free condition in the root. In order to facilitate extraction several expedients may be resorted to. The usual modification has consisted in the addition of an alkali to the crude drug in order to break up the alkaloidal combination, and leave the alkaloids in the free condition to be acted upon by the menstruum. The Formulary process is one of this character, but in my hands it has proved an almost total failure. The same object may be obtained by the addition of a small proportion of glacial acetic acid to the chloroform, and the resulting product is fairly satisfactory.

The modification of the menstruum by the addition of 10 per cent. absolute alcohol gives a greatly improved preparation.

The best result, taking the proportion of alkaloids present as the standard of strength, is obtained by the addition of a small proportion of ammoniated alcohol to the chloroform used for extraction, and although the resulting preparation can hardly be regarded as a true galenical, seeing that the natural combination in the drug is broken up, it is nevertheless so far in accord with the formulary preparation that I feel justified in proposing its adoption.

The form may be outlined as follows:—

Take of—

Belladonna (or aconite) root in fine powder..	20 oz.
A mixture of ammoniated alcohol, 1 volume, Chloroform, 7 volumes	A sufficient quantity.

Moisten the powder quickly and thoroughly with 10 fl. oz. of the menstruum. Pack firmly in a conical percolator provided with a closely fitting cover. Pour on successive quantities of the menstruum and allow percolation to proceed until one pint has been collected.

It is my pleasurable duty to acknowledge the kindness of Messrs. Wright, Layman, and Umney in providing me with the sample of finely powdered English belladonna root referred to in the paper.

CRYSTALS IN EXTRACTS.

BY F. H. ALCOCK, F.I.C.

In a paper read before the Midland Pharmaceutical Association, March 12, I called attention to some crystals which had been found by one of my friends in some extract of henbane. He thought they might be hyoscyamine, and sent them for inspection and examination. They were only shown at the meeting, and the weight of each crystal was recorded and subsequent examination was promised. At the meeting Mr. E. W. Mann suggested that they might be potassium nitrate, and a few days after the paper had appeared in the journals a communication was sent to me by the late Mr. John Barclay, which had been received by his firm from Mr. M. J. Ellwood, Leominster, who expressed great interest in the matter, and referred me to a paper in the *Pharmaceutical Journal*, November 19, 1870, in which he had recorded the presence of calcium oxalate in belladonna, and suggested that probably "History would repeat itself," and these crystals would prove to be a similar sort of thing. These suggestions seem to show that their examination would be of interest to the Conference, but I fear results do not show much that was not previously known, for they proved to be fine crystals of potassium chloride, coloured with a little of the extract; by analysis they gave 99·8 per cent. potassium chloride.

A second example of crystals from extracts was obtained from a liquid alcoholic extract of *Anacyclus pyrethrum* root, and these were found to be potassium dihydrogen phosphate.

Another specimen of crystals from extracts has also come under my notice many times in recent years. In extractum carnis in large bulk there often may be seen crystals which are colourless, long, prismatic and transparent, weighing 0·25 to 1·0 Gm., or even more. These I have examined and found to be calcium tetra hydrogen phosphate—the soluble acid phosphate of calcium.

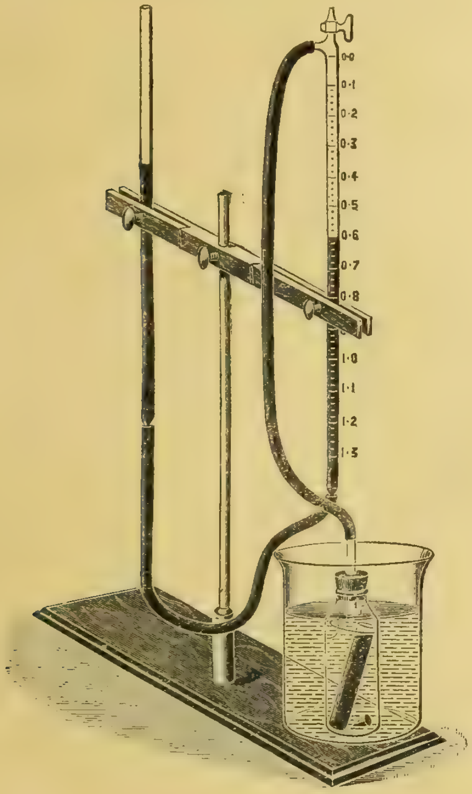
It would seem from the above examples that these crystals are not always of the same composition, and, as potassium nitrate, and also calcium oxalate, have been found, it is not safe to conclude that all extract crystals are one and the same substance.

A NEW METHOD FOR THE DETERMINATION OF URIC ACID IN URINE.

BY A. F. DIMMOCK, M.D., M.R.C.S., L.S.A.,
Medical Officer of the Harrogate Infirmary,
and
F. W. BRANSON, F.I.C., F.C.S.

The authors have devised the following method, which has been found to work easily:—100 C.c. of the urine are taken and warmed to about 40° C. and then saturated with 31 Gm. of ammonium chloride, the whole being well shaken in a stoppered measuring glass, graduated at 100 C.c., until complete solution of the ammonium chloride is effected. The contents will now be at a temperature of about 15° C., and should be left for at least two hours (preferably twelve) for the precipitate of urate of ammonium to subside. Should any of the precipitate have a tendency to remain near the surface a gentle rotation of the measuring glass will cause it to settle. The supernatant liquid is poured off and the portion left is carefully filtered through a small filter-paper (diameter about 5·5 Cm.), as by Hopkin's method. The precipitate is carefully washed with a very dilute solution of ammonia, consisting of one part liq. ammon. fort. in 1,000 of distilled water.

The precipitate is best washed in the following manner:—Allow the liquid to drain from the precipitate, then fill the filter-paper with the dilute ammonia solution contained in a wash bottle. Allow this to drain off and again fill the filter-paper with the ammonia solution. Repeat this operation a third time. Test some of the filtrate with a 5 per cent. solution of nitrate of silver, acidulated with nitric acid 5 per cent. Only a very slight precipitate should be given indicating the absence of any appreciable amount of ammonium chloride, but should the filtrate still contain this salt wash with a small additional amount of dilute ammonia. Place the precipitate with the filter-paper in the generating bottle, fill the tube up to the mark (25 C.c.) with the hypobromite solution, and lower it into the bottle (as shown in illustration) by means of a piece of string. Note temperature of hypobromite solution, which should approximate to that of the room in which the estimation is to be made. Now place cork in the generating bottle and plunge the bottle in a vessel of cold water of a similar temperature to that of the hypobromite solution. After two minutes adjust the water level in the measuring burette to zero, and then close the tap, and note that the water level remains constant. In order to test if leakage occurs in any part of the apparatus, alter the water level in the measuring burette, any defect is then easily seen. Finally tilt the generating bottle and allow the reagent to flow out of the tube, and shake so as to promote the reaction between the sodium hypobromite and the ammonium urate. After ten minutes, during which time the bottle should be shaken at intervals, the level in the two tubes is adjusted, and the percentage of uric acid read off, as indicated by the nitrogen evolved.



The process appears to be quite suitable for proportions of uric acid ranging from 1 in 1,000 to 1 in 10,000. The factors for the graduation of the burette (parts per 1,000) have been obtained by means of numerous determinations of solutions prepared from pure uric acid, urea (2 per cent.), and normal phosphates, chlorides, and inorganic constituents. Six determinations of 100 C.c. of a solution containing 0·6 part of uric acid per 1,000 gave a mean of 8·5 C.c. of nitrogen.

By the addition of a second scale (graduated in parts per 100) to the burette, the instrument may be used as a ureameter, 2 C.c. of urine being taken for each estimation. This quantity is transferred by means of a pipette to the generating bottle, in which is placed a tube containing 25 C.c. sodium hypobromite solution. The subsequent procedure is the same as for the estimation of uric acid. The solution of hypobromite of soda is made by dissolving 100 Gm. of caustic soda in 250 C.c. of water, then adding 22 C.c. of bromine.

A FALSE CUSPARIA BARK.

BY EVELYN WM. POLLARD, B.SC. (LOND.),
Pharmaceutical Chemist.

During last year (1902) a quantity of bark, supposed to be cusparia, found its way into London commerce. Samples of this bark were sent for identification to the Curator of our Museum by two of the largest wholesale houses. Mr. Holmes was unable to identify it, and kindly gave me a sample for inspection, subsequently putting me into communication with one of the firms, who generously forwarded me several pounds to operate on. The only information this firm could give was that it was probably *Angostura braziliensis* or *Cusparia trifoliata* from Columbia. I had not proceeded far in the histological examination when it struck me that a bark described by Barclay in his 'Manual of Materia Medica' as a false cusparia corresponded with the bark I had in hand. Mr. Barclay forwarded me a sample of his bark, and the two proved to be identical. This, therefore, is not the first time the bark has occurred in commerce. I cannot do better than quote Barclay's description:—

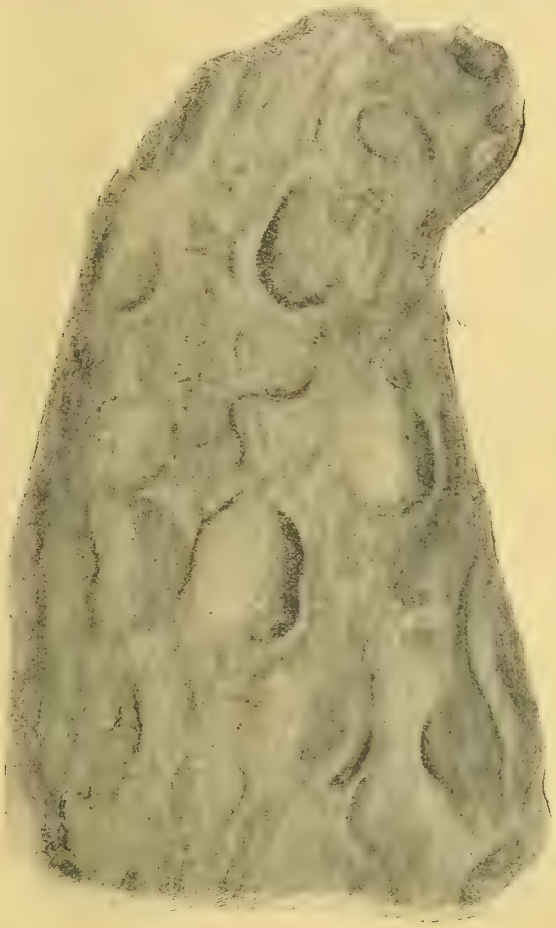


Fig. 1.—Exterior View of Bark.

> Recently (1894-5) a bark (origin untraced) has been met with as a substitution of angostura bark, which has the following characters:—In flat or slightly incurved pieces of varying length and width, and from one-sixteenth to one-eighth or rarely as much as three-eighths of an inch in thickness. The outer surface of a grey-brown colour, rough from the presence of many wart-like excrescences of the periderm, and frequently bearing closely adherent lichens of a

> yellow or yellowish red colour, marked with numerous black spots; beneath the corky layer the colour is dark greenish-grey. The inner surface is coarsely striated longitudinally, and in colour yellow, yellowish-brown, and brown. Fracture hard, brittle, showing numerous closely-adherent concentric laminæ. A transverse section under the microscope shows numerous concentrically arranged large groups of sclerenchymatous cells.

I would lay stress on this last character, which is represented in Fig. 2, and also add that the taste is intensely bitter and slightly aromatic.

Histological Examination.

A thin transverse section (Fig. 3), when examined with ¼ in. objective, shows the following characters:—

(*c.*) Cork Cells.—Tabular cells about five deep, the outer ones much disorganised.

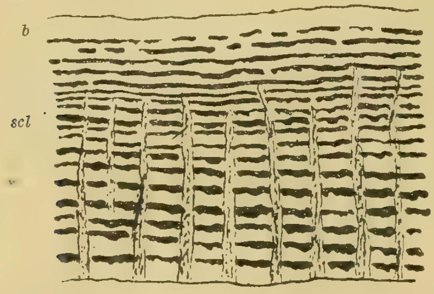


Fig. 2.—Layer of bark, *b*, with concentric layers of sclerenchyma, *scl*.

(*p.*) Phellogen.—A layer closely abutting on the cork cells, loaded with protoplasmic contents and giving rise internally to

(*ph.*) Phelloderm.—A conspicuous layer of regular tabular cells ten to twenty deep and filled with chlorophyllous contents.

(*bast*) Bast Tissue occupying almost the entire section, and composed of alternating layers of hard and soft bast.

(*h.b.*) Hard Bast consists of ten to twenty layers of thickened cells. The layers near the phellogen are not continuous, but the inner ones are remarkably uniform, giving the laminated appearance to the bark. Each layer is two to four cells deep and is translucent in thin sections. In these cells (Fig. 4) the lumen is almost obliterated; striations are very distinct and slit-like pits (Fig. 5) are numerous. When isolated by maceration the cells are roughly isodiametric; they are "stone cells," and not of the nature of "bast fibres." Crystals occur in this region.

(*s.b.*) Soft Bast.—This consists of layers of parenchymatous tissue. In thin pieces of the bark these layers are wider than the sclerenchyma layers, the cells being twenty deep, but in thick pieces the layers approximate in thickness. The cells are for the most part thin-walled, oval in tranverse section, with the long axis tangential; while in longitudinal section they are seen to be distinctly elongated. Some of the cells have undergone some thickening (Fig. 6). Most are packed with small starch grains and many contain albuminous matter and oil.

(*med.*) Medullary Rays.—These are inconspicuous, except in a thick transverse section (Fig. 2), where they appear as dark, radiating lines. In a thin transverse section (Fig. 3) they can be most readily seen when crossing a sclerenchyma layer. They are two cells wide, the cells greatly elongated in the radial direction, having dark contents.

Cell Contents.

(1) Crystals.—Prismatic crystals of calcium oxalate occur in abundance; they are large and confined to the region of the sclerenchyma. Sandy or cluster crystals and raphides are entirely absent.

(2) Starch.—The cells of the soft bast are loaded with small oval or rounded starch grains.

(3) Proteids in cells of the phelloderm, soft bast, and medullary rays.

(4) Oil is scattered in minute droplets throughout the bast parenchyma; there are no special oil cells.

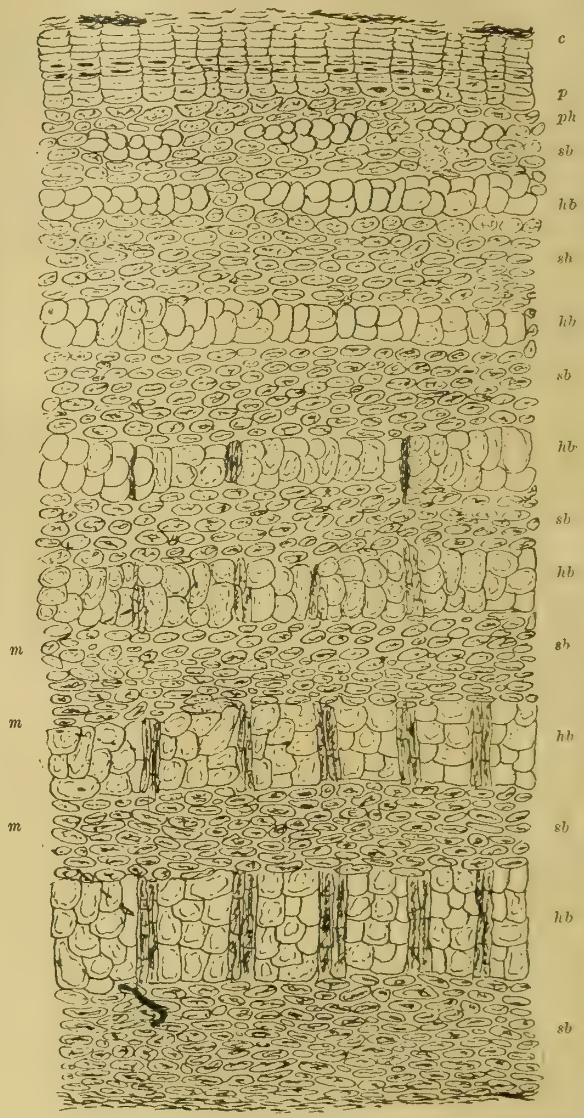


Fig. 3.—Transverse section, showing cork, *c*, phellogen, *p*, phelloderm, *ph*, soft bast, *sb*, hard bast, *hb*, medullary rays, *m*.

It will thus be seen that the histology of the bark under consideration differs markedly from that of true cusparia in having (1) well-developed sclerenchyma; (2) absence of raphides; (3) no special oil cells.

A chemical examination was undertaken to ascertain whether the bark contained any of the active consituents of true cusparia. It is scarcely necessary to say that cusparia contains several alkaloids, but the most easily extracted is cusparin, which gives a beautiful crystalline yellow sulphate.

Chemical Examination of the Bark.

The bark gave evidence of containing an alkaloid. An attempt was, therefore, made to isolate this alkaloid in the following manner.

A kilo of the bark in No. 20 powder was moistened with 1 per cent. hydrochloric acid; this moistened bark gave out an aromatic "peppery" odour. The mass was tightly packed in a percolator, and distilled water passed through till extraction was complete. An extract of 1 in 5 was of a dark sherry colour. An attempt to shake out the alkaloid with ether-chloroform and ammonia resulted in an emulsion which refused to separate. Basic lead acetate was, therefore, added, whereby an abundant light-coloured precipitate was obtained.

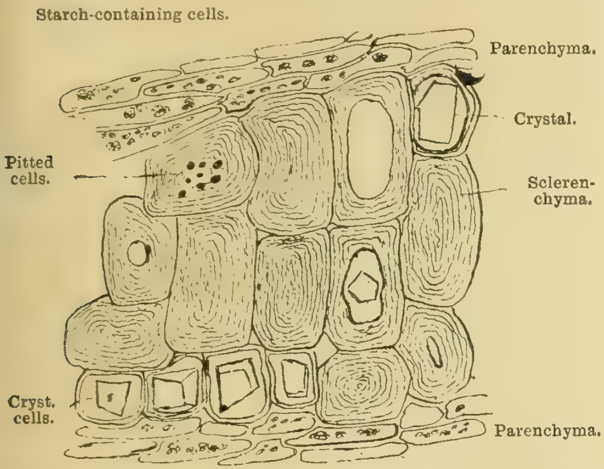


Fig. 4.—Sclerenchyma Cells and Crystals (⅛ in. Objective).

The excess of lead in the filtrate was removed by dilute H_2SO_4; the solution was now of a pale lemon colour. This was slowly evaporated over a water bath; during this process a quantity of perfectly colourless crystals separated, which, on analysis, proved to be calcium sulphate, evidently derived from the calcium oxalate which is largely present in the bark. When the solution was reduced to about 500 C.c. ammonia was added, which produced a copious pinkish precipitate. This precipitated alkaloid was filtered off, washed, and dissolved in just sufficient dilute H_2SO_4. Then filtered through animal charcoal, again thrown out by ammonia, washed and dried. The result was a small quantity of amorphous powder, which gave alkaloidal reactions, but which was by no means pure alkaloid. I was unable to obtain it in a crystalline condition.

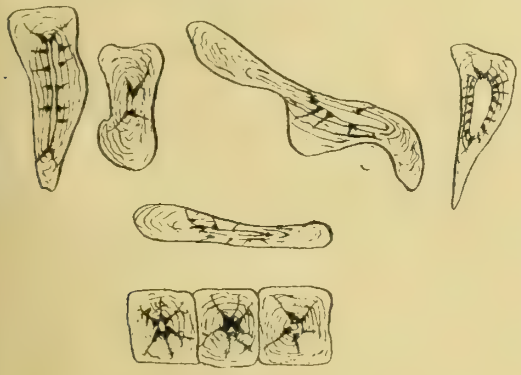


Fig. 5.—Isolated stone cells.

A second process of extraction was now tried: Experiment proved that the alkaloid could not be extracted direct by ether, thus differing markedly from cusparia. The bark mixed with lime yielded no alkaloid to ether or to petroleum spirit. A quantity was, therefore, moistened with 10 per cent. ammonia and extracted with warm petroleum spirit. A greenish solution resulted, which yielded all the alkaloid to dilute H_2SO_4, and separated well. The solution of the sulphate was practically colourless (*cp.* cusparia). This was evaporated, and again inorganic crystals separated. When the solution became very concentrated, a viscous liquid separated, having the appearance and consistency of treacle. This was separated, washed with a little water, and when dried in a desiccator formed a clear varnish. It was dissolved in hot absolute alcohol, which solution, on cooling, deposited a non-crystalline precipitate, which again dried to a clear varnish. This was undoubtedly a somewhat coloured, but nearly pure sulphate of the alkaloid. After repeated transference from acid to ether, it still retained this slight coloration. A solution of this sulphate was used with the following results:—

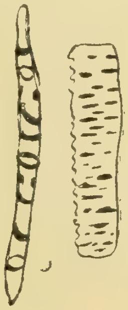


Fig. 6.—Parenchyma elements, showing thickening

Sodium carbonate caused a precipitate in such a fine state of division that filtration through a treble filter was of little avail. Nitric acid, oxalic acid, and potassium iodide all caused curdy precipitates readily soluble in hot water. The tartrate and hydrochloride, like the sulphate, were very soluble salts. I was unable to obtain any of them in a crystalline condition, either from water or alcohol. The alkaloid gave no coloration with strong H_2SO_4, but assumed a blue-black colour when chromic acid was introduced. Gold chloride formed with it a chocolate-coloured precipitate, the melting point of which was 105° C. (uncorr.). Assayed by Keller's process, the bark yielded 1·3 per cent. of alkaloid. Petroleum spirit, ether, chloroform, all extracted a quantity of oily matter, which was aromatic, having an odour of gorse flowers. This oily matter heated left a non-aromatic fixed oil.

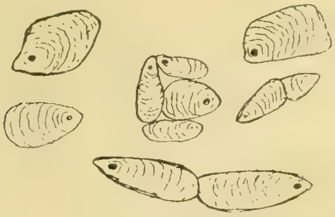


Fig. 7.—Starch grains.

The chemistry may thus be summarised:—(1) A bitter amorphous alkaloid; (2) Fixed and volatile oil; (3) Abundant starch; (4) Calcium oxalate.

The chemistry of the bark, therefore, like the histology, is entirely different from true angostura bark. I have no information concerning the physiological action of the alkaloid extracted.

In conclusion, I am indebted to Messrs. Potter and Clarke for a liberal supply of the bark, to the B.P.C. Committee for a grant to carry on the work, and to Mr. Holmes for his kindly help throughout the investigation.

COMPRESSED TABLETS:

A Contribution from St. Thomas's Hospital Laboratory.

BY EDMUND WHITE, B.SC. (LOND.), F.I.C.,
AND
HENRY RODWELL, PH.C.

In a paper read by one of us in conjunction with R. A. Robinson before the Conference at Dundee last year (*Pharmaceutical Journal* [4], **15**, 140), a method for preparing compressed tablets for dispensing purposes was discussed. We found that by the use of an excipient composed of a mixture of starch and oil of theobroma it was possible to produce for dispensing purposes, from almost any prescription, tablets which were presentable and disintegrated with extreme ease when placed in contact with water. This process involved simply a combination of the medicinal substance or substances in powder with the excipient mentioned above in the proportion of about 4 to 1. It will be observed that no attempt at granulation was made, since the method was only intended to meet the requirements of the dispensing counter. In such cases, one of the many numerous forms of hand-machines would be employed, and the filling of the die would have to be controlled by the operator for each individual tablet. Further experience of this method showed that it was inapplicable for the preparation of tablets on a larger scale, by means of machines with an automatic feed arrangement, except in certain cases where the mixture of substance and excipient happened to form a fairly granular mixture, capable of flowing evenly and uniformly from the hopper to the die.

We have, therefore, turned our attention to the possible modifications of the method which would enable it to be used for manufacturing purposes. The main points which we have kept in view have been (1) the production of an excipient as widely applicable as possible, (2) facilitating granulation, (3) avoiding the use of so-called lubricants. Our object has been, therefore, to find a method which would simplify the published methods by eliminating a great variety of substances of no special utility, which would yield, by simple combination, a granulated powder ready for compression without further treatment. Another important point is to produce a granulated product containing no fine powder, since this must either be sifted out or leads to trouble in manipulation, by getting between the die and the punch, thus causing the machine to stick and work with difficulty. Even if the fine powder be sifted out, two objections to this procedure immediately arise; (1) it involves another operation, (2) the fine siftings are, in most cases, not homogeneous with the bulk of the product.

Most granular products produced by the use of mucilage, syrup, etc., give tablets which, when crushed, yield a gritty powder. Many substances dispensed in tablet form are advantageously administered, particularly in the case of children, in the form of powder, produced by crushing the tablet immediately before administration. It appeared desirable, therefore, to devise a method by which when the tablets were crushed between the fingers or between paper, a soft and smooth powder could be produced.

A further requirement was that the granulated material should be capable of being compressed into a smooth polished tablet, with the minimum of compression. This point is not only of importance in relation to tablets which are intended to be crushed to powder—it has also an important bearing upon the disintegration of the tablets, apart from the necessity of adding any substance with a view to aiding disintegration By the method which we shall presently describe, we find that the use of any such material is unnecessary.

Reviewing the previous paper referred to above, it seemed to us that oil of theobroma, in tablet manufacture, possessed certain advantages which rendered it desirable to make use of the substance on a larger scale. Thus (1) it melts below body temperature, and any coherent mass produced by its agency must necessarily soften when raised to that temperature; (2) it is harmless, digestible, pleasant, and practically tasteless; (3) it acts as a lubricant during compression; (4) it imparts a good surface to the tablet, with the minimum of compression. The problem, therefore, resolved itself into the possibility of devising methods by which the oil of theobroma could be distributed uniformly throughout the material to be compressed, forming at the same time a granulated product capable of automatic feeding, and compression into a coherent polished tablet with the minimum of force.

The solution of this problem has been effected by two methods which we have devised. The first involves the use of the oil of theobroma in the form of an aqueous emulsion, and is applicable to such substances as do not form tough or doughy masses when moistened with water, including the greater number of substances required in tablet form. The second method is to apply the oil of theobroma in ether or ether-alcohol solution, and is applicable to vegetable drugs, such as aloes and other substances which form masses of a pill-like nature when moistened with water.

Theobroma Emulsion.

The emulsion of oil of theobroma which we have found most useful has the following formula:—

Oil of theobroma	25 parts
Hard soap	5 parts
Tragacanth	0·5 part
Benzoic acid	0·25 part
Water to	100 parts

Dissolve the soap in 25 parts of water by heat, add the hot solution to the melted theobroma, and mix by whisking or agitation; shake in the tragacanth, add the benzoic acid, then the remainder of the water. Gum acacia may be used in place of soap without making any appreciable difference in the general utility of the product. The product in either case should be a thick, smooth, white cream, free from lumps. The addition of benzoic acid is only necessary as an antiseptic precaution if the product be kept in stock.

The method of application is as follows:—The substance to be compressed, in the finest possible powder, should be triturated with sufficient of the emulsion to form a damp coherent powder—so damp that it can be shaken through a No. 20 or 30 sieve without pressure, and without adhering to the meshes; the sifted product, after exposure to the air for a few hours, or during the night, is ready for compression. If the drying process be accelerated by the application of heat, the dried product must be allowed to cool for an hour or two at least for the theobroma to solidify, before compression is attempted, but in the majority of cases it is better to avoid the use of artificial heat. If the bulk of substance to be compressed in each tablet either demands or allows the addition of any diluting material, we have found cane sugar to be the best; in no case does it interfere with the production of a good tablet, and in some cases the addition appears to be quite necessary. When the substance to be compressed is of a dusty nature, and has little inherent tendency to cohere on compression, the addition of a little glucose as shown in some of the formulæ given below is advantageous, giving a tablet with better finish, and less liability to crack after compression.

Ether-Alcohol Solution of Theobroma.

The formula for the ether-alcohol solution is as follows:—

Oil of theobroma	1 fl. oz.
Ether	to 6 fl. oz.

Dissolve and add an equal volume of rectified spirit, as required for use.

The manner of granulating with the above is to add it to the substance or mixture contained in a mortar, trituration being accomplished as quickly as possible, and the whole of the solution required being added at once. The mass is then passed through a No. 20 or 30 sieve, and allowed to dry by exposure. Compression can, in some cases, be proceeded with almost immediately, but it will be found more satisfactory generally to allow the mixture to stand for an hour or two. Sugar granulates remarkably well with the above excipient, and the previous remarks on its addition apply here as well.

Special Formulæ.

In addition to experimenting with the substances commonly employed in tablet form, we have tried a number of formulæ for official and unofficial pills. With the exception of certain very expensive forms of pill machinery, it appeared to us that the machinery such as is available for pill making involves a large number of operations, and that the results are usually more or less unsatisfactory. The most objectionable features in the results obtained by massing, piping, and cutting the pill-mass we consider to be (1) the use of heat, particularly in drying the pills, and (2) the large proportion of cut pills which have to be rejected on account of imperfections either in weight or form. This necessitates the return of the rejected material to be subjected afresh to manipulation, thus involving a waste of time and labour, and exposing the material once more to the risk of damage. If the same materials could be produced in tablet form they would be subjected to no risk of damaging their medicinal properties, the whole quantity could be worked off to the last few grains, and no residue would remain for re-manipulation. Among the formulæ now given will be found several typical of the pills in common use, and the results have been so satisfactory that we are extending our experiments, as opportunities allow, to all the pills required for hospital use. Doubtless a few formulæ will prove intractable, owing to the fluid nature of certain ingredients, but for the majority of cases we have little doubt that the change from pill to compressed tablet can be made with advantage. Any argument as to the relative advantage offered by the spherical or flattened shape respectively of the two forms can be dismissed as trivial, the main point to be kept in view being the selection of the method which most simplifies the manipulative operations, and allows of accurate dosage with the least possible damage to the medicinal properties of the constituent materials. The following formulæ have been selected to illustrate the application of the excipients whose formulæ are given above :—

Tablets made with Theobroma Emulsion.

(1) Soda-Mint.

Sodium bicarbonate	40 parts
Oil of peppermint........................	1 part
Theobroma emulsion......................	8 parts

(2) Grey Powder.

Mercury with chalk	3 parts
Sugar, in powder.........................	2⅞ parts
Theobroma emulsion.....................	⅜ part

The dried product weighs 6 parts. It is used chiefly for producing 1 and 2 grain tablets with very light compression, so that they may easily be crushed to powder for administration to children. With light compression it is difficult to ensure a polished surface, and we are still experimenting with a view to the improvement of this formula.

(3) Hutchinson's Pills.

Mercury with chalk	3 parts
Compound powder of ipecacuanha	3 parts
Theobroma emulsion	1 part

When dried, tablets weighing 2·1 grains will contain 1 grain each of the two chief constituents. If granulated with mucilage or syrup a very considerable proportion of fine powder is produced during the sifting.

(4) Bismuth and Soda.

Bismuth carbonate	3 parts
Sodium bicarbonate	2 parts
Theobroma emulsion.....................	1 part

When dried, tablets weighing 5⅓ grains will contain 3 grains of bismuth carbonate.

(5) Thyroid Powder.

Dried thyroid gland........................	11 parts
Sugar, in powder	10 parts
Theobroma emulsion	3 parts.

When dried, tablets will contain half their weight of dried thyroid. They should not be compressed too firmly, or the tablets have a tendency to crack.

(6) Saccharin.

Saccharin	9 parts
Sodium bicarbonate	8 parts
Theobroma emulsion.....................	3 parts

The dried granules contain half their weight of saccharin, and disintegrate readily, particularly in warm fluids. The addition of a trace of starch might be considered advantageous by some, but it does not appear to be necessary.

(7) Santonin and Calomel.

Santonin
Calomel
Cocoa
Sugar, of each, equal parts
Theobroma emulsion, *q.s.*

This is made into 4-grain tablets, lightly compressed, so as to be easily crushed, for administration in powder-form for children.

(8) Compound Calomel Pill.

Calomel	1 part
Sulphurated antimony	1 part
Guaiacum resin	2 parts
Sugar...	1 part
Theobroma emulsion	0·5 part

This is practically the compound pill of calomel of the British Pharmacopœia. Since it contains a large proportion of resin, and forms a pill mass with ether-alcohol, the aqueous emulsion forms the most useful excipient.

(9) Phenacetin.

Phenacetin	17·5 parts
Sugar	7·0 parts
Glucose......................................	0·5 part
Theobroma emulsion	2·0 parts

The glucose should be first added to the emulsion. This formula yields a coherent tablet with light pressure. Without glucose more pressure is necessary to avoiding adhesion to the die. Possibly the proportion of cane sugar might be reduced.

(10) Phenazone.

Phenazone	5 parts
Sugar	1 part
Glucose.....................................	0·075 part
Theobroma emulsion	*q.s.*

(11) Quinine Sulphate.

Quinine sulphate.........................	5 parts
Sugar..	2·5 parts
Glucose.....................................	0·25 part
Theobroma emulsion....................	1 part

(12) Acetanilide Compound.

Acetanilide	2 parts
Caffeine citrate...........................	1 part
Sodium bicarbonate	1 part
Glucose.	0·125 part
Theobroma emulsion....................	0·75 part

This formula represents the tabellæ acetanilidi comp. of the 'St. Thomas's Hospital Pharmacopœia.'

(13) Iron Tablets.

We have experimented with various formulæ to replace the official Pilula Ferri, but have not yet succeeded in obtaining a good tablet *containing* ferrous carbonate, owing to the oxidation which this substance suffers during the preparation of the materials for compression. If, however, crystallised ferrous sulphate and sodium bicarbonate be separately granulated with theobroma emulsion and the dried granules be mixed in the required proportions, the mixture may be compressed to a satisfactory tablet which disintegrates and forms ferrous carbonate very readily when moistened. As the formula is still under trial we refrain here from giving details, since these are not yet settled entirely to our satisfaction.

Tablets made with Ether-Alcohol Theobroma.

(14) Opium.

Opium in fine powder	2 parts
Sugar	1 part
Ether-alcohol theobroma	0·75

(15) Pepsin.

Pepsin	2 parts
Sugar	2 parts
Ether-alcohol theobroma	1 part

(16) Cascara Extract.

Cascara extract in powder	2 parts
Sugar	1 part
Ether-alcohol theobroma	*q.s.*

(17) Compound Rhubarb.

Rhubarb	3 parts
Socotrine aloes	2·25 parts
Myrrh	1·5 part
Oil of peppermint	0·175 part
Sugar	4 parts
Ether-alcohol theobroma	1·5 part

The above is practically the official formula, in which the syrup and soap are replaced by sugar and theobroma.

(18) Podophyllin Compound.

Podophyllum resin	1 part
Calomel	4 parts
Alcoholic extract of belladonna	0·66 part
Sugar	4 parts
Ether-alcohol theobroma	1·5 part

Made into 2½-grain tablets, each containing 1 grain of calomel.

(19) Aloin Compound.

Aloin	8 parts
Ipecacuanha	2 parts
Extract of nux vomica	1 part
Sugar	4 parts
Ether-alcohol theobroma	6 parts

(20) Aloes and Iron.

Barbados aloes	2 parts
Exsicc. ferrous sulphate	1 part
Comp. cinnamon powder	3 parts
Sugar	3 parts
Ether-alcohol theobroma	1·25 part

The above represents the official pill of aloes of iron.

Compressed Lozenges.

We have also tried the preparation of various lozenges by compression instead of the usual method of manufacture, and have obtained results which appear very satisfactory. The advantage of avoiding the application of heat is obvious in the case of volatile substances, such as phenol and essential oils. The general method followed was to granulate the mixture of medicament, sugar, and gum, by means of the theobroma emulsion, and highly compress the dried granules. So far as the Pharmacopœia lozenges are concerned we have succeeded with each of the official bases, and submit samples made with simple, rose, tolu, and fruit basis respectively.

General Remarks and Summary.

It will be seen that, excluding the cases of substances like potassium chlorate, which may be compressed without any addition of excipient, the results of our work may be thus summarised:—Oil of theobroma, applied as directed, may be used as a granulating and lubricating agent in two ways; (1) as an aqueous emulsion, and (2) as an ether-alcohol solution. With regard to the proportions given in the formulæ above, some variation may be found according to the details adopted in mixing. The addition of small quantities of glucose was found to exert a beneficial influence in certain cases where the material had a tendency to stick to the dies or crack after compression, and appeared to indicate that the granules in such cases possessed insufficient cohesive power. As a rule, formulæ containing much sugar require relatively little emulsion as excipient. With crystalline salts addition of sugar is usually unnecessary. The selection of one or other of the two forms of excipient is controlled by the nature of the substance to be granulated, that one being avoided which forms a lumpy or tough mixture of a pill-mass nature. Ethereal solution, without alcohol, was found to be of limited use owing to its inabilty to give satisfactory granules. Further experience will probably show that the relative proportions of ether and alcohol may be varied with advantage in certain cases.

THE REFRACTIVE INDEX OF ESSENTIAL OILS.

BY ERNEST J. PARRY.

The refractive index of essential oils has long been put on one side as not affording information commensurate with the trouble involved in its determination.

In many cases there can be no doubt that this is the only conclusion one could arrive at, as, for example, the oils of the Citrus family. The following are figures obtained for normal samples of lemon and orange oil, together with those of turpentine and lemon terpenes. (All determinations are for the D. line at 20° C.)

Oil of Lemon.	Oil of Orange.	Turpentine.	Lemon Terpenes.
1·47575 1·47485 1·47448 1·47385	1·47350 1·47460	1·47059 1·47208 1·47200	1·47458 1·47521

It is clear that nothing more than a vague indication can be obtained in cases of admixture with large quantities of either lemon-terpenes or turpentine, of either lemon or orange oil.

A direct determination of the refractive index on many essential oils will lead to identical results, although there are cases where very clear indications, not only of adulteration, but also of the adulterant, may be obtained.

It is, however, not until the oil is fractionated and the fractions of fairly constant properties are thus examined, that the full value of the refractive index is rendered apparent.

This is easy to understand, as the oils themselves are not constant mixtures, and may have practically identical refractive indices whilst being of very different compositions. But fractions obtained at definite temperatures are to be expected to have fairly constant characters, and an examination of a fractionated oil will often lead to very useful results.

The great value of the refractive index of essential oils when appreciated in this way has been emphasised by Burgess and Child on several occasions, and quite recently Umney, Bennett, and myself have used it to very great advantage. The recent papers on citronella oil and peppermint oil, published by Bennett and myself in the *Chemist and Druggist*, have demonstrated the valuable information which has thus been obtained.

In the latter case a body, which, I think I may say, we could not identify for some time, was found in the later fractions of the oil. We found, however, that it had a refractive index of over 1·5000, and were by this means able to place it in a very limited group of bodies, and finally to decide by further examination that it was African copaiba oil.

The object of the present note is merely to draw attention to the value of the refractive index when used with discretion, and not to publish a set of constants. Later I hope to publish a series of figures which will assist in demonstrating where this figure is, and where it is not of value, and figures from other observers will be welcomed.

In several other cases I have already found it of much value, amongst which is otto of rose. Here the fact that geraniol and so-called Indian or Turkish geranium oil have much higher refractive indices than otto of rose (or citronellol) enables one to use the determination to advantage. The following figures represent (1) Five samples of pure otto of rose of this season's crop; (2) two samples of commercial geraniol; (3) four samples of "Turkish" geranium oil; (4) two samples of citronellol:—

Otto of Rose, pure......	1·46190, 1·46095, 1·46148, 1·46145, 1·46208
Geraniol	1·47923, 1·47995
Turkish geranium oil ..	1·47602, 1·48055, 1·47958, 1·47850
Citronellol	1·45718

Several commercial samples had refractive indices of 1·46700 to 1·47100, and are at least open to very grave suspicion. I propose to return to this subject very fully in the course of a few months.

NOTE ON HYOSCYAMUS MUTICUS.

BY F. RANSOM, F.C.S., AND H. J. HENDERSON, PH.C.

Hyoscyamus muticus, grown in India, was first examined by Dunstan and Brown, and the results are given in a paper read before the Chemical Society, and published in the society's journal in 1899 (*Trans.*, 1899, **75**, 72). The authors therein showed that the sample examined contained 0·1 per cent. alkaloid, consisting of practically pure hyoscyamine. In a subsequent paper the same authors reported on a sample of the plant grown in Egypt, which they also found to contain the same alkaloid in a pure state, and which existed to the extent of 0·87 per cent. in the seeds, and 0·59 per cent. in a mixture of the stems and leaves. Dr. Gadamer had previously examined the Egyptian plant, and found 1·34 per cent. of hyoscyamine in the seed capsules and seeds, 1·393 per cent. in the leaves, and 0·569 per cent. in the stems (*Arch. Pharm.*, 1898, **236**, 704).

Under the impression that a drug with powerful mydriatic properties, due exclusively to the presence of the alkaloid hyoscyamine, might present certain therapeutic advantages for galenical preparations over the official henbane, we were induced to make a further examination from a pharmaceutical standpoint. The material employed was supplied by Mr. Ernest A. Floyer, member of the Egyptian Institute. Three varieties of the drug were examined:—(1) The light brown stalk, from which most of the leaf had been removed; (2) a compressed brick, consisting mostly of leaf with small proportions of leaf-stalk and seed-capsules; (3) the unripe seed-capsules containing some seed.

We understand that the drug could be procured in any of these three forms, but the first is that which has hitherto been usually seen on the London market. In each case the material was carefully dried in a current of warm air at a temperature between 70° and 80° C., and the loss of moisture determined. 2 oz. of the dried material in No. 20 powder were packed tightly in a percolator and percolated slowly with 45 per cent. alcohol until exhausted. The tincture was assayed by the following general method:—50 C.c. of the tincture were evaporated to about 20 C.c. over a water-bath, and transferred to a small bottle. 1 C.c. of HCl dil. was then added, and the tincture agitated with three successive portions of ether, which were collected and agitated with 5 C.c. of slightly acidulated water, the ether rejected, and the washings added to the bulk. The whole was now transferred to a separator, ammonia added in excess, and the alkaloid extracted with three successive portions of $CHCl_3$; the chloroformic solutions of the alkaloids were bulked, and the alkaloids again washed out with acid and extracted with $CHCl_3$. The chloroformic solution was drawn off into a tared dish, and allowed to evaporate spontaneously, and weighed after drying in the air oven at a temperature not exceeding 93° C. The residues before drying were beautifully white and crystalline, but on heating the crystals were fused into a yellowish mass. This method is practically the same as that employed by Dunstan and Brown in their researches. The results obtained by us were as follows:—

	Percentage Moisture.	Percentage Alkaloid in the Dried Drug.
(1) Stalk, etc...........	10	0·498
(2) Leaf, etc.	18	0·900
(3) Seed capsule	10	0·585

For the purpose of therapeutic examination, a tincture was prepared with 45 per cent. alcohol, and standardised to contain 0·01 per cent. alkaloid, by the method described above for the assay of the drug, this being about the strength which might be expected of the official tincture, prepared with best English biennial henbane. Specimens of this tincture were supplied to various hospitals and medical men, but hitherto we have not been able to obtain so many definite reports as we could have desired. The following remarks by Mr. W. A. Shann, M.B. (Cantab), of Lowestoft, are, however, of much interest, and we are indebted to this gentleman for his kindness in examining the nature of the tincture, and his courtesy in allowing us to publish his report. He states that he has a very strong impression "that the tincture of *Hyoscyamus muticus* is markedly superior to the ordinary tincture. In the first case in which I tried it—a case of inflammation of the bladder—the relief was immediate, and my subsequent experience has confirmed me in the opinion that it is a reliable preparation, of considerable therapeutic value. I have found, too, that smaller doses were required than of the ordinary officinal tincture, and I now always prescribe it in preference to the ordinary tincture."

From the above information it would appear that a recognised galenical preparation of *Hyoscyamus muticus* is likely to prove of much value, and, although we do not anticipate that it is likely to supersede the official preparations of *Hyoscyamus niger*, we would suggest that a standardised tincture prepared by the method described above might with advantage be introduced into the next edition of the British Pharmacopœia, subject to the confirmation of its therapeutic value. The value of the drug as a source for the extraction of hyoscyamine is already recognised by some manufacturers, and a constant demand would doubtless promote a regular supply.

The following interesting remarks with regard to the growth of the plant in Egypt have been kindly supplied by Mr. Floyer, and we take this opportunity of thanking him for his kindness in supplying both material and information for this note:—

Hyoscyamus Muticus.

"This plant grows wild all over Egypt, where it is known by the name of 'Sakran,' 'the drunken.' In the rich soil of the Valley of the Nile the plant luxuriates, and one shrub weighs when fresh as much as 60 lb. Here it makes large succulent leaves, but does not give a very large amount of seeds. In light sandy soil the plant has less leaf and more flowers, and in coarse sand the root is very largely developed, the leaves become less and less, and the seed vessels more and more numerous. A plant growing in coarse sand will sometimes ripen 5,000 seed pods. Though each pod may well contain 100 seed grains, the plant does not, in coarse sandy situations, cover any large area of ground. Under similar circumstances, any kind of erodium will fill whole valleys. But *H. muticus* always remains sporadic. It will, therefore, not be surprising to find that plant is difficult to grow. The seeds germinate, but an enormous percentage do not reach a height of three inches. The word 'hardy' is often applied to plants which can thrive under hard conditions. But the word is completely misleading. Such desert plants, as mimosa, hyoscyamus, and many grasses, owe their power of resisting drought and of feeding themselves in poor soil to an extraordinary delicate and complex organisation for supplying themselves with nourishment. And any attempt to plant them as a crop must take account of this. The plant does not bear submersion, and such as spring up in ground flooded by the High Nile are strictly annual. But those above reach of water attain an age of from three to five, or perhaps six, years, giving each year more seeds and fewer leaves. It has yet to be ascertained whether a five years' plant contains more alkaloid than a first year's plant. The Egyptians employ the plant as plasters for the chest."

THE THERMAL WATERS OF BATH.

BY W. J. HALLETT.

It will, no doubt, be felt that the thermal waters of Bath and their association with the Roman remains are the charm and attraction that induced the Conference Committee to arrange a visit to the "Queen City of the West." Delightfully situated in the valley of the Avon, and covering the graceful slopes of the picturesque hills, the city of Bath holds one of the wonders and sights of the world—the hot mineral springs. Prince and peasant flock to these healing waters in search of health, and as far back as the first century their properties were so highly prized and valued that they were sufficient to induce the valiant Romans to forsake their natural fortresses on the surrounding hills and pitch their camp in the low-lying valley, all contrary to their established strategy, and build around the hot springs a huge military sanatorium.

The mural tablets on the southern side of the bathing establishment give the following information: "These hot springs were used by the Romans as early as the first century. In area, in grandeur, in completeness, the baths of Aquæ Sulis were unequalled"; and a second one reads: "These healing waters have flowed on from time undated to this day, their virtue unimpaired, their volume unabated, their heat undiminished. They explain the origin, account for the progress, and demand the gratitude of the City of Bath."

This meagre information is probably sufficient for the lay mind, but not so to the scientific; and to the chemist, to whom the water—being a medicine—appeals, some knowledge of its composition is desirable. Such information is not readily discoverable in the guide-books, and lack of time will prevent searching for it in the text-books; this is my excuse for trespassing on your time, and what the paper may lack in elegant language I trust will be considered counter-balanced by the facts of interest that it may contain.

Theory of Causation.—The actual source and cause of the hot mineral springs is, of course, not known, being probably many thousands of feet down in the bowels of the earth, and beyond the ken of man; but Sir Chas. Lyell, the geologist, in addressing the British Association at Bath in 1864, thought that "the Bath springs marked the site of a great convulsion in the crust of the earth, either volcanic or earthquake, and showed that the upper part of the rent through which the hot water rises consists of the strata of Lias and Trias, 300 feet thick." Below this lay the subjacent coal measures, and this is proved by particles of coal being found amongst the sand which the springs bring up. Sir Charles further said that "their great volume and high temperature made the springs unique and without a parallel, taking into consideration the great distance from any region of earthquakes or volcanoes, active or extinct." On the other hand, Dr. Freeman—a local writer—opposes the volcanic theory, and points out that the geological features of the district indicate a tranquil disposition of the materials constituting the several strata, and that the separation between the upper stratum of the high land by the valley is more properly to be ascribed to denudation, at a time, probably, when the valley formed part of a great estuary, the waters of which flowed in the direction of Weston-super-Mare. (Here incidentally it may be mentioned that Beacon Hill, which rises on the north side of the city, topped by a wood, is practically a great stratum of fullers' earth.)

Composition.—Many eminent scientists have examined the Bath waters, none of them of more interest to pharmacists than Dr. Attfield. He gives the following analysis (quantities in grains per gallon):—

Calcium carbonate	7·8402
Calcium sulphate	94·1080
Calcium nitrate	0·5623
Magnesium carbonate	0·5611
Magnesium chloride	15·2433
Sodium chloride	15·1555
Sodium sulphate	23·1400
Potassium sulphate	6·7020
Potassium nitrate	1·0540
Iron carbonate	1·2173
Silica	2·7061
Total grains per gallon	168·2898

Prof. Roscoe evaporated some of the water to dryness, and examined the residue by the spectrum—Strontium was easily detected. The portion of the deposit soluble in dilute hydrochloric acid was freed from alkaline earths by precipitating with carbonate and oxalate of ammonium, and in this precipitate Strontium was again detected. Magnesium was separated by the ignition of the mixed chlorides with mercurous oxide, and the portion of the residue soluble in water examined, and Lithium was plainly visible through the spectrum. Also in both these analyses Copper was detected, this being exceptional in mineral waters. It will be noticed from Dr. Attfield's table that the most abundant ingredients are calcium sulphate, magnesium chloride, sodium chloride, and sodium sulphate. The quantity of iron is comparatively minute, but to the taste it is very perceptible, and its medicinal effects on the system quite decided. Iron, lime, and magnesia are plentifully deposited in the channels through which the water is conveyed, and also on the pavements of the public baths. The drinking glasses, after being in use at the Pump-room for some time, become brown and opalescent, the iron deposit appearing to be fluxed to the glass. In addition to the saline constituents, the springs contain and evolve on coming to the surface large quantities of a mixture of gases, which Prof. Williamson elaborately examined in 1865, and gave the following as the volume composition of the gas:—

Carbonic acid	3·056	per cent.
Oxygen	0·617	"
Marsh gas	0·216	"
Nitrogen	96·11	"

Later, Lord Rayleigh found that it also contained Argon and Helium, 1·2 parts of Helium in 1,000 volumes of the gas. This attracted the attention of his great co-worker, Prof. Dewar, who in 1898 experimented with it considerably in his researches on liquid air. He submitted the Bath gas to liquefaction, at the same time comparing it with a liquefied mixture of air and hydrogen, and discovered a marked difference in their behaviour under refrigerating conditions. Whilst the hydrogen and air mixture on condensation gave clear, transparent liquids, the product from the Bath gas was turbid, and a yellowish-brown precipitate was gradually formed, which proved to be a hydrocarbon, probably of the petroleum series, with a marked aromatic smell, and liquid at ordinary temperatures. Another peculiarity of the liquid nitrogen obtained from Bath gas is that on examining it with a spectroscope no trace of oxygen could be obtained, whereas in all other attempts to make nitrogen for liquefaction on a large scale oxygen could always be detected in the liquid. Prof. Dewar stated that were Helium wanted on a large scale, for experimental or commercial purposes, the King's Well at Bath could be made to yield a good supply.

Aquæ Sulis.—Is it not a strange coincidence that nearly 2,000 years ago the Romans should have named the springs Aquæ Sulis?—waters of the sun—and to-day one of our greatest chemists pronounces them to be almost the only terrestrial source of Helium, that element existing chiefly in the sun. Prof. Dewar has laid down at Bath a plant for collecting the gas from the springs to furnish the Royal Institution with a plentiful supply of nitrogen and helium. Members of the Conference will have an opportunity of seeing this on their visit to the baths.

Physical Characters.—Physically the water as drawn from the springs is clear and sparkling; in small quantities colourless, but in large volumes it assumes a pale sea-green tint. It is odourless, and to the taste slightly saline, pungent and chalybeate. Standing exposed to the air it deposits the iron held in solution by the carbonic acid gas. Its specific gravity is 1·002, and temperature is constant at 120° F.

The quality and quantity of the water never varies, and the three springs daily yield 507,600 gallons. An old writer describes them as "perennial springs, whose water is neither increased by the greatest glut of rain, nor lessened by the greatest drought."

As an analogy between the hot springs and a volcano, Sir Chas. Lyell remarked that "the apparent want of power of the hot springs to raise voluminous masses of solid matter which volcanoes do, is balanced by the large amount of solid and gaseous matters held in solution and brought to the surface by the springs"; and Prof. Lloyd Morgan (Bristol), in whose university we have the privilege of assembling, has calculated that, the chief spring yielding 385,000 gallons per day, and each gallon containing 150 gr. of solid matter in solution, the daily quantity of matter removed from the earth would amount to 3·68 tons, and in one year would form a column 9 feet square and no less than 223·8 feet in height. Most of you will be visiting the Clifton Suspension Bridge this week, which is 280 feet high; it will give one an idea of the enormous size this column would be, and make us pause and wonder at the work of the agencies of Nature, unseen and unrealised by the mind of man.

The solid constituents in a 12-oz. glass of the water, which is the usual daily dose for those taking the waters, is 13·5 gr., so that it is by no means a homœopathic dose.

Origin of the Constituents and Temperature.—In regard to the origin of the mineral and gaseous constituents in the waters, taking Sir Chas. Lyell's assumption as correct, that "the water itself is supplied from some mountainous district, possibly a great way off, it may be inferred that the rain-water permeating the earth, it would carry down the calcium sulphate from the gypseous, the calcium carbonate from the calcareous, and the other salts from the decomposing saline rocks.

Gases.—The large volume of gases evolved from the Bath waters is very remarkable, no less than 250 cubic feet being given off daily, over 96 per cent. of which is nitrogen. This, Lyell considers, is wholly derived from atmospheric air, carried down by the rain-water, and this being subjected to oxidating processes, the nitrogen is left free. But Bischoff, the eminent German chemist, suggests that it is produced by the action of intense internal heat on stratified organic matter. Nitrogen is more copious in the Bath waters than in any other thermal springs.

The source of the carbonic acid gas, which gives the sparkling appearance to the water, and maintains the iron in solution, is not known, beyond the fact that it is of universal occurrence, it percolates rocks, and decomposes the silicates into carbonates, not only augmenting the volume of the altered rocks, but becoming the source of the carbonates that appear in solution in the springs.

The small quantity of oxygen is no doubt a portion of the atmospheric air carried down by rain and unaltered, and the Marsh gas probably arises from the decomposition of carbonaceous deposits.

The Heat or Temperature, which is exceptionally high for thermal springs (120° F.), has been ascribed to the progressive chemical changes that must be continually going on in the structure of the earth, and another writer is of opinion that subterranean heat gives the water its high temperature.

In all probability the real explanation can be found by blending the above two statements. Occasionally there is found floating in the water vegetable matter, being a tiny plant named *Oscillatoria tenuissima,* and sometimes there is deposited small fossilized fruits.

Efficacy.—The mineral or gaseous constituents of the Bath springs offer us no explanation of their medicinal virtue, which is chiefly successful in rheumatism and skin complaints. Its curing efficacy is probably due to the union of its various substances and temperature. With the exception of sodium sulphate and lithium chloride, of which there is but the smallest trace, none of the other ingredients are prescribed in everyday medicine for these complaints. That they are of great value in the treatment of disease is testified to by the number of bathers who go under the treatment. During the past ten years no less than 1,020,000 people have attended them, including the highest and noblest in the world of fashion, wealthy trade kings and flourishing merchants, whilst the humbler orders in the social scale pilgrimate there, and through the medium of well-organised hospitals and charities, take off and benefit thereby, the wonderful healing fluid that Nature has endowed the city with.

Formed in Nature's own laboratory, deep down in the bowels of the earth, with a cunning and skill that no artificial mixture is able to rival it, it commands the respect and attention of all, and though neither Nature nor the pharmacy laws have been kind enough to appoint the chemists to dispense this natural medicine, a visit to the source of the thermal waters, and there to see the wonders of the first century bridged to the handiwork of the twentieth, will not be wanting in interest, nor will it be an unfitting item of the Conference programme.

THE FUTURE OF PHARMACY.

BY LEO. ATKINSON.

The future of pharmacy must inevitably force itself on the consideration of members of the British Pharmaceutical Conference. The complex phenomena of joint-stock trading, as applied to pharmacy, has so revolutionised our avocation, it is well nigh out of recognition. At this Conference, primarily instituted to promote the welfare of our craft, it may not be out of place to endeavour to induce and stimulate a line of thought with the object of evolving some practicable scheme for the conservation of orthodox pharmacy as a retail business. It is abundantly evident that no contemplated legislation will afford even the semblance of protection for the professional side of our business; whether the proprietors of a business be qualified or unqualified is immaterial to the Government and the public, so long as the actual work of dispensing and handling scheduled poisons is confined to qualified subordinates. It seems impossible to make either the legislator or the "man in the street" understand that "pharmacy," in the nature of things, is *sui generis*, and cannot be conducted on competitive company lines without serious risk to the public, and the certainty that they cannot be supplied with trustworthy drugs. The difference between the best drugs and poor drugs in many instances involves the difference between life and death. The prevailing popular idea is that the Food and Drugs Act is sufficient protection. The experienced pharmacist knows better. The wide latitude in gradations in quality and value of drugs (which the purchaser cannot judge) is the opportunity for the sharp, unscrupulous trader, and for this reason pharmacy has suffered more than any avocation from the encroachments of joint-stock trading.

The wide distinction between the vendors of drugs and medicines and vendors in every other trade where competition, from an economic standpoint, may be legitimate, has never been sufficiently accentuated. The purchasing public, whilst fairly critical connoisseurs in regard to textiles, art, furniture, and the ordinary necessaries of life, cannot possibly be competent to understand or estimate the quality of a drug; it is constantly alleged that pharmacists charge exorbitant prices for drugs and galenicals because the commercial or company chemists charge so much less. The truth is that the commercial druggist can realise much greater profit on low grade articles. Before a critical audience of experts this does not require further elaboration—still the unjust accusation of extortion remains. Is it to be wondered that so many fall by the wayside? There is the additional factor that the unqualified buyers of drugs for a joint-stock company are without the skilled knowledge necessary for differentiation, and the qualified subordinate (usually one of the weaklings of pharmacy) accepts the inevitable. The idea that qualified subordinates guarantee the public the protection the Pharmacy Act is assumed to confer is too ridiculous for serious argument.

The fundamental principle of the founders of the Pharmaceutical Society was unquestionably to advance the status of retail chemists and druggists. The Society have honourably carried out important educational work and faithfully fulfilled an implied contract with the State; on the other hand, owing to a loosely-drafted clause in the Act of 1868, the highest judicial tribunal has bound the unfortunate pharmacist hand and foot, and exposed him to the immoral, if not illegal, competition of every petty shopkeeper, one-man company, or dividend hunter under heaven.

Fifty years ago, in the evolutionary stage, no one could have foreseen that pharmacy, at a later date, would be thus strangled by acute commercialism. We have now to face the fact that the highest educational facilities provided out of the funds of the Society are no longer in any due proportion appropriated by those who propose adopting retail pharmacy as their future business.

It will be found a large percentage of those taking honours in the Society's School never contemplate following as a business that which was the objective of the founders of pharmaceutical education, so that in effect we are educating and qualifying assistants for joint-stock companies. The natural inference from this condition of affairs must be that retail pharmacy, *per se*, no longer furnishes a livelihood commensurate with its responsibilities and educational requirements. Paradoxical as it may appear, year by year in ordinary retail there is less actual need for any great amount of specific pharmaceutical skill. The art of prescribing, for reasons too numerous to epitomise, is neglected by modern physicians, prescriptions are fewer, and the bulk of these consist mainly in repacking the various nostrums of advertising manufacturers—none too modest in literary mendacity. In the immediate future these factors, in relation to our business, will doubtless be intensified, so that to maintain any due proportion of professionalism in his work the pharmacist must branch out in several directions—optics, photography, bacteriology, mechanics, physical apparatus, etc.—though the technics pertaining to these is not included in present pharmaceutical scholastic training, neither is it retail pharmacy.

The elements of change may be noted in every direction, historic houses are departing from their traditions to meet a new order of circumstances, revolutionary change in medical practice and medicaments determine a corresponding change in the products of pharmaceutical manufacturers, seldom to the advantage, or requiring the intermediary skill of the competent pharmacist.

If this be the admitted condition of affairs, the question arises—Is retail pharmacy as a distinct avocation any longer a necessary, desirable, or possible factor in the body politic? Is the pharmacist as a specialist to become extinct? The Legislature imply that the disappearance of the pharmacist does not call for Parliamentary interference; hence, we must work out our own salvation or be crushed out by circumstances we can neither govern nor control. It must be a matter of common observation that now in the general run of chemists' businesses the dispensing, drug and medicine branch is becoming subordinated to departments of more extensive mixed trading; in fact, pharmacy is used as an attractive side-line for other and more lucrative trades. Owing to the attitude of the Legislature, the educational equipment of the up-to-date store chemist need not extend beyond a knowledge of keen commercial methods, the acquirements of a shop-walker, and arithmetical proficiency sufficient to supervise a mechanical till.

The ultimate commercialisation of the drug trade is proceeding with amazing rapidity, independent of the possible State recognition of company pharmacy.

When this commercialisation is entirely accomplished, and the individual pharmacist practically extinct; when the public have for a few years enjoyed the economic blessing of free trade in medicine and drugs, combined with a medley of articles of household use and comsumption, with these elements of serious danger uncontrolled and encouraged by Parliamentary ineptitude, is it not conceivable in such circumstances history may repeat itself. The pendulum, held back in one direction, will, on liberation, swing a corresponding distance the opposite way. The antecedent condition of the drug trade and the catastrophe which led up to the Pharmacy Act of 1868 is well known, and once again a public danger may develop into a public scare, necessitating prompt legislative reform.

To meet such a contingency and finally evolve and establish professional pharmacy on a solid basis is the problem to be carefully considered, without hasty generalisations, so that the mistakes of the past shall not be repeated in the future. As an initial requirement I venture to suggest the formation of a Guild of Pharmacy, in no sense to clash with the parent Society. Such a Guild, in the light of past experience, would have disciplinary regulations and the machinery for controlling and maintaining internal integrity.

That such a desirable evolution is not entirely visionary or merely idealistic fantasy is negatived by the existence of numerous professional associations, many of which have been evolved and emancipated from conditions apparently as hopeless and incongruous as the condition of the drug trade to-day; as familiar examples, take the Dental Association, Society of Actuaries, Chartered Accountants, Architects, British Medical, Incorporated and Law Society, and others. If, as we know, these associations have not found a practicable scheme for protection insurmountable, why should the pharmacist degenerate into a mere Jack-of-all-trades?

Conceiving, as I do, that the British Pharmaceutical Conference is the most suitable body to take the initiative is my apology (if one be necessary) for suggesting some additional organisation whereby, should favourable circumstances arise, we should be prepared to seize the opportunity and restore the pharmacist to public confidence and esteem in the legitimate discharge of responsible duties, not alone to his individual advantage, but with advantage to the community.

PROPOSED NEW METHOD OF STANDARDISING FERRI ARSENAS, B.P.

WM. W S. NICHOLLS, B.SC. (LOND.), F.C.S.

When your Conference suggested that the arsenic content should be substituted for the ferrous arsenate content as the standard test for this substance, it appeared to me that they were acting in the best interests of the trade; although proposing what at first sight might appear to be a difficult and tiresome assay for one rapidly and easily performed as well by the pharmacist behind his dispensing screen as by the analyst in his laboratory.

It was with the view of making the estimation of the arsenic in Ferri Arsenas as easy a task as that of assaying the iron (ferrous) that I undertook the examination of typical commercial samples of the salt; and the method I shall introduce to you will, I venture to think, fully meet your expectations and fulfil your requirements.

It is no new method. I claim no credit as its originator; but, so far as I can learn, it has found no place in the pharmaceutical laboratory, and does not appear to have received the attention its simplicity and accuracy merits.

As long ago as 1867, Clark and Esilman deposited at the Patent Office a provisional specification "for decomposing sulphides of copper," in which it was pointed out for the first time that the "per"-salts of iron decomposed the sulphides of a large number of metals; and it occurred to them that this action might be used for the estimation of arsenic when in the form of its sulphide. Further, they found the method applicable to the direct estimation of arsenic in iron. Here, then, is my proposition. Adopt this method for standardising your Ferri Arsenas.

I will not trouble you with details of the process further than is necessary to explain how it was applied in my experiments and to assure you of its absolute accuracy. You will gather more from a perusal of the articles in the *Journal of the Society of Chemical Industry*, **10**, 1891, pp. 444, *et seq.*, and in the *Journal of the Chemical Society* (Trans.), **61**, 1892, pp. 424, *et seq.*, than I can possibly explain by word of mouth, and will learn how wide and varied is its application. At the same time, however, I shall point out that for the analysis of "Ferri Arsenas" no preliminary treatment is required; you have simply to put a weighed quantity of the salt into a distilling flask, add a solution of $FeCl_3$ in strong HCl, connect up with a condenser, and distil over the $AsCl_3$. There is, in our case, no SH_2 to be taken into account, as none exists; we have no sulphur in our original salt, and we add nothing to generate aught but the pure $AsCl_3$, and, as I shall presently show, the necessity for converting the $AsCl_3$ into As_2S_3 may also be dispensed with.

The apparatus required is of the simplest description. A stoppered 4-oz. glass retort with the neck bent into the shape of an inverted V (Λ) connected with a worm condenser, to the other end of which is attached a straight adapter. This passes into about 75 C.c. of water in a flask fitted with a guard tube and immersed in ice-cold water. A small Bunsen lamp and a piece of asbestos gauze completes this part of the outfit. One other piece of apparatus—viz., a burette—and we are in a position to commence our experiments.

The solutions required are:—

(1) Pure re-distilled, arsenic free HCl.

(2) 4 oz. of perchloride of iron, dissolved in 100 C.c. of the acid.

(3) Iodine of half the strength of the volumetric solution of iodine of the B.P.—*i.e.*, of N/20 strength, each cubic centimetre of which is equivalent to 0·001875 Gm. As, and which has been standardised against pure As_2O_3.

(4) Caustic soda (free from iron) as strong as possible.

(5) Sodium bicarbonate (saturated).

(6) Starch paste.

For the experiment, weigh out accurately 0·13 Gm. of the sample of Ferri Arsenas and introduce it into the retort, together with 1 Gm. of ferri sulphas, B.P. (powdered), 10 C.c. of the solution of $FeCl_3$, and 20 C.c. of the concentrated HCl. Insert into the hole of the retort which usually carries the stopper a cork, through which passes a thistle funnel, bent so that the straight end dips well under the liquid in the retort and the thistle end sits upright, connect with the condenser and receiver, protect the bottom of the retort with the asbestos gauze, and apply a very small flame. The contents of the retort must be kept in motion until the liquid begins to boil, otherwise superheating occurs, accompanied by violent bumping and consequent danger to the apparatus. As, soon, however, as boiling commences the contents distil without further attention until, by careful regulation of the flame towards the end of the distillation, only about 10 C.c. of liquid remains in the retort. Some experience is needed to prevent disaster at this point. Should "bumping" commence, the flame must be immediately removed and the retort slightly raised from the hot gauze, as if any of the iron solution be carried over into the distillate the experiment is valueless, for on making the solution alkaline, prior to titration, you will simply regenerate your Ferri Arsenas.

The first distillation should be made, as I have already explained, at as low a temperature as possible, but the second and third may be carried on more rapidly. For the second distillation add through the thistle funnel in the retort 20 C.c. of concentrated HCl and proceed as before.

Two distillations are sufficient to effect the liberation of the whole of the arsenic, but, as a precaution, I have invariably made a third with a further 15 C.c. HCl, and a final one with 20 C.c. H_2O.

The condenser should be washed with H_2O until the runnings cease to redden blue litmus paper, the washings being added to the distillate. The distillate is then exactly neutralised with a strong solution of NaOH (free from Fe), or of AmHO, an excess (50 C.c.) of a saturated solution of $NaHCO_3$ and a few drops of starch-paste added, and the titration with N/20 iodine carried out as directed in the text-books.

A few words as to the materials employed. Concentrated HCl and solid $FeCl_3$ invariably contain arsenic, the $FeCl_3$ in considerable quantity. Care must, therefore, be taken in every instance to test by a blank experiment, or, better still, to free the materials from arsenic by a method which I hope to describe in a subsequent paper. The distillate should be made up to equal bulk with that from an actual experiment, so as to correct also the amount of iodine needed to produce the permanent blue colour indicating the completion of the titration.

A note of warning as to the use of an efficient condenser is necessary, for the success of the experiment depends entirely on the collection of the whole of the volatile $AsCl_3$. The piece of apparatus I can confidently recommend is that figured as No. 2249 in Messrs. Griffin's catalogue. It is compact, and by far the most powerful condenser on the market.

The annexed table of results will show you the proximate analysis of some twenty-eight samples of Ferri Arsenas obtained from representative wholesalers in the three kingdoms. A glance at the figures reveals broadly these facts:—

(1) That there are on the market two principal kinds of Ferri Arsenas—the one containing approximately 30 per cent., the other 27 per cent., of arsenic.

(2) That no less than 39 per cent. of the samples examined fell below the B.P. standard for ferrous arsenate.

The suggestion of the Conference that this standard be abolished in favour of the arsenic content is therefore fully justified. The figures for the percentage of arsenic, on the other hand, are so uniform throughout the series of samples as to leave little doubt of the suitability of the standard proposed and its absolute fairness as compared with that at present in use.

A word, however, must be said as to this 10 per cent. ferrous arsenate standard. That there is a difficulty in producing a satisfactory preparation as regards the ferrous iron content cannot be denied, but that the percentages should in so many cases fall from a possible 30 to below the standard 10 is a matter for the manufacturers' careful consideration.

However, my work is not so much to point out defects as to urge the adoption of the new standard proposed by the Conference.

I hope that the method suggested for the estimation of the arsenic content of the salt may commend itself to you, and that it may find a place in the next edition of the B.P. Its accuracy is well known to those analysts who work with iron and steel, and in the large number of experiments—over one hundred in all—which have been made by myself and my colleagues on ferri arsenas it has proved equally reliable. In no single instance did our results vary by more than three-tenths of 1 per cent. It is easy of application, requires no expensive apparatus, and can be carried out equally well in the shop as in the laboratory.

In a subsequent paper I propose to introduce to your notice an equally elegant and rapid method of determining the iron content, as well as to give you particulars of the means adopted to ascertain the percentage of moisture. In fact, the salt affords so many interesting points in its analysis, and in the calculations for the distribution of its ingredients, that I intend to cite it as an excellent example on which some of our young friends at Bloomsbury Square may exercise their ingenuity during the coming season.

Incidentally, I have examined a few samples of Sodii Arsenas, B.P., and the distillation method of assay for percentage of arsenic is equally applicable to this salt. Table No. II. shows my results.

It remains for me to thank most cordially those manufacturers who so kindly supplied me with the samples—all save No. 20—of genuine Ferri Arsenas, and especially those who have permitted their chemists to undertake assays on my behalf and have prepared special specimens for my examination; your Finance Committee for the grant made to defray part of the cost of investigation; and my colleagues, Messrs. Cutbush and Robinson, to whom I am indebted for valuable practical help.

Table No. I.

Proximate Analysis of "Ferri Arsenas," B.P., 1898.

Progressive No. of Sample.	Percentage of				Equivalent Percentage of			Total per Cent.
	Iron.		Arsenic.	Water.	Ferrous Arsenate.	Ferric Arsenate.	Ferric Oxide.	
	Ferrous	Total.						
1	4·68	27·73	29·55	15·56	12·43	65·91	5·93	99·83
2	5·94	28·15	29·94	14·66	15·78	63·84	5·59	99·87
3	4·86	28·30	29·92	14·23	12·91	66·47	6·26	99·87
4	3·68	28·20	29·81	14·29	9·83	68·87	6·82	99·81
5	3·63	28·42	29·73	14·18	10·76	67·84	7·02	99·80
6	3·49	28·01	29·82	14·53	9·28	69·38	6·60	99·79
7	3·51	28·41	30·15	13·64	9·34	70·19	6·81	99·98
8	5·79	28·19	30·61	13·46	15·38	66·08	4·93	99·85
9	3·87	27·84	30·85	13·31	10·28	71·17	5·08	99·84
10	3·49	28·12	30·72	12·89	9·27	71·74	5·80	99·81
11	12·36	30·20	27·04	17·01	32·84	41·54	8·47	99·86
12	9·58	28·25	30·66	13·88	25·46	57·42	3·15	99·91
13	2·17	29·88	27·07	15·94	5·78	65·30	12·83	99·85
14	5·08	28·23	29·94	14·31	13·50	65·99	6·04	99·84
15	2·74	28·06	29·87	14·36	7·29	71·25	7·00	99·90
16	5·19	30·43	26·89	15·86	13·78	57·82	12·38	99·84
17	5·07	30·04	27·10	16·06	13·47	58·65	11·64	99·82
18	3·58	28·17	29·21	15·61	9·51	67·58	7·15	99·85
19	5·04	30·42	27·08	15·54	13·41	58·66	12·21	99·82
20	3·39	32·02	25·39	15·59	9·01	58·10	17·10	99·80
21	4·23	27·76	29·55	15·48	11·24	66·98	6·17	99·87
22	3·07	27·82	29·64	15·11	8·16	69·90	6·67	99·84
23	7·37	30·59	27·02	14·74	19·58	53·10	12·43	99·86
24	3·20	30·24	27·06	15·53	8·52	62·87	12·86	99·79
25	5·29	27·78	30·19	14·63	14·06	66·15	5·02	99·86
26	5·04	30·27	27·01	15·85	13·45	58·43	12·08	99·81
27	9·10	31·40	27·25	14·49	24·18	49·66	11·51	99·84
28	3·63	27·85	29·16	15·83	9·65	67·34	7·00	99·82

Table II.

Arsenic Content of Sodii Arsenas, B.P. 1898.

Progressive No. of Sample.	Percentage of			
	Arsenic.		Water.	
	By Calculation.	By Analysis.	By Calculation.	By Analysis.
1	40·30	40·31	Nil.	Nil.
2		40·28		Nil.
3		40·22		0·31
4		40·32		Nil.
5		40·18		0·63
6		40·30		Nil.

THE QUANTITATIVE SEPARATION OF STRYCHNINE FROM QUININE.

BY E. F. HARRISON AND D. GAIR.

The quantitative separation of a small amount of strychnine from a relatively large amount of quinine becomes necessary whenever it is required to make a full examination of such preparations as Easton's Syrup, or compound syrup of hypophosphites. Several methods of doing this have been mentioned by different chemists, but we have not found any of them to be satisfactory.

In 1883, in a paper on Easton's Syrup, read at the Conference, Davies and Schmidt described a method employed by them, consisting in colorimetric comparison of a solution of the alkaloids with solutions of known quantities of strychnine, after the addition to both of sulphuric acid and bichromate; they remark that "as a quantitative method it leaves much to be desired."

Wilson (*P.J.* [3], **19**, 753) gives the result of examination of a number of samples of Easton's Syrup, including the determination of the strychnine, but does not describe the method used beyond saying that the alkaloids were dissolved in hydrochloric acid, and the strychnine precipitated by addition of potassium sulphocyanide, and weighed. We are unable to find any method of separation by means of sulphocyanide; a solution of 0·1 Gm. strychnine, and about 2 Gm. quinine hydrochloride was precipitated by potassium sulphocyanide, and the composition of precipitate and filtrate determined separately by the method finally adopted, which is described below; the results were:—

	Precipitate.	Filtrate.
Strychnine	0·0104	0·0826
Quinine (by difference)	1·2100	0·8262

A corresponding result was obtained when only enough sulphocyanide was added to precipitate a small part of the alkaloid.

It has been pointed out by Flückiger that potassium cyanide precipitates strychnine as alkaloid from solutions of its salts, and we experimented to see if this fact could be utilised. On adding potassium cyanide to a solution of salts of the two alkaloids, the strychnine is mostly thrown out before the quinine, but not sharply; by adding solution of cyanide two or three drops at a time, and extracting the liquid with chloroform, repeating this until appreciable traces of quinine were extracted, not more than half the strychnine could be separated, and the method was abandoned.

In Allen's 'Commercial Organic Analysis' (2nd edition) it is stated that a separation can be effected by precipitating the strychnine from a strongly acid solution by means of potassium ferrocyanide, and its amount determined by calculation from the quantity of ferrocyanide consumed; this is the method recommended by Holst and Beckurts for the determination of strychnine in presence of brucine. Our experiments with this process show that the precipitation is very slow, and if, as suggested, ferrocyanide solution is added until excess is shown by ferric chloride paper, the end-point is not at all well marked and definite. We also tried adding excess of ferrocyanide and titrating back with zinc chloride, using a uranium salt as indicator; this gave good results with strychnine alone, but in presence of quinine too much ferrocyanide was precipitated, and the results varied greatly according as the excess of ferrocyanide was more or less.

Another method given by Allen, originally due to Dwars, is to add ammonium oxalate to a neutralised solution of the alkaloids, allow to stand twenty-four hours, filter out, and wash the oxalate of quinine; regenerate the alkaloid from filtrate and washings, and treat it twice with 3 C.c. of washed ether, to remove amorphous alkaloid and the residual quinine, the strychnine being left. In addition to being slow, this method is much reduced in usefulness by the fact that the oxalates of the other cinchona alkaloids are comparatively easily soluble; so that if the quinine were replaced to any considerable extent by one of these other alkaloids in a sample of syrup, the results would be quite unreliable. In a trial of this method we took 0·05 Gm. of strychnine and 1·5 Gm. of quinine bisulphate, and obtained 0·0440 Gm. of alkaloid, representing the strychnine, or an error of 12 per cent. Various attempts to separate the two alkaloids by means of their different solubilities in ether, petroleum ether, and chloroform, were not sufficiently successful to be useful quantitatively.

The following method, depending on the different solubility of the tartrates in solution of Rochelle salt, proved quite successful. It is best to adhere closely to the details as to quantities, etc. An amount of total alkaloid containing about 0·05 to 0·1 Gm. of strychnine is dissolved in 60 C.c. of water slightly acidulated with sulphuric acid; ammonia is added as long as the precipitate re-dissolves, when the quinine will be in the state of acid sulphate; 15 Gm. of powdered sodium potassium tartrate is then added gradually, with stirring; then more ammonia, until the mixture is only just acid to litmus paper, and it is then warmed on the water-bath for about fifteen minutes, and allowed to stand till quite cold (about two hours). The quinine tartrate is then filtered out with the aid of a pump, and washed with a solution of 15 Gm. sodium potassium tartrate in 45 C.c. of water, made just acid with sulphuric acid. The filtrate and washings are mixed, made strongly alkaline with ammonia, and extracted three or four times with chloroform; the chloroformic solution is washed with 10 C.c. of water, containing a few drops of ammonia solution, evaporated to about 4 or 5 C.c., 10 C.c. of alcohol added, and the mixture evaporated to dryness; the residual alkaloid is washed three times with 1 C.c. each time of washed ether, and the washings rejected; the residue is practically pure strychnine, and is dried and weighed. The alcohol is added not only to prevent decrepitation, but also to avoid retention of chloroform by the strychnine, which otherwise occurs. If the amount of strychnine in the total alkaloid taken is much over 0·1 Gm. it is necessary to increase the quantity of the first solution and of the Rochelle salt, otherwise the same treatment is employed.

A number of determinations in which known quantities of strychnine were taken were made by this method, and the results are given below. The bisulphate of quinine employed had been purified from all but traces of other alkaloids; the sulphate was ordinary good commercial salt, fulfilling the official requirements as to the amounts of other alkaloids present; the "mixed sulphates" was a mixture of equal weights of quinine sulphate and sulphates of the other alkaloids left when pure quinine was separated from the commercial article. The results show that the presence of these other alkaloids, even in considerable quantity, does not seriously affect the correctness of the results obtained by the method.

Taken.		Found.
Strychnine.	Other Alkaloidal Salt.	Strychnine.
0·0500	1·5 Quinine bisulphate	0·0510
0·1000	1·5 Quinine bisulphate	0·1000
0·1500	1·5 Quinine bisulphate	0·1504
0·2000	1·5 Quinine bisulphate	0·2036
0·0500	1·0 Quinine (alkaloid)	0·0504
0·0500	1·5 Quinine sulphate	0·0500
0·0500	1·5 Quinine sulphate	0·0510
0·1200	2·0 Quinine sulphate	0·1194
0·0750	2·0 mixed sulphates	0·0780

THE PREPARATION OF ABSOLUTE ALCOHOL FROM STRONG SPIRIT.

BY PROF. SYDNEY YOUNG, D.SC., F.R.S.

It is well known that the strongest spirit obtainable by distillation with the most perfect still-head contains less than 96 per cent. by weight of pure alcohol.

In order to remove the remainder of the water, dehydrating agents have always been used, but they do not give very satisfactory results. According to Mendeléeff, freshly-ignited lime is the only one by means of which pure dry alcohol can be prepared from strong spirit, and, even with this substance, special precautions must be taken to ensure success. More recently, Squibb obtained alcohol of lower specific gravity than Mendeléeff by the long-continued action of lime in a percolator, but his results, unlike those of the great Russian chemist, were somewhat variable, and there is very little doubt that a small amount of ether was formed.

The new method of dehydration depends on the following facts:—When a mixture of alcohol, benzene, and water is distilled, separation tends to take place into—

(1) A ternary mixture of alcohol, benzene and water, which boils constantly at 64°·85.

(2) A binary mixture of two of the three original components.

(3) That pure component which was in excess.

The boiling points of all possible components separable by distillation, and the percentage composition of the mixtures of constant boiling point are tabulated below. (A = alcohol; B = benzene; W = water.)

		Percentage Composition.		
	Boiling Point.	A	B	W
A.B.W.	64·85	18·5	74·1	7·4
A.B.	68·25	32·4	67·6	—
B.W.	69·25	—	91·2	8·8
A.W.	78·15	95·6	—	4·4
A.	78·3	100	—	—
B.	80·2	—	100	—
W.	100·0	—	—	100

When a mixture of equal weights of, say, 94 per cent. alcohol and benzene is distilled through a very efficient still-head, the components which can be separated by fractional distillation are:—(1) The ternary A. B. W. mixture, containing, theoretically, the whole of the water; (2) The binary A. B. mixture, containing the remainder of the benzene; (3) Pure alcohol. We thus get the remarkable result that the least volatile of the original components—water—comes over in the first part of the distillate, while the most volatile component, alcohol, remains until the last.

Benzene and dilute alcohol are easily recovered from the ternary mixture by treatment with water; and, by distillation of the dilute alcohol, strong spirit may again be obtained.

The binary mixture may be treated in the same way, or it may be added to a further quantity of strong spirit when it is to be dehydrated.

There is practically no loss either of alcohol or of the dehydrating agent, benzene; and, since no chemical action can take place between the substances present, there is no fear of impurities being introduced. Theoretically, a single distillation should be sufficient to remove the whole of the water, but the separation is a difficult one, on account of the small difference between the boiling points of the ternary and binary mixtures, and, even with a very efficient still-head, a second, or possibly a third distillation with benzene is necessary. The water may thus be completely eliminated; but there appears to be a minute trace of benzene left in the alcohol, too small to be detected by any chemical process. This may be completely removed, if necessary, by distilling the dehydrated alcohol with normal hexane; the binary hexane-alcohol mixture, which comes over first, carries the benzene with it, and no hexane is left in the residual alcohol.

The specific gravity of the alcohol, dehydrated in this manner, agrees very well indeed with that observed by Mendeléeff, as will be seen from the table below:—

Observer.	Dehydrating Agent.	Specific Gravity at 0°/4°.
Mendeléeff	Lime	0·80625
Young	Benzene	0·80634
Young	Benzene and Hexane	0·80627

In order to obtain satisfactory results the benzene must be pure, and it is absolutely necessary to employ a very efficient still-head.

BALEARIC BOTANY, 1903.

BY J. W. WHITE, F.L.S.

The papers read before this Conference are commonly the outcome of scientific labour undertaken indoors, often, no doubt, by light of a midnight lamp. To-day I am asking you to listen for awhile to an account of work done in the open air, for the most part in brilliant Balearic sunshine; for I am anxious that the sympathetic interest in field botany lately shown by our members should not subside, but rather be nurtured and encouraged, and I trust that this effort of mine may tend in that direction.

Well, the date was Monday, April 20, in the Easter vacation, and, as my fellow-traveller's engagements made it necessary for him to be again in Clifton on May 8, there resulted eighteen days for a couple of botanists interested in the European flora to use to the best advantage. Now, if one wants to gather plants at that early period, it is before all things essential that one should go as far South as possible. And a careful comparison of maps and time-tables showed that we could certainly have a day or so longer in the Balearic Islands than in any other spot on the same parallel of latitude. Sicily we intensely desired, and Corsica we greatly longed to see; but the first was too far away, and from the second the return steamers did not fit in. We learnt, also, on turning to the books, that we should certainly find in the Balearics a very remarkable and interesting vegetation, richer in extent and in quality than that possessed by any other European district of similar size. Taking the relative areas of Corsica and Sardinia combined, of Sicily, and of the Balearic Isles, it has been estimated that, while the first contained 1 endemic species in 933 sq. kilometres, and the second 1 in 336, the Balearics possess 1 in 95.

This group of islands, taken together, are about equal in area to our county of Somerset, and their native plants comprise nearly 1,400 species of flowering plants and ferns. Of that number more than 1,000 belong also to the Peninsula of Spain, and almost as many to Italy, France, and Algeria respectively, showing that when the vegetation is compared as a whole with that of neighbouring countries, an evident fact is that, excepting some species that are entirely special, and some others rare and little known, that give to it a peculiar character, the flora of the Balearic group is very closely allied to that of the countries named. But the striking feature of this flora is that it contains about forty species known to grow only in one other country, and fifty which are at present unknown elsewhere in the whole world.

At 9 a.m. on April 21 we left Paris for Barcelona, and twenty-four hours later set foot in that big Spanish port. There was time to look around, and for calls at the steamboat office and a bank; and it may be useful to note that one gets at least a peseta more for an English sovereign in Barcelona or Palma than is given in London. At 2 p.m. we were off for Minorca in a small steamer with very small engines, a good deal of cargo and a good many hours allowed for the voyage. We rolled along over the waves at about eight or nine knots an hour. My doings for the rest of that day and the night following are of no particular interest to anybody; but there was then developed the sole tinge of sadness that pertains to my recollection of the trip.

Going on deck next morning we were running along under the low rocks of Minorca, and presently entered the splendid harbour of Port Mahon, passing on the left the graves of our soldiers, for whose loss and that of the forts they defended, Admiral Byng was condemned and shot. Masses of warm grey rock, houses tier above tier, dazzling white, with red roofs and bright green shutters, the "sapphire sea" below, and a sky of as deep a hue above, formed a scene not easy to describe, but which is familiar to most Mediterranean travellers. Before the vessel had moored we were boarded and welcomed by Don J. Rodriguez, the veteran naturalist, whose name is indelibly impressed on Minorcan botany. He had been advised of our coming by my old friend Mr. E. M. Holmes, well known in Mahon and elsewhere as "le premier algologue Anglais." After lunch three gentlemen, botanists of Mahon, were introduced, and under their guidance we at once started on a walk to Cala Mesquida, a lovely bay four miles to the north-east, where many rare plants abound. On rocks skirting the road we saw a big shrubby wormwood (*Artemisia arborescens*), the largest European species, and *Capparis spinosa*, not yet in flower. Next, *Ferula communis*, a gigantic Umbellifer 9 ft. high, two species of *Frankenia*, and two of Asphodel. The smaller Asphodel (*A. fistulosus*) is only about a foot high, while the larger (*A. albus*) reaches 4 ft. to 5 ft., and is among the commonest as well as the most ornamental plants in the islands, growing everywhere indifferently, on the highest hills or on ditch banks in the lowlands. It appears that this plant bears locally three different names at three stages of its growth. Before the flowering stem appears it is "Purrasa"; when flowering it is called "Au Bo," and finally, when dry, "Caramusha." My informant insisted on this being written down, as he knew no similar instance. A strong spinous shrub, bearing delicious-looking yellow fruit, much like a small choice apple, next arrested attention. This proved to be *Solanum sodomæum*, an introduced species, and the fruit were "Dead Sea apples," handsome to look on, but utterly uneatable. Passing over some low hills we reached the beautiful coast, and came upon a wealth of rare plants. Yellow masses of *Ononis crispa*, most viscid and glandular, which when pressed seems to incorporate itself with the paper into one sticky mess, *Senecio Rodriguezii*, *Digitalis dubia*, a pale-coloured fox-glove, very soft and velvety, *Euphorbia imbricata*, *Lavatera minoricensis*, and *Vicia bifoliata*, all were found within a small compass. These are special Balearic plants, and the two latter grow only at Cala Mesquida. The fragile, filiform stems of the little vetch have to be extricated from the midst of prickly bushes, up through which they invariably grow, and to obtain them uninjured one must exercise all that patience and restraint in language for which the field botanist is noted. The number of spinous and prickly plants in the locality was remarkable. Thorns and prickles prosper well in that country, and fences are cheap and good. A thicket of *Oxycedrus juniper* overgrown with *Smilax* is quite unapproachable. But besides those, the *Calycotome spinosa*, *Juncus acutus*, and other well-known species, there were scattered about among the stones many inviting mossy-looking cushions of close texture, hemispherical in shape, and often 4 or 5 ft. in circumference, tempting the weary pedestrian with their apparent softness. But, far from affording a comfortable seat to the wayfarer, these cushions of *Astragalus Poterium* are masses of interlacing needles, among which the small white flowers appear. Other similar, but coarser, cushions are formed by plants of *Sonchus spinosus*. From neither is it possible to prepare satisfactory specimens for the herbarium. *Asparagus horridus*, too, consists of little else than 2-in. spines, sharp and so tough and strong that I had to tread portions under foot to flatten them enough for pressing. Yet the young shoots of this plant are tender and edible, and they appeared to furnish all the table asparagus that was served during our stay in the islands. The coast thereabout reminded one of the choicest Channel Island scenery, but is even more rocky. Minorca is a solid mass of stone. The exposed surfaces weather in a curious way into sharp knife-edged ridges, and loose fragments lie in profusion everywhere. Returning in the twilight from that first excursion over a specially rough hillside, I asked one of our guides if the whole island were of that nature. "Oh, no," he said, "not at all; in many parts it is quite different—far more stony!" Quarrying is unnecessary, for building material lies at hand in plenty, and the difficulty is to clear land for cultivation. Thick walls bound the fields, and walls are often built around fruit trees, with the double purpose of giving them protection and of getting rid of the stones. Rubble masonry in the islands is marvellously well built and durable without mortar; and immense labour and patience are displayed in terracing hillsides for agriculture. But the people have been always skilful in the handling of stone, for does not ancient history tell us that the Baleares were the champion slingers of the world? Possibly they were more successful with their native pebbles than when, later, they took to using leaden balls; for one historian goes so far as to say that the lead melted in the air from the extreme violence with which it was slung.

And the prehistoric masons of Minorca in remote antiquity possessed the art of building in high perfection. Their monuments—the *talyots*, *taulas*, and *navetas*, built of huge blocks and slabs, are well preserved at this day. They are peculiar to the Balearic Isles, have no affinity with the megalithic remains in other countries, and their purpose can only be conjectured.

The next morning we drove to Albufera. The dusty wayside was bright with flowers, among which Boraginaceæ were prominent. The deep blue of *Borage*, the varying violet and purple of many species of *Echium*, and the quieter hue of *Cynoglossum pictum*, furnished much of the colour. In striking contrast arose here and there tall spikes of *Celsia cretica*, the most showy plant in Minorca, with blossoms as large as a crown piece—yellow blotched with red. Other good things gathered thereabout included *Lepidium carrerasii*, peculiar to Minorca; *Salvia clandestina*, *Ephedra fragilis*, *Ornithogalum arabicum*, *Briza minor*, and some rare Leguminosæ.

Several of our commonest species at home, such as the dandelion, daisy, and dead-nettle, are entirely absent from the islands. Their places are taken by plants of very different character. On waste ground everywhere is a pretty, graceful sort of thistle, *Galactites tomentosa;* and quite as common is the squirting cucumber, *Ecballium elaterium*. Sufficient of the drug grows wild in Minorca to supply the needs of a century at the present rate of consumption.

There is no pasture in the Balearics, and therefore few of the grasses that make our English hay; no cat's tails, foxtails, or dog's tails, nor in fact any species with the name *pratensis*. And, as a consequence, there are no milch cows and no butter. Goats, pigs, and sheep pick up what they can among the rocks, by the roadsides, and on the stubbles. Sheep, as the most dainty feeders, come off the worst. As they wander over the stones, gaunt and hungry, pitiful objects with every rib showing, they tell you plainly that it is useless to ask for mutton-chops in the islands. Cow's milk, beef and butter are city luxuries to be obtained only by much favour and many pesetas. The universal custom is to breakfast on a peculiar rich light bun or cake called "ensiamada," which is much more readily eaten than described. It is slightly indigestible, and with coffee or chocolate stands by one well until the midday meal.

It is vain to look for English hedgerow flowers that beautify our deep lanes and wood-borders in the springtime. There are no sweet violets, bluebells, or red campions; no golden celandine, stitchwort, or blue speedwells. We bruise no broad-leaved ramsons under foot and sniff their odour. Nor does marsh-marigold edge willowy copses with its splendid flowers. No upland fields are gay with gorse or daffodils, nor in the South does "modest woodruff scent the mossy shade." But yet our British hawthorn seems quite at home, flowering in April. We noted also the blackthorn, large nettle, and some docks. Oddly enough, the whole six Balearic geraniums are common Bristol plants. In all else no vegetation could be more unlike. The hillsides are covered with red and white cistus, lavender, genista, mastic and big shrubs of heath and rosemary and myrtle; while the undergrowth is often of several species of *Helianthemum* and Labiates, sprinkled with white flowers of *Cyclamen balearicum*, the "San Pera violet" of the natives. Here and there is a clump of the curiously-jointed *Ephedra fragilis*, a juniper, a pomegranate, or a fig, springing wild from clefts in the rock. Interesting and beautiful as are all these, they are excelled in Minorca by the plentiful and luxuriant *Euphorbia dendroides*, a most elegant bush when in bloom. The stem of this species is quite woody, and sometimes a foot or more in circumference. It rises in regularly three-forked branches into a beautiful pale green hemisphere 5 ft. or 6 ft. high. The largest trees are of *Quercus ilex*. Exposed to the constant sea gales, these are all bent and twisted to the southward by the prevailing wind. *Pinus halapensis* is the only native pine. Smaller and less picturesque than the cultivated species, it yet affords a pleasing prospect from the light green of its soft outspreading tufts of leaves.

The mastic (*Pistacia lentiscus*) in the Balearics, as on the Riviera, forms, as a mere bush, the chief constituent of the underwood. But a very old tree was pointed out to us in Minorca as one of the largest in existence. Its branches covered a space about 30 ft. in diameter, which would make it probably as large as the celebrated tree at Bordighera. In cultivation, instead of clover fields one sees great sheets of the vivid crimson flowers of *Hedysarum coronarium*, the Minorcan forage plant, that has been found well suited to a dry and windy climate.

At Albufera we came to a large fresh water lake with some brackish marsh between it and the sea. Here was abundance of *Leucojum Hernandezii*. We saw it later in Majorca, bue elsewhere it grows only in Sardinia. Near the water's edge were *Salicornia fruticosa* and *Suæda fruticosa*; and, close at hand, *Lavatera cretica*, *Lotus creticus*, *Melilotus messanensis*, *Vicia atropurpurea*, and *Scrophularia ramosissima*. On the shore were also some enormous tamarisks of great age, some of the trunks being 10 to 12 ft. in circumference. One object of this day's excursion was to obtain the *Daphne vellœoides*, Rodrig., abundant on the Isla Colom. Landing on that island from a fisherman's boat, we immediately came upon plenty of the rare and beautiful little shrub, bearing small white flowers low down upon the branches, and very evidently distinct from all other *Daphnes*. This reflection applies to all the Balearic rarities without exception. These endemic species are remarkable for the strikingly decided characters that separate them from their congeners. They, indeed, are "species of the first order." Hardly had our boxes closed upon the *Daphne* twigs than a fine *Arum* was sighted (*A. muscivorum*), its spathe resembling a hog's ear, reddish and very hairy. Here also many bulbs of the great squill (*Urginea scilla*) protruded from the scanty soil in all directions, some as big as a child's head. I learned that the natives are well aware of the medicinal properties of squill, and, moreover, have the practice of keeping a plant upon the staircase of each house as a charm against erysipelas. Then appeared the proprietor of the island, a singular figure. Clad in rags, rope sandals, and a battered straw hat, he was yet monarch of all he surveyed on that lonely rock. He was at pains to explain to us that our lovely *Arum* was a pest in his domain, and how fortunate it was that pigs would eat it, and, indeed, liked it.

On the following day, by the kindness of a local landowner, we were enabled to visit the Barranco de Algendar. Outside Mahon we met a fisherman running at full speed with a heavy basket on his back, and were told that the custom was always to run into town with a catch, sometimes from ten miles out. Our guide remarked further that his countrymen were a hardy race. The island, he said, swept by cruel winds and lacking water, produced barely enough to sustain the inhabitants. They, therefore, could never make full use of their digestive apparatus, and as most diseases, he believed, arose from keeping it too thoroughly employed, good health and long life resulted. The consumption of alcohol, however, threatened trouble, amounting, as it now did, annually to two dollars per head of the population. I fancy that there would be consternation here at home, also, if our use of intoxicants stood at that same figure, but the trouble would be in the national exchequer and not in the temperance councils. But I feel sure that my Minorcan friend did not wish to be taken seriously. A land that can produce three crops of potatoes, and that wherever scratched by a primitive wooden plough is stated to yield half as much again as a similar area would upon the mainland, should not be despised. Any community that adheres to the main principles of temperance, plain living, and abundant exercise will of necessity be hardy and long-lived.

The famous barranco is a fissure or cañon riven through the plateau of Miocene rock that occupies the whole of southern Minorca. Following a sinuous course of six or eight miles from near the centre of the island to the coast, its pinnacled rocks and precipices 200 ft. or 300 ft. high are grandly picturesque. A stream threads the bottom of the gorge, and cliffs alternately close in to make a dark, narrow cleft, through which the water rushes like a mill-race, or open out that the sun may play on the orange gardens and sub-tropical vegetation that flourish at the bottom of the moist ravine, where the air is always soft and warm. Sheltered entirely from the high winds of the uplands above, this is one of the few spots in the island where palms and citrus fruits can reach perfection. *Laurus nobilis* attains the height of 50 ft., and rare plants are frequent along the rocky escarpments. *Pœonia corallina* abounds, a variety differing from our Steep Holms plant by its glabrous follicles. A decoction of the root is much used as a remedy for epilepsy. *Delphinium staphisagria*, also, is plentiful, and *Urtica pilulifera*, the most vicious and venomous of nettles. Other new species met with that day were *Viola stolonifera*, *Lotus tetraphyllus*, *Ononis minutissima*, *Sibthorpia africana*, *Micromeria Rodriguezii*, *M. filiformis*, *Scolopendrium hemionitis*, and *Selaginella denticulata*.

One of the last rambles from Mahon took us westward along the harbour to Villa-Carlos, a suburb founded by the British under the name of George Town. Here stand our soldiers' deserted barracks, untenanted since the occupation.

When an English ship of war visits the place the bluejackets play football in the barrack square under windows from which their compatriots looked out a century and a half ago. Two *Mesembryanthemums* (*crystallinum* and *nodiflorum*) grow here on rocks by the sea, and the curious *Ophrys speculum* that has a mirror-like patch on its labellum. As we were discussing by the roadside a peculiar *Chlora* that seemed new to us, some Menorquins passed, and their remarks were translated by our companion as follows:—"Oh, yes, they are Americans. Most of the medicine that people take nowadays comes from America. They travel here and gather our weeds, and compound the remedies on their return."

Time will not permit me to do more than mention many things that could not escape observation; the dazzling cleanliness of the towns, the courtesy of the people, and their kindly feeling for everything English; and, beyond that, the manifest traces of a still existing influence of the old British occupation.

We left Minorca feeling that we would fain have stayed forty days instead of four; both on account of the intrinsic charm of the place, and the extreme kindness that we received from our Spanish *confrères*.

After a starlight passage on the night of the 27th, the sun rose as we entered Palma Bay, and its rays fell on the capital of Majorca, its great Gothic cathedral, its windmills, and its palms. A more enchanting scene cannot be imagined.

Majorca is the largest and most fertile of the islands. The soil is so rich, the climate so soft, and the natural scenery so beautiful that many endearing names have been bestowed upon it throughout the ages. Approached from the sea, the aspect is more Oriental than European. And the more prominent vegetation—the abundant agaves, prickly pears, caroubs, and fine date palms, as also the dwarf native palmetto, *Chamærops humilis*, which covers many wild rock slopes by the sea, all give an Eastern colouring that harmonises well with the old Moorish buildings, and with the fine mountains that glow in blues and purples beyond the Palma plain. This great plain, protected on the north and east by high ranges, of which the most elevated peaks reach 5,000 feet, is closely cultivated, and produces a long list of vegetables, cereals, and fruits. The attention of a stranger is arrested by the number of wind-sail pumps used for irrigation, and by the universal practice of planting almond and fig trees in the corn fields. The pruning of these fruit trees leaves them open in the centre to the sun, so that the amount of shade thrown in that brilliant climate is insignificant, and may even be beneficial to the crops. As regards other trees, *Quercus ilex* and the small native pine cover large tracts among the mountains, whilst the olive is more abundant in the lower regions, where it appears to have been cultivated from very ancient times. The giant olives of Valdemosa certainly must have been planted by the Moors, possibly 1,000 years ago. Gnarled, twisted, and contorted into fantastic shapes, the heartwood gone ages ago, and the outer shells, though still vigorous and sustaining tall stems, often split into three or four separate trees, now standing several feet apart; these extraordinary trees are more suggestive of a monstrous vegetation imagined by a Doré or a Dante than of symbols of peace and amity. Of native timber in our sense of the term there is none in Majorca. The antiquated and expensive system of cooking by charcoal still prevails throughout the islands, with the result that practically all the large trees have been destroyed by the charcoal burner. A truly lamentable result of the demand for this costly and unwholesome fuel is that the beautiful Balearic box tree (*Buxus balearica*) known only in Majorca, and at one small spot in Spain, a handsomer and more elegant plant than our British species, has been almost completely destroyed. At one time it is said to have formed actual forests among the mountains. Some of the trunks attained the size of a man's body, and furnished wood for cabinet-making; but about the year 1851 they were all cut down and converted into charcoal. At the present time a few small bushes merely are scattered over the cordillera of the north. We ourselves found only two.

I am not going to weary you with a detailed account of excursions in Majorca; but will only note briefly the richness of our gatherings in the few localities we were able to visit. On the shores of Palma Bay and the slopes under Belver Castle grow a large number of rare plants, viz.:—*Silene cerastoides*, *S. rubella*, *Arenaria procumbens*, *Helianthemum umbellatum*, *H. serræ*, *H. salicifolium*, *Fumana Spachii*, *Paronychia argentea*, *Anthyllis cytisoides*, *Ononis breviflora*, *Hedysarum spinosissimum*, *Bulbocastanum incrassatum*, *Linaria triphylla*, *Lavandula dentata*, *Sideritis romana*, *Avena bromoides*, *Lamarkia aurea*, *Ægilops ovata*, and *Æ triariatata*.

Passing across the island to the mountain village of Pollensa, we made our way up the beautiful Val de Ternellas as far as Castel del Rey, and met with many Balearic specialties, viz.:—*Hypericum balearicum*, *Rhamnus balearicus*, *Rubia balearica*, *Smilax balearica*, *Polygala rupestris*, *Alkanna lutea*, *Vincetoxicum nigrum*, and *Chamærops humilis*.

From Pollensa also we reached the charming hamlet of Ariant, lying to the north-east amid a circle of towering rock pinnacles. By the mule-path over the Col we saw *Delphinium pictum*, not yet in flower, and masses of *Phlomis italica*. On the coast beyond Ariant we were successful in finding the most interesting plant of the whole trip, the very latest discovery in the Balearic flora. Six years ago Mr. Clarence Bicknell, on a journey through the mountains with mules strayed from the track in a fog, and so came upon a new species of *Pimpinella* that now bears his name. Prior to our visit no botanist but himself had seen this plant growing, and without his instructions we should not have found the place. Sheltered among huge masses of rock fallen from stupendous precipices above, at a spot where another 1,000 feet of cliff shelves down to the sea below, *Pimpinella Bicknelli* is safe enough from man's interference. Although of robust habit, it may of course be a decadent or dying-out species under the ban of some inexplicable natural limitation, and if so its destiny will be worked out alone amid the solitude and desolation of that grand north coast. My fond hope is that some day I may revisit the spot at a time when the plant shall be in fruit, for that had not developed in April.

For the rest, there might be much to say on the beauty of Miramar, preserved in its pristine wildness by the Austrian Archduke Ludvig Salvator, a distinguished scientist, and the friend of all naturalists, who has there a house filled with Majorcan antiquities and works of art. On his domain we first saw *Hippocrepis balearica*, *Brignolia pastinacæfolia*, and *Allium subvillosum*. And of charming Soller too, the "Garden of the Hesperides," where loaded orange boughs bend to the earth, and the cool evening air is heavy with rich perfume of many flowers. All the fruit trees of Europe seem to flourish side by side in the groves of Soller. There we climbed on to the Sierra to the Col de Lofra, a twelve hours' tramp, to be rewarded with *Brassica balearica*, *Genista cinerea*, *Taraxacum obovatum*, and *Helichrysum Lamarkii*. There, also, we scrambled in the torrent beds of the Couma to get *Helleborus lividus*, *Pastinaca lucida*, *Linaria fragilis*, and *Scutellaria Vigineuxii*, the most delicate of Labiates. Very few folk indeed have ever met with the latter, for which one has to crawl between the boulders into crevices deep and damp. And, apart from botany, it is delightful to walk about the streets and look through widely open doors into the great tiled halls, spotlessly clean, and gay with palms and flowers, and get a glimpse at the far end of oranges and pelargoniums beyond. All the houses, rich or poor, stand wide open all the time, as if the people were desiring to show off their neatness and good taste to every passer-by. Door-bells are unknown and knockers rare. If no one be at home the doors remain open just the same. The friendly, simple people are everywhere good-natured and anxious to please. Not a beggar, tout, or ill-behaved person did we see in that fascinating land, where men and customs change but slowly, and where the people have all the virtues of those who mix but little with the outer world. They do not know the American or British tourist; no preparation has been made for him, and no one speaks his language. Who shall say that his coming is greatly to be desired?

A CONCURRENT CURRICULUM.

BY H. WIPPELL GADD, F.C.S.

One of the objections very generally entertained to the Pharmacy Bill, now before the House of Commons, is due to the clause which, somewhat irrelevantly, seeks to give to the Pharmaceutical Society power by bye-laws to enforce a curriculum upon those who intend to present themselves for the qualifying examination. With the present scarcity of apprentices, and the many drawbacks which in these days militate against the popularity of pharmacy as a calling, it is contended, with much reason, that it would be absurd to insist on anything like a collegiate course for those whose careers will probably be almost entirely commercial. On the other hand, educationalists agree that examination is but the roughest test of efficiency, and that a proper standard can only be attained by a suitable course of training. Moreover, the great majority of students voluntarily submit themselves to some sort of curriculum, although, unfortunately, most of them take their training as they sell their drugs, in a compressed form. But training to be thorough must be prolonged. Concentrated education is as delusive as concentrated food.

It is rightly stipulated that all students shall undergo a three years' apprenticeship or its equivalent. It would be too much to add to this a nine months' curriculum, although the subjects, a knowledge of which is demanded, require a full academic year for their proper teaching. The alternative would seem to be to take the two courses concurrently. Let the curriculum, voluntary or compulsory, be spread over the period of apprenticeship, so that theoretical knowledge may be illustrated by practical experience, and routine work explained by a study of scientific causes.

It may be said that this is done already, as apprentices attend the evening science classes held in every large provincial town. But these are too often followed in a very desultory fashion, the applicability of the sciences to pharmacy not being indicated by the teachers, nor readily appreciated by the students. Moreover, the modern youth objects not unnaturally to give two or three hours to close study after spending nine or ten in commercial pursuits; nor is it desirable for health's sake that, having inhaled the aroma of asafetida, valerian, and the like during the day, he should spend the evening in an atmosphere heavy with sulphuretted hydrogen.

The exigencies of modern commerce prevent most masters from imparting much theoretical knowledge to their pupils, and apprenticeship should not, therefore, now be looked upon as full-time employment. If a curriculum is to be followed during apprenticeship, a certain amount of leisure must be allowed, and an ideal course, with the necessary private study, would absorb practically half the student's working time. Throughout the country there are now established university and other colleges, technical schools, and the like, and many of these have already arranged pharmaceutical courses, whilst others, no doubt, would do so if a demand arose.

A typical course would be somewhat as follows:—

Three Years' Course.

First Year:—

Chemistry	2 hours per week.
Practical Chemistry	3 hours per week.
Materia Medica	2 hours per week.
Pharmacy	2 hours per week.
Physics	1 hour per week.
Total	10

Second Year:—

Chemistry	2 hours per week.
Practical Chemistry	3 hours per week.
Botany	1 hour per week.
Practical Botany	2 hours per week.
Materia Medica	1 hour per week.
Pharmacy	1 hour per week.
Total	10

Third Year:—

Chemistry	2 hours per week.
Practical Chemistry	3 hours per week.
Botany	1 hour per week.
Practical Botany	2 hours per week.
Materia Medica	1 hour per week.
Pharmacy	1 hour per week.
Total	10

Such a course can be taken at the University College, Bristol; the Municipal Technical College, Bradford; the Municipal Technical College, Derby; the Royal Albert Memorial College, Exeter; the University College, Nottingham; the University College, Reading; the University College, Sheffield; and Owens College, Manchester; and doubtless could be arranged at many other public and private colleges and schools. The arrangements for the classes of course differ locally; but in most places they can be taken either in the day or evening, as best suits the student's convenience. The expense of such a curriculum would not be greater than a full-time course taken subsequent to apprenticeship.

NOTE ON THE VOLUMETRIC USE OF FEHLING'S SOLUTION.

BY E. F. HARRISON.

The volumetric determination of reducing sugars by means of Fehling's solution does not usually give more than approximate results, on account of the difficulty of sharply observing the end point of the reaction. The chief indicators that have been employed are potassium ferrocyanide, and hydrobromic acid; both these, however, require the filtration of small quantities of the liquid before applying the test, which leaves much to be desired in respect of accuracy. In Pavy's modification the end-point is shown by the final disappearance of colour from the liquid, and the same may be attained by the use of potassium cyanide as suggested by Gerrard.

I have had occasion to employ Fehling's solution somewhat extensively in quantitative work, and have not found any of these methods quite satisfactory. It was suggested to me by one of the assistants engaged in the work, Mr. A. A. Kelly, that we might utilise the action of cupric salts in liberating iodine from iodide, and an indicator based on this action has proved a great improvement over those just mentioned. The indicator is prepared by boiling 0·05 Gm. of starch with a few C.c. of water, adding 10 Gm. of potassium iodide and diluting to

100 C.c. These quantities need not of course be exactly adhered to, but too much starch or too little iodide lessens the delicacy of the test; the solution should be prepared as required, and not used after it has been made more than two or three hours. In use about 0·5 or 1 C.c. of this solution is taken, acidified with about five or ten drops of acetic acid, and one drop or more of the titration liquid added; the latter need not be filtered. As long as unreduced copper is present, a colour is produced, varying from red to blue, and of greater or less intensity, according as the end-point is far off or near. The production of no colour marks the end of the reaction.

This indicator gives a readily observed colour with one drop of a solution of copper sulphate of strength 1 in 20,000, and by its use titration of Fehling's solution with a suitable sugar solution can be made as accurate as most other volumetric operations. After very little practice one titration is sufficient for moderately accurate results, but greater exactness is of course obtained by repeating, and at once running in the sugar solution almost up to the required amount before testing.

COMPARATIVE ANATOMY OF THE BARKS OF THE SALICACEÆ.—Part I.

BY PIERRE ÉLIE FÉLIX PERRÉDÈS, B.SC., F.L.S.
Pharmaceutical Chemist.

Introductory.

In a paper presented to this Conference last year by Dr. H. A. D. Jowett and Mr. C. E. Potter, entitled "Variations in the Occurrence of Salicin and Salinigrin in Different Willow and Poplar Barks" ('Y.-B.P,' 1902, p. 483), they showed that differences of species were not the only factors to be considered in ascertaining the probable yield of glucoside by these barks. The factor of species, however, is one of considerable importance, as instanced, for example, by the fact that *Salix discolor* yields salinigrin instead of salicin, while manufacturers of the latter state that *S. viminalis* never yields any glucoside. It is well known that the accurate determination of species in the Salicaceæ, more especially in the willows, is at times a matter of great difficulty, even with complete herbarium specimens. The addition, if possible, of diagnostic characters gleaned from a study of the anatomy of their barks cannot fail, therefore, to be of some value. When we add to this the fact that the manufacturer or the pharmacist seldom has anything but the bark itself to guide him in its identification, the importance of such characters becomes manifest.

In view of the complexity and length of the study here undertaken, it has been found necessary to place some limitations on its treatment from the comparative standpoint. It will, therefore, be well to state at the outset that, in seeking for characters which may serve to differentiate the barks, that stage (with one exception) has been chosen in which the epidermis has been thrown off, but before internal periderms have begun to form. Furthermore, only transverse sections have been considered, although a large number of radial and tangential sections has been examined, in order to check the accuracy of the interpretation of transverse sections. In considering the general features of the group, I have also thought it desirable to record some observations on the younger stages, but in the detailed examination the limits set forth above have been adhered to.

General.

The observations hitherto recorded consist, for the most part, of structural descriptions of the barks of a few species (of *Salix* mostly) and of the histological details of portions (especially the epidermis and cork of the willows) of a larger number of them. For the comparative study of a more extensive series of barks we are indebted to von Höhnel, who examined eleven species of *Salix*, and to Moeller, who described four species of *Populus* and two of *Salix* in some detail, and upon them based an account of the anatomical features of the whole group. As frequent reference will be made to the statements of these various investigators, a list of such of their works as have been consulted is here appended:—

Dr. Franz R. Höhnel, 'Die Gerberinden,' pp. 87-95. Berlin, 1880. Hereinafter referred to as "von Höhnel."

Dr. Joseph Moeller, 'Anatomie der Baumrinden,' pp. 89-95. Berlin, 1882. This contains citations of the earlier literature. Hereinafter referred to as "Moeller."

Dr. A. de Bary, 'Comparative Anatomy of the Phanerograms and Ferns.' Bower and Scott's translation. Oxford, 1884. Also contains citations of the earlier literature. Hereinafter referred to as "de Bary."

H. Douliot, "Recherches sur le Periderme," in *Annales des Sciences naturelles*, septième série, tome dixième, p. 330. Paris, 1889. Hereinafter referred to as "Douliot."

Dr. J. E. Weiss, "Beiträge zur Kenntnis der Korkbildung," in *Bayerischen Botanischen Gesellschaft zu Regensburg*, p. 52. Regensburg, 1890. Hereinafter referred to as "Weiss."

Hermann Ross, "Contribuzioni alla Conoscenza del Periderma," in *Malpighia*, Vol. IV., p. 104. Genova, 1890-91. Hereinafter referred to as "Ross."

MM. G. Planchon et E. Collin, 'Les Drogues Simples d'Origine Végétale,' tome premier, pp. 254-256. Paris, 1895. Hereinafter referred to as "Planchon and Collin."

Dr. Hans Solereder, 'Systematische Anatomie der Dicotyledonen,' p. 896-898. Stuttgart, 1899. Hereinafter referred to as "Solereder."

In the general description of the anatomical features of the barks of the Salicaceæ, the tissues will first be considered in order, beginning at the periphery, and such of these features as are considered to be of importance in differentiating the two genera of which the order consists will then be enumerated.

(1) The Epidermis and the Tissues Derived from the Phellogen.

The epidermis, which will be only briefly referred to here, consists of small cells which are nearly cubical or slightly elongated tangentially in transverse section, and which possess thickened and cuticularised outer walls. Tangential elongation is, on the whole, more frequent in the poplars (*ep.*, Figs. 1, 2, 3, and 6) than in the willows (*ep.*, Figs. 10, 11, 13 and 14), whereas the thickening of the outer wall is, as a rule, more pronounced in the willows than in the poplars; the former, however, differ among themselves to some extent in this respect—compare, for instance, Fig. 10 (*S. alba*) with Figs. 11 (*S. wardi*), and 13 or 14 (*S. viminalis*). The epidermis may be glabrous, or nearly so (*P. angustifolia*, *S. pentandra*), or it may be provided with hairs (*P. alba*, *S. caprea*). It is interesting to note, in this connection, that the bud-scales of *P. fremonti* possess hairs which are stained pink with phloroglucin and hydrochloric acid when cut or broken, but are unaffected by that reagent when intact.

The origin of the periderm has been repeatedly investigated by various workers in a number of species of *Populus* and *Salix*, and the main conclusions are satisfactorily established, but in matters of detail there are some discrepancies which will now be considered.

In *Salix* the periderm originates in the epidermis itself (Figs. 10, 13, and 14). No exceptions to this rule appear to have been recorded, and I have not observed any. With regard to the products of the activity of the phellogen, the same unanimity does not exist. According to de Bary (p. 549), each initial epidermal cell, in most investigated species of *Salix*, produces in the first year *one* cork cell externally, and *one* phellodermal cell internally; between the two there is a central meristematic cell, with its wall thickened on the outside, and immediately becoming cuticularised on the external thickened surface. In this central meristematic cell the same division and differentiation as in the initial epidermal cell is repeated in the second year, and the same process takes place in each succeeding year, starting from the meristematic cell for the time being, until the formation of outer bark begins at a later period. Von Höhnel (p. 91) confirms the above as far as the configuration of the cork cells is concerned. Weiss also confirms this point, but in the six species of *Salix* (these include *S. caprea* and *S. alba*) which he investigated he found that, almost without exception, a phelloderm cell was formed by the first tangential wall, and that, by the second and several succeeding ones, cork cells were cut off on the outer side. The observations of Ross coincide, on the whole, with those of de Bary, but he contends that it is the inner wall of the outermost cell resulting from the division of the initial epidermal cell (*i.e.*, the one which bears the cuticle externally) which becomes thickened, and not the outer wall of the central meristematic cell; and he emphasises his contention by stating that this is the only case known in which the suberised lamella is more strongly developed on the inner wall than on the other walls of a cell. He also introduces another slight variation in asserting that there may be two layers of periderm or cork ("phellem") formed annually. Moeller (p. 89) makes no reference to the presence of phelloderm, but confirms the formation of a single row of cork cells annually; he, however, specifically modifies the statement that the outer walls of each layer of cells become thickened, and holds that this may only occur at intervals, as instanced by *S. fragilis*. Finally, Douliot asserts that no phelloderm is formed (in *S. caprea*)—during the first two years, at all events—and that the quantity of cork produced is dependent on the amount of illumination which the plant receives, being abundant in the light, but scanty in the shade. It would appear, further, that, of the rows of cork formed during the course of one year, only the last formed becomes thickened in the external portion of its cells.

My own observations, which are still incomplete, but which I hope to supplement in Part II., dealing more particularly with the willows, would lead me to conclude that, in the large majority of cases, the observations recorded by de Bary (waiving, for the present, the rather fine issue raised by Ross as to the localisation of the region of thickening) hold good, with the exception, perhaps, of the amount of phelloderm formed annually. It is only fair to state, however, that the observations which I have so far been able to make on the amount of phelloderm formed annually are hardly sufficient to justify an expression of opinion one way or the other, inasmuch as these phelloderm cells are subject to tangential elongation soon after they are formed, and ultimately become excessively drawn out, so that any indication of their mode of origin is entirely obliterated. The exceptions to the rule that a phelloderm cell is formed by the first tangential wall do not seem to be so rare as Weiss has supposed (see Figs. 13 and 14), but this will be discussed later. The presence of intervening rows of thin-walled cork cells between those which have thickened outer walls appears, on the other hand, to be an exceptional feature; the examples of it which I have had under my own observation occur locally, a fact which would seem to lend support to Douliot's conclusions. But in the one case of *S. wardi* the exception becomes the rule (Fig. 11), and in the second year the formation of internal periderms begins (Fig. 9), these frequently going so far as to enclose groups of the pericyclic fibres. The outer bark in this instance (*k*, Fig. 9) includes many layers of thin-walled cells which are manifestly due to the activity of a phellogen.

From what has been said above it will be seen that the thickened cells of the periderm form a characteristic feature of the willow barks. Their thickened outer walls bulge outwards, presenting a convex surface externally and a concave one internally. This is especially well seen in a radial section; they are always suberised, but not lignified. The following differences in the characters exhibited by the cells of the periderm of different species appear to be of diagnostic value:—

(1) Size of the cells, especially as measured in a tangential direction. Thus, the cells of the periderm in the bark of *S. fluviatilis* are much more delicate than those of *S. purpurea* (Fig. 12), and seldom attain more than half the size of the latter in a tangential direction.

(2) Amount of thickening which the outer walls undergo. Thus, in *S. viminalis* (Fig. 15) and *S. triandra* these walls are relatively thin, while in *S. purpurea* (Fig. 12) and in the majority of willows they are much thicker.

(3) The shape of the thickenings. Thus, in *S. missouriensis* and *S. viridis* (compare, also, Fig. 12) the outer surface is usually verrucose or mammillated, while in *S. nigra* and *S. viminalis* (Fig. 15) it is nearly even. It must be remembered, however, that the walls in the outer rows may become more or less straightened out by tangential extension. The factor considered below is undoubtedly of some importance also in this connection.

(4) The number of cork cells adhering to the bark. This factor, as one would expect, is subject to considerable variation, but the striking contrast of a case like *S. viridis*, which sometimes exhibits as many as seven rows of adherent cork cells, with *S. nigra*, which rarely possesses more than two rows, cannot fail to be of some value. The causes which appear to underlie this factor of adherence or non-adherence of the periderm layers are of great interest, but a discussion of them at this stage would take us beyond the limits of this part of the subject; they will accordingly be treated of in Part II.

The colour of the cork membranes is, according to de Bary (p. 112), distinctive also, these being colourless in some species (*S. viminalis*, *S. aurita*, and *S. caprea*) and yellow in others (*S. alba*, *S. purpurea*, and *S. fragilis*). I must confess that I have not been able to corroborate this satisfactorily, owing probably to the fact that these cells frequently contain varnish-like golden-brown colouring matter, which gives a fictitious tint to their walls. It is possible, however, that these differences may become apparent after treatment with a suitable clearing reagent.

In *Populus* the periderm originates in the layer of cells immediately below the epidermis (*k.*, Fig. 2). It is only in *P. fremonti* that I have noticed any departure from this rule (see Fig. 6, where the periderm has evidently originated in the third hypodermal layer), and even there it is of the nature of an irregularity, inasmuch as the normal condition is uniformly exhibited by the large majority of sections. Phelloderm is only formed after one or more rows of cork cells have been cut off. In Fig. 3 the first four rows of cells below the epidermis are cork cells; the narrow fifth row is, ostensibly, the meristematic layer or phellogen, in that it contains protoplasmic contents, and is limited by extremely thin tangential walls, while two cells on the left of the figure have just been cut off from it externally; the sixth row is the phelloderm. In *P. fremonti* the layer which corresponds in position to the phellogen in other poplars always appears to convert itself into a layer of stone cells at the end of the season (*sc. l*, Fig. 6). The succeeding season's periderm, which originates from the phelloderm, if such it be, is terminated in the same way by a similar layer of stone cells, so that the periderm of an older piece of bark exhibits a more or less concentric series of sclerenchymatous layers (*sc. l*, Fig. 7). The outer layers of the periderm, however, show a strong tendency to exfoliate, and the last-formed layer of stone cells is sometimes exposed.

The cork cells of young poplar twigs are nearly isodiametric, or somewhat elongated radially (*k.*, Figs. 2, 3, and 6), in older barks they usually present the customary flattened and tangentially elongated outline (*k.*, Figs. 5 and 8); the extent to which tangential elongation occurs may vary somewhat, however, even in the same section, and is generally least pronounced where the production of cork is vigorous. These periderms consist, with few exceptions, of thin-walled suberised cells: in *P. deltoides* and *P. pyramidalis* I have occasionally observed tangential bands of thickened cells (*sc.*, Figs. 8) and more examples of this could, doubtless, be found, especially in cases where the periderm is copiously developed; but it is only in *P. fremonti* that the regular formation of bands of thickened cells becomes (apparently) a fixed and constant feature.[1] In all these cases the thickened portions of such cells are, without exception, lignified, while the region of thickening extends uniformly around the whole cell; the latter point is, nevertheless, subject to many fluctuations. The amount of phelloderm formed in *Populus* is always slight. With the one exception of *P. fremonti*, the periderms of the poplars do not afford any characters of much diagnostic value, although the relative thicknesses of the periderms as a whole, in different species, may be of some importance in extreme cases: thus the covering of periderm in *P. tremuloides* and *P. grandidentata* (Figs. 28 and 30) is almost invariably thin, while in *P. angustifolia* and *P. pyramidalis* (Figs. 34 and 36) it is thick, sometimes excessively so.

(2) Cortex.

The cortex in both genera exhibits a collenchymatous outer portion. This may vary, within certain limits, in the same species, it being frequently the case, for instance, that both the number of layers and the amount of thickening which they have undergone are relatively greater in the younger stages than in the older ones; any differences in this direction, therefore, must be interpreted with caution in comparing the barks of different species. With these reservations, then, it may be stated broadly that collenchyma, though not copiously produced, is more consistently and regularly present in the willows than in the poplars; among the latter its characters are not constant enough to be made use of, although some species show a stronger tendency towards collenchyma than others: thus the larger portion of the narrow cortex of *P. alba* is usually strongly collenchymatous, whereas in *P. fremonti* there appears to be little collenchyma at any stage. The internal portion of the cortex consists of thin-walled cortical parenchyma of the usual type. Stone cells or groups of stone cells (*sc.*, Figs. 3, 5, and 24) are always to be found in the cortex of poplars—Moeller (p. 90) cites *P. nigra* as an exception, but this is incorrect—whereas stone cells have only been recorded from three species of *Salix*, viz.: *S. alba*, *S. fragilis* (von Höhnel, p. 93), and *S. caprea* (Moeller, p. 90); von Höhnel specifically states that they are absent from *S. caprea* (p. 93). I have so far been unable to find them in the specimens of *S. alba* and *S. caprea* which I have examined, but it is very probable that they are present in the former species, seeing that they are common in the var. *vitellina*, where they appear to originate in the pericycle as well. In *S. fragilis* they are few and far between, and in the majority of sections they are not shown; it may be owing to this factor that an apparent contradiction occurs in some of Moeller's statements—he states on p. 95 that small groups of stone cells sometimes occur in the primary bark of *S. fragilis*, whereas on p. 90 he just as unequivocally maintains that *S. fragilis* forms no stone cells.[2] In all the other willow barks which I have examined, viz.: those of *S. aurita* × *caprea*, *S. babylonica*, L., *S. cordata*, Muhl., *S. discolor*, Muhl., *S. fluviatilis*, Nuttall, *S. fragilis*, L., *S. hippophaifolia*, Thuill., *S. missouriensis*, Bebb, *S. nigra*, Marsh., *S. nigricans*, Sm., *S. pentandra*, L., *S. phylicifolia*, L., *S. purpurea*, L., *S. purpurea* var. *minor*, *S. rubra*, Huds., *S. triandra*, L., *S. viminalis*, L., *S. viridis*, Fries., and *S. wardi*, Bebb, I have so far failed to detect any stone cells in the cortex (or in any other part of the bark). In *Populus* the quantity and grouping of the stone cells can be profitably utilised in differentiating the barks—their shape and size seem to possess but little diagnostic value—while the dimensions of the whole cortex are also of some importance, as will be shown presently. Wherever stone cells occur (whether in *Populus* or in *Salix*) they are always encrusted with prismatic crystals of calcium oxalate (*cryst.*, Figs. 3, 5, and 24). Sacs containing cluster crystals of calcium oxalate invariably occur in the cortex of both genera, but they are much more abundant in some species than in others; thus, in *S. viminalis* and *P. alba* (Fig. 29) they occur but sparingly, while in *S. alba* and *P. nigra* (Fig. 37) they are abundant. I have found starch present, in very small grains, in the cortex of some willows and poplars and absent in others, but, in view of the fact that the barks were collected at widely varying periods of the year, this point has not been pursued any further. *S. fragilis* and *P. canescens* are examples of barks in which abundant starch grains were seen, and *S. purpurea* and *P. angustifolia*, in which they were absent. It is evident, however, that the statement made by Moeller in his atlas[3] that willow bark never contains starch, requires modification.

(3) The Region of the Pericycle.

Dealing first with the pericyclic fibre-groups, we have Moeller's assertion (p. 91) that their fibres are remarkably small in comparison with those of the secondary bast. This observation appears to hold good in the case of the poplars, with few exceptions; actual measurement tends to show, however, that the difference is not, in many cases, as great as one might be led to believe. Figs. 16 and 17 (*b.f.*) exhibit the greatest extremes that I have seen (*P. tremuloides*). But in the twenty-three willows examined and enumerated above I have failed to confirm Moeller's statement in a single case: in the large majority of instances there is no appreciable difference in their size, but the fibres of the pericycle are slightly larger, if anything; in the few cases where there is a noticeable, although slight, difference—as in *S. missouriensis* and *S. nigricans*, for example—the advantage is on the side of the pericyclic fibres. As it is important to be able to distinguish the pericyclic fibres from those of the secondary bast, it will be necessary to consider both of them here, although the consideration of the bast fibres belongs more properly to the next section. Both are usually polygonal in transverse section, but the pericyclic fibres frequently possess a tendency to become rounded at the corners and elongated in a tangential direction. In *Populus* the fibres of the bast never exhibit sharp striæ, whereas those of the pericycle generally do—compare Fig. 16 with Figs. 17, 19, 20, etc., on this point: the finer concentric lines which I have drawn in Fig. 18 are somewhat hypothetical, and were introduced mainly as shading; finding that they might tend to mislead, I have omitted them from all subsequent sketches. In *Salix*, in the large majority of cases, both sets of fibres exhibit very distinct striations; so very sharp, indeed, are these in many instances that they present the appearance of deep grooves formed by an etching needle. The striations are frequently finer and more numerous in the pericyclic than in the bast fibres, but exceptions occur which will be considered in detail later on. In both genera the fibres of the pericycle, with few exceptions, react much less strongly with phloroglucin and hydrochloric acid than those of the bast—a feature which usually affords a ready means of identification. The "middle lamella" is everywhere the most lignified part of the fibres, and is uniformly relatively thin in the bast fibres of the poplars, but subject to variations elsewhere. The groups of fibres in the bast are beset with sacs containing prismatic crystals of calcium oxalate, whereas these sacs usually occur but sparingly in connection with the groups of the pericycle. This factor is, no doubt, responsible to some extent for the darker appearance which a fibrous group of the bast presents after treatment with phloroglucin and hydrochloric acid, inasmuch as the crystals in the sacs are enclosed in an envelope—said by Pfitzer (de Bary, p. 140) and by Moeller (p. 92) to consist of cellulose (!)—which is very deeply stained by that reagent. By means of a combination of the above factors it is nearly always possible to distinguish the pericyclic fibres from those of the bast, for although one or more of these factors may not hold good in individual cases, the residue of them is usually ample to settle the question.

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[1] It is, of course, possible that this peculiarity may be dependent upon ecological factors, and as I have only examined specimens from one locality (San Bernardino, S. California), the particulars of the latter, which were very kindly furnished by Mr. S. B. Parish, of S. Bernardino, Cal., are herewith appended:—"Specimens from a tree about 2½ ft. in diameter, about 40 ft. high, and not over thirty years old. Growing in loamy soil which is naturally somewhat damp, and contains a noticeable percentage of alkali, as indicated by the growth of *Distichlis maritima* and *Baccharis emoryi*."

[2] It is also possible that a transposition of names may have occurred on one of the pages, for it is further stated on p. 94 that sclerotised parenchymatous cells are entirely wanting in the bark of *S. caprea*.

[3] 'Pharmacognostischer Atlas,' von Dr. J. Moeller, p. 282. Berlin, 1892.

The groups of pericyclic fibres may or may not become broken up as the bark increases in thickness, but in the poplars, at all events, their behaviour is too erratic to be of much diagnostic value (compare Figs. 37 and 38, both representing *P. nigra*). Where extensive tangential bands of stone cells arise in the pericycle, the splitting apart of the fibrous groups is nevertheless usually more pronounced than in those cases where such bands are feebly developed or not at all (compare, for example, Figs. 28 and 31 with Figs. 32 and 38). Large groups of pericyclic fibres are also more commonly to be found where the bast rays are wide and sharply delimited, as in *S. cordata* and *P. nigra*. As has already been hinted at above, stone cells occur in the pericycle; the extent to which they are developed and the nature of their distribution are factors of great importance in classifying the poplar barks. The fact that stone cells occur in the pericyclic region of *S. alba* var. *vitellina* has already been mentioned above; I have never seen stone cells internally to this in either of the two willows in which they were found by me.

In those parts where neither pericyclic fibres nor bands of stone cells occur it is not usually possible to distinguish the pericyclic region from the cortex on the one hand, or from the outer part of the medullary rays on the other; but barks in which the parenchymatous cells generally are filled with dense contents, commonly exhibit a connecting tangential band of cells, with more scanty contents than the others, between the pericyclic fibre groups. It is convenient in such a case to look upon these clearer bands as part of the pericycle.

(4) The Bast.

The separation of the bast into wedge-shaped bast rays and intervening widened medullary rays is very well shown in some barks (*S. cordata*, *S nigra*, *P. tremula*, and *P. fremonti*, for example), but in others the very reverse is the case (*S. purpurea*, *S. alba*, *P. canescens*, *P. pyramidalis*). It is interesting to note that de Bary (p. 536) took the willows—or, more exactly, "*S. fragilis* and allies"—as a type of the latter case, and ascribed the condition of affairs to uniform dilatation of the parenchyma. He states that if attention be directed to cases of extreme difference, it is found that in the one case[4] (the one just mentioned) dilatation of the entire parenchyma of the bast takes place in an approximately uniform proportion, as each annular zone becomes shifted outwards. In all the radial bands, and thus most clearly in the medullary rays of every degree, the parenchymatous cells increase uniformly, and quite gradually in breadth, in the centrifugal direction. The intermediate non-equivalent tissues, which do not grow with them, especially sieve tubes and bast fibres, thus become uniformly removed one from another, and the more so the further they are from the cambium. In the other extreme case the dilatation is unequal in the various bands of the transverse section; it amounts to little or nothing in the bundles, and is most active, either in all the parenchymatous (= "medullary") rays or in some of them. Between the lateral limits of these dilated rays the arrangement and lateral distance from one another of all elements of the tissues remains approximately the same. Details are then given of *Tilia*, which is a typical case of this category, and which exhibits the resulting severance of the bast into wedge-shaped bast rays and medullary rays very distinctly; *Salix cordata*, however, would have illustrated the point almost as well, although the inner portions of the medullary rays are, unlike those of *Tilia*, only one cell thick, and no more. In addition to the above factors, displacement of the tissues, by stone cells in the case of some species of *Populus*, and by the distension of scattered parenchymatous cells in the case of *S. babylonica*, appears to play a part of some importance in preventing the formation of clearly defined wedge-shaped bast rays. Stone cells are invariably present in the bast of *Populus*; this has been denied by Moeller for *P. nigra* (pp. 90 and 93), but all the sections of the latter which I have examined contain them. Stone cells are always absent from the bast of *Salix*. The size and shape of the stone cells usually show differences as great among themselves in any one bark as they do from one bark to the other, so that they possess little diagnostic importance. *P. tremula*, however, exhibits some mature stone cells, which possess thinner walls than in the other species; but even here the majority of them are furnished with very thick walls (*sc.*, Figs. 18 and 23), as in the other species (*sc.*, Figs. 17, 19, 20, 23, 25); their walls are always distinctly striated. In the larger cells these walls are frequently traversed by numerous branching pits (similar to those shown in the group of cortical sclerenchyma on the right of Fig. 24), while they are less abundant in the smaller ones; the converse, however, or anything between the two, is by no means rare (compare figures on Plates III. and IV.).

The amount and mode of grouping of these elements are, in contradistinction to their individual features, of the very greatest importance for comparative purposes, and will be fully dealt with below.

The medullary rays in both genera always consist of a single row of cells in the internal portion of the bark. In certain species of *Salix* (*S. alba*, *S. pentandra*) some of their cells are swollen out like bladders; this never seems to occur in the poplars. The cells of the medullary rays in this region usually show the customary radial elongation, and can thereby be readily identified (*S. nigra*, *P. alba*), but in some cases this is so little accentuated that their identification is rendered more difficult (*S. nigricans*, *P. pyramidalis*). Toward the exterior the medullary rays expand in very varying degrees, and become many cells wide in the form with wedge-shaped bast rays. It is in these widened portions that stone cells are most constantly to be found in the poplars; it is to be noted in this connection that Moeller (p. 90) commits himself to the statement that the medullary rays do not become sclerotic in their passage through the clefts of the fibre plates.[5] It is reasonable to assume that the spaces between the fibre groups in the widened portions of the medullary rays are excluded in the definition, for Moeller's observation would otherwise be palpably inaccurate. Taking it for granted, therefore, that only the unexpanded portions of the medullary rays are referred to, it must be admitted that, even then, this contention is not justified by the facts, as Figs. 18 (*P. tremula*), 19, and 20 (*P. angustifolia*) clearly show. In the majority of instances, however, the medullary rays do not become sclerotised when in the single-rowed condition. It must be specially emphasised that nothing of all this applies to the willows, inasmuch as the latter never become sclerotised in any part whatsoever of the bast. Moeller's further statement that the medullary rays never take part in covering the bundles of fibres with crystals is also not quite correct, for I have occasionally observed prismatic crystals in this position in a number of species of *Populus* and *Salix* (see *cryst.*, Figs. 18, 19, 21, and 22).

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[4] See also the figure in Planchon and Collin, p. 255.

With regard to the occurrence of calcium oxalate in other parts of the medullary rays, Moeller states that the medullary rays, generally, very seldom contain calcium oxalate. This holds good in the main, as far as the single-rowed parts of the rays are concerned, but clusters are sometimes to be found in them (*S. caprea*, *P. tremula*); but, as soon as the medullary rays begin to divide, cluster crystals are, as a rule, more abundant in them than in any other portion of the bark (*S. caprea*, *S. cordata*, *P. tremula*, *P. fremonti*, compare also Figs. 28 to 39). As Moeller only recognises widenings of the medullary rays in one case, viz., that of *P. tremula*, it is not strange that he should omit to record the existence of calcium oxalate in them. Some of these expansions in *P. tremula* are, as Moeller states, of fusiform outline in transverse section; very good examples of these are also to be found in *P. alba* (Fig. 29), and occasionally in *P. grandidentata*. Such expansions are evidently only irregularities in the formation of the orthodox wedge-shaped bast rays, as may be seen by an inspection of a series of sections. Prismatic crystals are rare in the medullary rays (or any other part of the bark) unless accompanied by sclerenchyma of some kind. If an apparently isolated sac containing prismatic crystals be found, it is almost sure to prove, on further investigation, to consist of the borders of a mass of stone cells, or to be the prelude to the formation of sclerenchyma. *P. tremula*, which contains enormous sclerotic masses here and there (Fig. 32), illustrates the first point very well, as may be seen from Fig. 23, representing part of a medullary ray. In the upper portion of the crystal-containing area, shown in the figure, the stone cells, although omitted from the sketch, are easily seen in the actual section by focussing down, while one of the stone cells is shown at the bottom of the figure, projecting beyond the others. In the bast of the willows prismatic crystals are accordingly very rare, except in connection with the fibre-groups; such crystals, however, are present, according to von Höhnel (p. 92), in the bast of *S. amygdalina*, but I have not so far examined the bark of this species.

The bast fibres occur in groups of varying thicknesses, according to the species, and are usually arranged in tangential bands, interrupted by the medullary rays, and alternating with tangential bands of soft bast, which are likewise interrupted by the medullary rays. The tangential banding of the bast fibre groups in the willows rarely exhibits any serious irregularity, except suppression of groups. According to de Bary p. 527), a regular alternation of concentric zones of fibres and soft bast, of definite average breadth, takes place, within certain limits, in species of *Salix*. This appears to be correct in the majority of species, but in *S. aurita* × *Caprea*, *S. caprea*, *S. babylonica*, *S. fragilis*, *S. discolor*, *S. cordata*, *S. nigricans*, and, to a less extent, in *S. rubra*, I have observed bands of soft bast, which occur at apparently regular intervals, and are usually more than twice as thick as the others; in these wider bands sieve tissue is very copiously developed. In *Populus* I have not observed any peculiarities of this kind, but any deficiencies in this direction are more than amply compensated by decided eccentricities in other directions, and the irregularities which the configuration and distribution of the bast-fibre groups exhibit in such species of *P. tremula* and *P. fremonti* far exceed anything occurring in the willows. In both genera the thickness of the fibre-groups and the extent to which they are suppressed are characters of good differential value (compare, for instance, *Salix viridis* and *P. nigra*, which have thin and frequently distant fibre groups, with *S. viminalis* and *P. tremuloides*, where the fibre groups are thick and rarely suppressed).

The soft bast is composed of bast parenchyma and sieve-tissue. The sieve tubes can be generally distinguished from the bast parenchyma by their larger size, their more scanty contents, their sharper angles, their tendency to collapse, and by the presence of sieve plates (*s.p.*, Fig. 26), which are compound and situated on very oblique walls (as may be readily verified in longitudinal section), so that their cross section—sometimes slightly oblique—is always seen in a transverse section of the bark, usually between two of the tangentially juxtaposed tubes. In a few cases, however, the difference in size between them and the parenchymatous cells is negligible (*P. fremonti*, *S. alba*), while in *S. babylonica* the very much distended parenchymatous cells, which are distributed throughout the parenchymatous portions of the bark, exceed the sieve-tubes in size. There are other individual variations, especially in the poplars, but these will be considered later.

Crystal sacs occur in the soft bast of all the Salicaceæ, but the amount present is very different according to the species; thus in *S. fragilis* and *P. pyramidalis* it is extremely abundant, whereas it is scarce in *P. alba*, and almost absent in *S. triandra*. These sacs contain cluster crystals, the presence of prismatic crystals being governed by the factors previously mentioned.[6]

Summarising now the points which are likely to be of use in distinguishing the poplar barks from those of the willows, we find that:—(1) The periderm of the willows is sharply differentiated from that of the poplars by the presence in the former, and by the absence in the latter, of cells which are thickened on the outer walls only, these thickened portions being suberised, but not lignified. (2) Stone cells are invariably present in the bast of the poplars, but always absent from that of the willows. The pericyclic fibres in the poplars are, with a few exceptions, smaller than those of the bast. In the willows this is never the case. The bast fibres in *Populus* are also generally distinguished from those of *Salix* by their larger size and absence of evident striation, but neither of these characters affords such valuable evidence of identity as those mentioned above.

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[5] "Auch werden sie bei ihrem Durchtritt zwischen den Spalten der Faserplatten nicht sklerotisch."

[6] The observation made by de Bary (p. 530), but stated by him to require re-investigation, that both the cluster crystals and the prismatic crystals in *Salix* occur in the bundles exclusively, or to much the greater extent, is certainly not accurate in a large number of cases, as far as the cluster crystals are concerned, but this will be considered in greater detail later.

Systematic Examination of the Poplar Barks.

In this section the salient features of the barks examined, arranged in what is considered to be a fairly natural series, will first be described *seriatim*, and will be preceded, in each case, by a statement of the locality and date of collection (as far as is known), and of the authority responsible for the determination. The whole account will then be concluded by the construction of a key for the whole series.

Before proceeding to the descriptions, special attention is directed to the following conventional signs at the head of Plate I., as these are absolutely essential for a correct understanding of the figures:—

Cork or periderm is represented by crossed tangential and radial lines, the cortex and outer parts of medullary rays (and incidentally, the parenchymatous portions of the pericycle) by a blank space, the pericyclic fibres by crossed diagonal lines, the bast fibres by slanted lines, the sieve-tissue and bast parenchyma by dots, the medullary rays by continuous radial or diverging dotted lines, the stone cells by black areas, and the cluster crystals of calcium oxalate by crosses.

Populus Tremuloides, Michx. (Fig. 28).—*Locality*, woods by Cascadilla Creek, just south of Dwyer's Dam, Ithaca, N.Y.; collected on March 1, 1902; determined by Professor W. W. Rowlee, Cornell University, Ithaca, N.Y. Cork thin. Cortex rather narrow, with an occasional, usually small, group (up to 79μ in diameter) of stone cells. Collenchyma irregularly and not very copiously developed. Pericyclic fibre groups frequently accompanied by excessively thick bands (up to 223μ) of stone cells, and scantily provided with crystal-containing sacs; fibres never exceeding 26μ (average about 18μ), striated—one of the striations being especially distinct (Fig. 16), and with a tendency to separate and become rounded, middle lamella slightly developed; parenchymatous portion of the pericycle usually with clear cells. The first layer of bast-fibre groups, in conjunction with stone cells that have usually arisen in the expanded parts of the medullary rays, forms a mixed sclerenchymatous ring with only distant and narrow parenchymatous breaks; the layer next to this internally subsequently behaves in a similar manner, and this process may be continued by the succeeding layers in older barks. The stone-cell aggregations in the first ring may attain as great a thickness as the pericyclic bands but the fibrous portion of the ring rarely exceeds 170μ. The rings internal to the first, in older barks, are rather thinner, and the fibre groups therein are very irregular in thickness, although they always preserve a strict tangential arrangement. The bast fibres (*b. f.*, Fig. 17) frequently exceed 26μ, and may attain 36μ, exhibit no evident striations, and present a pearly appearance and relatively slender middle lamella. Stone cells (*sc.*, Fig. 17) of every conceivable shape, thick-walled, and ranging from the size of the fibres to 78μ. Medullary rays distinct internally, but not towards the exterior, their one-rowed portions (in older barks than the one sketched) are occasionally lignified between the fibre groups, and may also contain prismatic crystals, but neither occurrence is common. Bast rays not clearly distinguishable externally, owing probably to total collapse of sieve tissue and dilatation of the bast parenchyma. Sieve tubes (*s. t.*, Fig. 26), quite commonly 28μ to 31μ across, apparently empty, elongated in a tangential direction as a rule, and usually juxtaposed tangentially. Bast parenchyma (*b. par.*, Fig. 26), very much smaller and with dense contents, forming thereby a striking contrast with the sieve tubes. Cluster crystals of calcium oxalate occur sparingly in the cortex and outer part of bast.

Note.—In a one-year-old twig there is a broken ring of small stone-cell groups in the outer part of the cortex, much as in Fig. 4 (*P. angustifolia*). The pericyclic fibres at this stage very rarely exceed 13μ.

Populus Alba, L. (Fig. 29).—*Locality*, Cambridge Botanic Garden; collected on July 23, 1901; determined at the Cambridge Botanic Garden. Cork of approximately the same thickness as the cortex. Cortex very narrow (from 5 to, unusually, 8 cells thick), and consisting mostly of collenchyma; nearly free from stone cells (but a broken ring of stone cells occurs in the one-year-old stem). Pericyclic fibre groups distant, frequently with small groups of stone cells adjoining them, the latter also occurring here and there in other parts of the pericycle; fibre groups scantily provided with crystal sacs. Pericyclic fibres very rarely exceeding, and seldom attaining, 16μ; middle lamella proper very thin and distinctly visible, "middle lamella" (=strongly lignified portion of outer walls) thick; one striation distinctly visible. The bast-fibre groups in the outermost layer form a nearly continuous mixed stone ring, as in *P. tremuloides*, and where small gaps still occur the cells are sclerotising (see *sclg.*, Fig. 25). The bands of stone cells may attain a thickness of 144μ, but may thin down to 79μ (or even 52μ) in the outer ring; or less, internally to it. Average thickness of fibre groups is fairly uniformly 79μ, but may be as little as 26μ, or as much as 117μ. Suppression of fibre groups may occur, and connecting bands of stone cells internal to the outermost ring are not formed so soon, as a rule. The bast fibres are of the same type as in *P. tremuloides*, but they do not usually exceed 26μ, although they may attain (but very rarely) 31μ; striations rarely suggested. Stone cells, as in *P. tremuloides*, but tangential elongation is, perhaps, more frequent. Medullary rays distinct internally, but narrower than in *P. tremuloides* (compare *m.r.*, in Figs. 26 and 27), and fairly well marked externally; with fusiform local expansions; the one rowed portions occasionally lignified between the fibre groups. The bast rays, though not very sharp, are generally distinguishable throughout their course, owing to the fact that the sieve tubes retain their shape, more ar less completely, for a considerable time. The sieve tubes (*s.t.*, Fig. 27) may attain a diameter of 39μ, and may possess scanty contents; they usually exhibit a nearly circular or polygonal outline, and only collapse slowly; sieve plates not distinct. Cells of bast parenchyma (*b. par.*, Fig. 27), of varying sizes, and with irregular and not copious contents. Cluster crystals of calcium oxalate occur but sparingly, and are very rare in the cortex proper and in the inner part of the bast.

Populus Grandidentata, Michx. (Fig. 30).—*Locality*, woods by Cascadilla Creek, just below Dwyer's Dam, Ithaca, N.Y.; collected on March 1, 1902; determined by Professor W. W. Rowlee, Cornell University, Ithaca, N.Y. Cork thin. Cortex wide, and invariably with abundant groups of stone cells (up to 260μ thick), which are commonly scattered, but sometimes occur in approximated tangential bands, the latter occasionally attaining 1·26 Mm. in a tangential direction; the stone cells themselves are usually, but by no means always, oval or squarish, and do not commonly exceed 52μ (average, about two-thirds of this). Collenchyma feebly and scantily developed. Pericyclic fibre groups very white, isolated, or in mixed sclerotic bands, which may be as much as 1·8 Mm. wide in some cases; the stone-cell groups in these bands may attain a thickness of 117μ, and the fibrous portions are of approximately the same thickness—the average thickness of the whole bands is between 80μ and 100μ. Pericyclic fibres rarely exceed 14μ, and seldom attain them; striations generally absent; "middle lamella" very thick. A mixed continuous stone ring of very unequal thickness is almost invariably formed with the first band of fibres—there is, however, very occasionally, a break in this ring, which in one case observed attained a width of three parenchymatous cells—the stone-cell masses may here attain a thickness of 130μ, while the fibre groups beside them may be only 39μ thick, or may even get down to 26μ; in a word, the stone-cell groups are, as a rule, thicker than the fibre groups, but they may be thin, nevertheless (occasionally as little as 39μ); one of these stone-cell masses was seen which attained a thickness of 233μ in the radial direction, and stretched across two fibre bands, plugging up a medullary ray in a similar way to *P. tremula*. The bast fibres, which are seen to the best advantage in the more regular internal groups, sometimes attain 26μ, commonly 20μ, striations absent, appearance stony, middle lamina slender but sharp. The stone cells are of the usual type. Medullary rays not very distinct, the one-rowed portions with narrow cells much extended radially. Bast rays indistinct. Sieve tubes usually polygonal and nearly isodiametric, but otherwise approaching the *tremuloides* type in their tangential juxtaposition, their emptiness, and their recognisable sieve plates (although the latter are not nearly so distinct as in *P. tremuloides*); they attain, but seldom exceed, 26μ. The bast parenchyma is, for the most part, obviously smaller, and with dense contents. Cluster crystals scarce, but occurring throughout the bark.

Note.—In an older piece of bark, containing five layers of bast-fibre groups, the last-named may attain a thickness of 130μ. When the outermost continuous mixed ring shows signs of breaking up—as it occasionally does—the one next to it internally takes its place, as that has become a nearly continuous mixed ring also. There are local fusiform widenings in this older bark, but they are not so frequent as in *P. alba*; sclerotic bands frequently occur in such as are to be found, even between the inner fibre groups which have been separated by these widenings.

P. Canescens, Sm. (Fig. 31).—*Locality*, Royal Botanic Gardens, Kew; collected in March, 1901; determined at Kew. Cork fairly thick. Cortex very wide, collenchyma generally feebly developed, but fairly strong locally, especially when stone-cell groups, not far removed from the cork, occur below it. Stone cells very copiously developed (Fig. 24), in small or large groups, frequently scattered, but commonly approximated in tangential bands which may attain 3·25 Mm., and 210μ in thickness. Stone cells (Fig. 24) of very varying shapes and sizes (from 26μ to 105μ). Pericyclic fibre groups usually much broken up, and frequently forming mixed sclerenchymatous bands with stone-cell groups: the latter may be 105μ thick, or occasionally much more, for they are, at times, extremely irregular; the pericyclic groups themselves are seldom more than 65μ thick. The pericyclic fibre groups, when not involved with the stone cells, show few enveloping sacs with prismatic crystals, although more so than in most of the barks. Pericyclic fibres not usually exceeding 16μ, striations evident or not, "middle lamella" of varying thickness. The first layer of bast-fibre groups never forms a continuous mixed ring with stone cells, although bands, up to 1·45 Mm. in tangential direction, may occur. The thickness of the bast-fibre groups rarely attains 92μ, and seldom exceeds 65μ in the first layer; the groups internal to this, even in old barks, are thinner still, and rarely exceed 52μ. Such stone cells as occur in the bast are either mixed in with the bast fibres and not much wider—these are by no means abundant, and internally to the first layer they are distinctly rare—or else they occur in masses, up to 262μ in diameter, plugging up the medullary rays, or as irresponsible chunks in the soft bast. Occasionally, also, the usual fill-up stone-cell group is found between two fibre groups in the wider part of a medullary ray (as far as this can be determined): the whole arrangement, in fact, is very irregular. Internally, suppression of the fibre groups is very common, some pieces of bark as large as the section drawn showing only about half the number exhibited in the one chosen. The secondary fibres may attain 26μ (quite commonly 24μ), have no obvious striations, and possess a moderately thick middle lamella. Medullary rays very narrow in the one-rowed portions and fairly distinct; both the medullary rays and the bast rays are confused towards the exterior. Soft bast enormously in excess and showing a distinct banding, caused by a regular alternation of bast parenchyma possessing dark granular contents with colourless and usually much collapsed sieve tissue. The quantity of sieve tissue present is relatively very large. Sieve tubes up to 26μ, and of the *tremuloides* type on the whole, except that their mode of juxtaposition shows little regularity; their great abundance and their occurrence in tangential bands are, however, very striking features. The bast parenchyma is smaller, and with dense contents. Cluster crystals of calcium oxalate are extremely abundant everywhere except in the narrow parts of the medullary rays.

Note.—In a piece of older bark the inner bast conforms to what has been said above, but the fibre groups are extremely scarce, and hardly ever more than one fibre thick. The cork may be enormously thick, while in the cortex the formation of stone cells has hardly kept pace with the increase in tangential extension, and the cortex is, on the whole, less sclerotic, and there is, further, a tendency for the groups to get into line and to form a tangential band.

P. Tremula, L. (Fig. 32).—*Locality*, Cambridge Botanic Garden, collected on June 3, 1903; determined at the Cambridge Botanic Garden. Cork fairly thick. Cortex wide, collenchyma well developed on the whole, especially outside the stone-cell groups. Stone-cell groups always scattered, and of very varying size—from 79μ to 314μ or more (crossing the pericycle into the outer widened portion of a medullary ray in the latter case). The stone cells in these groups may be very thick-walled, as usual, or the walls may be rather thin. Pericyclic fibres generally in good-sized groups, the latter hardly ever in connection with stone cells, but always clearly at the apex of bast wedges; sacs with prismatic crystals of calcium oxalate fairly abundant on their outer surfaces, but scarce on their inner ones; the pericyclic fibre groups usually attain as great a thickness as the more developed of the bast-fibre groups, and, almost always, a greater tangential extension. The pericyclic fibres may attain 18μ, may be striated or not, and possess a moderately developed middle lamella. Bast-fibre groups, irregular in position and size, the latter factor varying, in the thickness, from 26μ to 118μ, and both these and intermediate sizes are common. The average size (as far as this can be determined) of the bast fibres is not very much greater than that of the pericyclic fibres, but it occasionally reaches 31μ, when the fibres are much extended in one direction; the bast fibres are not evidently striated, and possess a moderately thick middle lamella. The sclerotic groups are most frequently found in the outer parts of, or plugging up the medullary rays (Fig. 25); these masses may attain a radial diameter of 445μ. Small groups of stone cells or single stone cells, are also found in the one-rowed parts of the medullary rays, between two bast-fibre groups, and projecting beyond the latter (*sc.* Fig. 18): this appears to be characteristic. A small group of stone cells is also occasionally affixed to one side of a fibre group in the usual way, but this is not common; and quite frequently the bast (and the cortex too) is, in some sections, almost free from stone cells, saving the narrow parts of the medullary rays, which are frequently lignified between the fibre groups. Bast rays and medullary rays extremely sharp; bast wedges rather erratic, but frequently broad and well shaped. Sieve-tubes hardly ever attaining 26μ until flattened in a tangential direction; intermediate, perhaps, between the *tremuloides* and *alba* types, but as they collapse early they are not of much descriptive value. Cells of the bast parenchyma frequently quite as large, and not easily distinguishable, at times, from the sieve tubes. Cluster crystals of calcium oxalate abundant, except in the inner part of the bast, where they may also be found in the one-rowed portions of the medullary rays.

P. Balsamifera, L. (Fig. 33).—*Locality*, side of road leading to Varna, Ithaca, N.Y.; collected on March 1, 1902; determined by Professor W. W. Rowlee, Cornell University, Ithaca, N.Y. Cork rather thin. Cortex fairly wide, with small groups (up to 262μ in tangential, and 52μ in radial direction) of stone cells few and far between in it. Collenchyma rather slightly developed. Pericyclic fibre groups distinct, up to 118μ thick, strikingly white, and almost free from juxtaposition with stone cells, although an occasional small group is seen; sacs with prismatic crystals of calcium oxalate scarce in connection with the fibre groups. The pericyclic band joining the fibres tangentially generally consists of clear cells. Pericyclic fibres rarely attaining 15μ, and, with a tendency to split apart, striations not obvious, except on borders of groups, middle lamella slender. The first layer of bast-fibre groups may form mixed bands with the stone cells, attaining a width, in some cases, of 1.26 Mm., and perhaps more; the fibrous portions of these attain 52μ in thickness, and the stone-cell groups a little more; such a band is then followed by a gap whose width may be as great as that of the band itself. The stone-cell groups usually occupy the normal positions in the widened portions of the medullary rays (as far as this can be determined). The second band from the pericycle, however, very closely approximates to the nearly continuous mixed ring condition which obtains in *P. tremuloides*. This ring may attain a thickness of 79μ (the average is not far from 65μ), and its regularity and evenness forms a strong contrast to the two preceding types. The bast fibres may attain 26μ (average perhaps 18μ). Sieve tubes, bast parenchyma, and medullary rays of the *tremuloides* type. The sieve tubes attain, but rarely exceed, 26μ; they apparently collapse earlier than in *P. tremuloides*, and their sieve plates are not quite so distinct. Cluster crystals of calcium oxalate rather abundant in cortex, and sometimes in outer bast and medullary rays, but scarce internally to this.

Note.—Observations on older and younger barks show that the one-rowed portions of the medullary rays are always bold and wide, but the external portions are never very distinct. The fibrous layers in the inner portions of older barks are, as a rule, perfectly continuous (excepting the medullary rays, of course) and regular. Stone cells may occur occasionally in the fibre bands (or closely approximated to them) toward the exterior, but are comparatively rare. All mixed rings are broken at this stage.

P. Angustifolia, James (Fig. 34).—*Locality*, well-protected spot on Colorado College campus, growing in sandy soil; collected on March 14, 1902; determined by Mr. H. L. Shantz, Colorado College, Colorado Springs, Colo. Cork thick. Cortex rather wide; collenchyma feebly developed; stone-cell groups usually small (may attain a thickness of 131μ and a tangential extension of 262μ), and distantly arranged in a ring near the outside of the cortex for the most part; somewhat quadrangular or oval thick-walled cells, not generally exceeding 52μ, preponderate in these groups. Pericyclic fibre groups large frequently 288μ in a tangential direction and 105μ thick, but occasionally more broken up) and seldom with stone cells abutting on, or tangentially in line with them; prismatic crystals of calcium oxalate in connection with them very rare. Pericyclic fibres attaining fully 26μ (average probably about 18μ), pearly, without evident striations, middle lamella relatively slender—characters generally associated with the bast fibres: they are, however, very white, and are only faintly stained by phloroglucin and hydrochloric acid. The tangential connecting bands of clear parenchymatous cells are frequently very striking. A mass of stone cells, attaining 288μ tangentially and 210μ radially in one mass measured, occasionally occurs in the widened part of a medullary ray just below the region of the pericycle, but this is quite rare. The first layer of bast-fibre groups is always feebly developed, and, although stone-cell groups up to 131μ wide may occur in it, in the majority of cases the bast wedges are well marked off, owing to the absence of disturbing sclerotic groups; the fibre groups in this layer may attain 52μ in thickness. The second layer more nearly approximates to a continuous mixed ring, but frequent gaps occur, leaving the medullary rays unencumbered, and contributing to their distinctness; notwithstanding the fact that the stone-cell groups which occur here may attain a thickness of 65μ, whereas the fibrous groups seldom exceed 52μ, the banding presents a regular and orderly appearance. In addition to their occurrence in their normal positions, the stone cells are sometimes found in the bodies of the fibre groups, and also in the one-rowed parts of the medullary rays between two fibre groups, as shown in Figs. 19 and 20. The thickness of the soft bast between the pericyclic fibre groups and the first layer of bast-fibre groups averages from 183 to 235μ, and from 183 to 205μ between the first and the second layers, leaving but about a third of the thickness of the whole bark for the remaining closely-approximated layers. The latter are about 65μ thick on the average (soft bast about 79μ), and are very regular, the fibre groups being hardly ever suppressed. It is true that the fibre groups may now and then attain a thickness much above the average (up to 131μ), but this does not interfere with the great regularity of the tangential banding. The individual fibres answer to the description of the pericyclic fibres with the exception of their behaviour towards hydrochloric acid, while the fibre groups are beset with sacs containing prismatic crystals of calcium oxalate. The medullary rays are noticeable on account of the interesting crystallisations and lignifications which occur in their one-rowed portions (see Figs. 19, 20, and 22); these may occasionally be seen even between the fibre groups of the innermost fibrous layer. The stone cells which occur in these positions generally keep within the slit between the fibre groups, without projecting beyond them as is frequently the case in *P. tremula*; otherwise the medullary rays are well-marked, wide-celled, and with dark granular contents. Both the bast rays and the medullary rays are hence recognisable throughout, although the former sometimes lacks sharpness in the outermost portion of the bast Sieve tubes, bast parenchyma, and medullary rays of the *tremuloides* type, but bast parenchyma relatively large. The sieve tubes are frequently 26μ wide. Sacs containing cluster cystals of calcium oxalate are fairly abundant in the cortex and outer parts of the medullary rays, but scarce elsewhere.

Note.—In some sections the third layer of bast-fibre groups from the pericycle is feebly developed, giving, in places, the appearance of a wider band of soft bast.

P. Monilifera, Ait. (*P. deltoides* [*vel deltoidea*], Marsh.) (Fig. 35).—*Locality*, Cambridge Botanic Garden; collected on June 3, 1903; determined at the Cambridge Botanic Garden. Cork thick, occasionally exhibiting tangential bands of stone cells where abnormally developed locally. Cortex rather thin on the average (it is above the average in Fig. 35); collenchyma rather strongly developed; stone-cell groups small (attaining 210μ in a tangential, and 131μ in a radial direction), and scattered. Pericyclic fibre groups free; or with bands of stone cells abutting on them from the medullary rays below, but also occurring tangentially in line with them; the former groups may attain a thickness of 79μ, and the latter of 105μ, with a tangential extension of 183μ. The pericylic fibre groups stain deeply with phloroglucin and hydrochloric acid, but they are sparingly accompanied by sacs containing prismatic crystals of calcium oxalate. Pericyclic fibres rarely exceeding, or even attaining, 16μ; usually with a conspicuous middle stria; middle lamella slender. First layer of bast-fibre groups averaging about 52μ, not infrequently banded by means of stone-cell groups stretching across the rather ill-defined medullary rays in the usual way; such stone-cell groups, however, are rather fitful in their appearance, and these mixed bands, whose average thickness is about 52μ, are seldom of much extent. The fibrous layers internal to this do not certainly average more than half the thickness of the preceding, and fibre groups are frequently suppressed, as in *P. canescens*. It is rare to find groups of stone cells further inward than the second layer of fibre groups, but small masses scattered here and there occasionally occur. The bast fibres are of the usual type, and may occasionally attain 26μ (commonly 23μ), the average dimensions are probably about 18μ. The medullary rays are narrow in their one-rowed portions, and never very distinct at any part of their course; but towards the exterior, the irregular groups of stone cells and the crowded cluster crystals of calcium oxalate contribute, with other factors, to make a separation of bast rays and medullary rays a matter of impossibility. The general facies of the soft bast is much like that of *P. tremula*. The cells of the bast parenchyma are distinctly smaller than the sieve tubes, but they soon swell out to the same size as the latter, which collapse early. The sieve tubes frequently attain a diameter of 26μ; sacs containing cluster crystals of calcium oxalate abundant in cortex and outer parts of medullary rays, which are almost black with them; also very abundant in the remainder of the bast, and not infrequently occurring in the narrow parts of the medullary rays.

P. PYRAMIDALIS, Salisb. (*P. nigra*, var. *Pyramidalis*, Spach; *P. italica*, Moench.), (Fig. 36).—*Locality*, Cambridge Botanic Garden; collected on July 23, 1901; determined at the Cambridge Botanic Garden. Cork thick, excessively developed locally, and frequently with tangential rows of stone cells in these local developments. Cortex fairly wide; collenchyma slightly developed; abundance, size, and distribution of stone cell groups much as in *P. deltoides*, but may occasionally attain an irregular tangential extension of 360μ, and a similarly irregular radial diameter of 180μ, but so slight a difference as this is of no importance, and the great majority of sclerotic groups are no larger than in *P. deltoides*. The pericyclic fibre groups are usually much broken up (a large size for a fibre group is 157μ wide by 65μ thick), and, as a rule, are tangentially in line with groups of stone cells of approximately the same thickness, and not infrequently in juxtaposition with them. Pericyclic fibres rarely exceeding 13μ (7 to 10μ common); one striation, at least, discernible; "middle lamella" usually thick, and thin middle lamella proper occasionally visible also: these fibres stain deeply with phloroglucin and hydrochloric acid. The average thickness (about 39μ) of the layers of bast-fibre groups is pretty nearly the same throughout the bark, although it may range from 16μ to 52μ. The first layer externally does not seem to show the preponderance in size over the others which appears to be general in *P. deltoides*. I have observed small groups of stone cells, up to 65μ thick, in the three outer layers; they are usually affixed to the bast-fibre groups in the usual way, but whether they arise in the widened medullary rays or not is difficult to determine. The tangential banding of the bast-fibre groups appears to be much more regular than in *P. deltoides*, suppression of fibre groups being less frequent than in the latter species, and the gaps do not often exceed 360μ in a tangential direction; these gaps, by-the-way, do not appear to be governed by the medullary rays, a fact which adds to the difficulty of recognising the outlines of the bast rays if such be present. The bast fibres very rarely attain 20μ, and seldom exceed 16μ; they are of the usual type, but striations are sometimes suggested. The medullary rays are irregular in their course and not easy to follow; the cells of which they are composed are narrow, and not much elongated radially; they have, further, a tendency to become extended tangentially, and to mingle with the bast parenchyma. The bast rays are equally indefinite. The sieve tubes may rarely attain 29μ, and exceed the cells of the bast parenchyma in size; they approach the *tremuloides* type, but tangential elongation is not adhered to, their greatest extension being frequently in a radial or oblique direction. They are subject to early distortion and collapse, and much exceed the parenchyma in amount. Cluster crystals of calcium oxalate are extremely abundant throughout the bark.[7]

Note.—From what has been said above, it will have been gathered that the greatest similarity exists between this bark and that of *P. deltoides*.[8] The differential characters which seem to possess some degree of constancy are:—(1) The greater relative thickness in *P. deltoides* of the first layer of bast fibre groups with respect to those internal to it, and the more frequent addition to it of stone-cell groups, and (2) the less frequent suppression of bast-fibre groups in *P. pyramidalis*.

P. NIGRA, L. (Figs. 37 and 38).—*Locality*, Royal Botanic Gardens, Kew; collected in March, 1901; determined at Kew. Cork fairly thick. Cortex usually somewhat narrow, but rather variable in this respect; collenchyma fairly well developed; groups of stone cells are present, but they are not very abundant, and seldom exceed 180μ, although they may occasionally attain 235μ in a tangential direction; stone-cell groups are relatively less abundant in the older barks, inasmuch as their formation does not keep pace with the growth in extent of the cortex. The pericyclic fibre groups may be broken up (as in Fig. 37), or they may be intact and of considerable size (Fig. 38); the number of sacs with prismatic crystals occurring in connection with them is relatively small; they are, as a rule, entirely free from stone cells, but a group of the latter, usually smaller than they (and certainly always thinner than the larger ones), may be attached to them. The pericyclic fibres very rarely exceed 13μ, but may, nevertheless, occasionally attain 16μ; striations not evident; middle lamella thin. The layers of bast-fibre groups usually show a very regular tangential banding (Fig. 38), although fibre groups may be suppressed here and there, especially in the younger barks (Fig. 31); they are always narrow, the average thickness being about 26μ (as in Fig. 21), and the extremes 39μ and 13μ (the thickness of a fibre). Occasionally a stone cell or two is found in the fibre groups (*s.c.*, Fig. 21), but this is not at all common. The bast fibres are of the usual type, and rarely exceed 13μ, although they may attain 16μ, or even more. Scattered groups or bands of stone cells occur now and then in the widened portions of the medullary rays; the bands usually occur in connection with the first or second layers of bast-fibre groups, and may attain a thickness of as much as 78μ, but rarely exceed 52μ. Stone cells, however, are less abundant in this bark than in any of the others. The widened medullary rays and the bast wedges are distinctly marked off from each other externally. The one-called portions of the widened medullary rays, but particularly those medullary rays which traverse the bast wedges and widen little, or not at all, are broad, distinct, and sharp; the cells of the unexpanded portions of the medullary rays, or all the cells of those medullary rays which do not expand, are markedly elongated radially. The bast wedges are wide as a rule, but not always; sieve tubes rarely attaining 26μ, and seldom over 23μ, of the *tremuloides* type, but relatively more numerous. The cells of the bast parenchyma, although less numerous than in *P. tremuloides*, are relatively larger; cluster crystals of calcium oxalate abundant, more especially in the outer parts of the bark.

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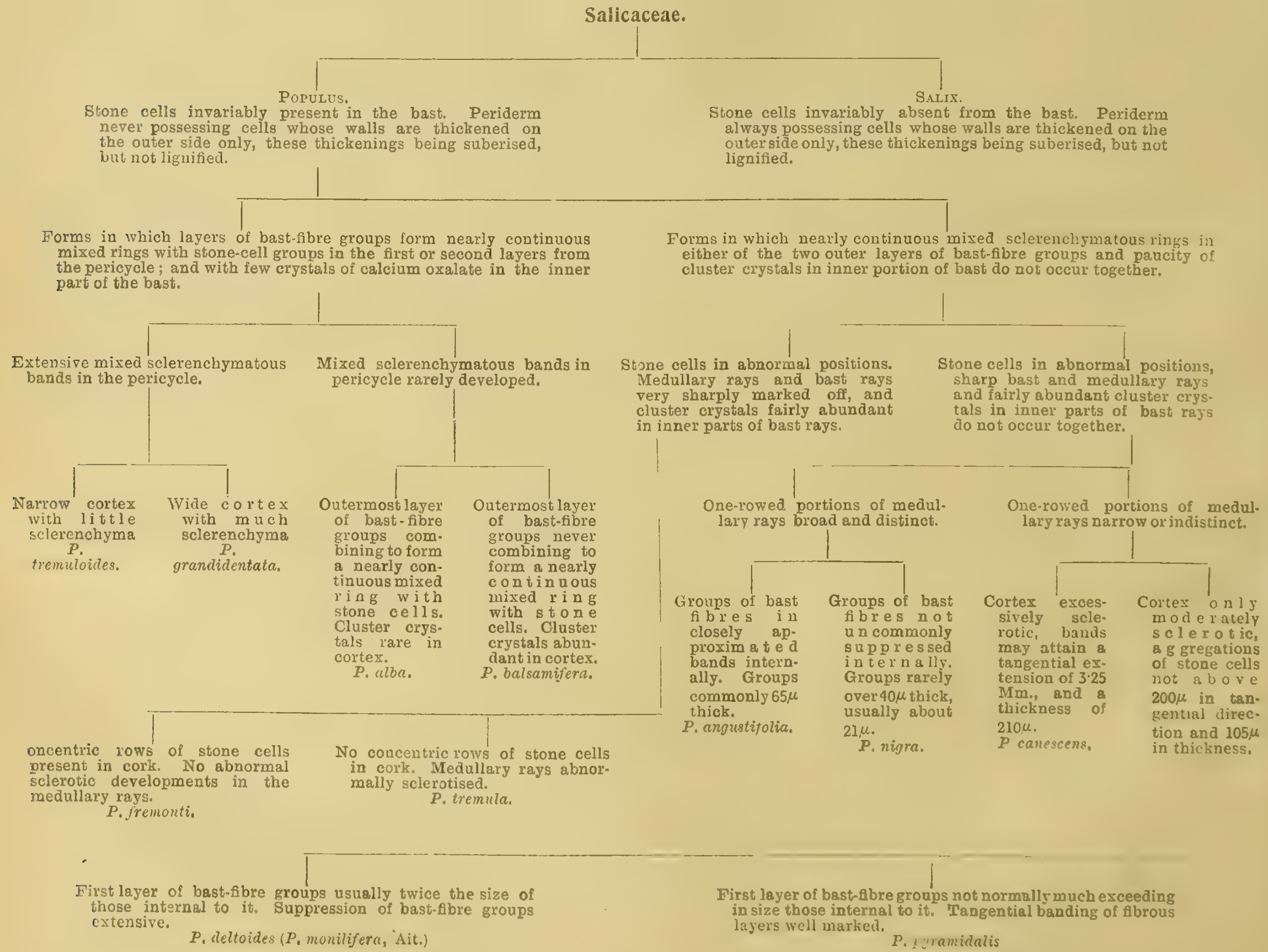
[7] The expression, "throughout the bark," which has been repeatedly used in connection with the distribution of cluster crystals of calcium oxalate, does not include the cork, which has been disregarded in the consideration of these bodies.

[8] I have used this name in preference to "*P. monilifera*" throughout the descriptions, as it (or its variant "*P. deltoidea*") is the one by which the tree is generally known. It is, of course, not within our present purpose to enter into the question of its merits or demerits from the standpoint of rigid botanical nomenclature.

P. Fremonti, S. Wats. (Fig. 39).—*Locality*, loamy, somewhat damp soil, San Bernardino, Southern California, collected on February 24, 1902, determined by Mr. S. B. Parish, San Bernardino, Cal. Cork thin, characterised by the presence of concentric rows of stone cells at more or less regular intervals which induce exfoliation of its outer layers. Cortex usually wide, but somewhat irregular; collenchyma little developed; stone-cell groups irregular, rather numerous, scattered, and requently of considerable size, attaining 270μ in any direction. Pericyclic fibre groups usually small and free, but with an occasional, generally smaller, group of stone cells abutting laterally upon them; they are only sparingly accompanied by sacs with prismatic crystals of calcium oxalate. Pericyclic fibres rarely exceed 16μ, apparently not striated, and with a thin middle lamella. The external bast-fibre groups are clearly limited to the very distinct bast rays, and are usually rather thick (about 78μ on the average), and irregular in their distribution; the inner groups are more regularly arranged, and tangential banding is general, although the bands are generally crooked. Bast fibres of the usual type, sometimes attaining 26μ, and commonly 23μ. Masses of stone cells occur here and there in the widened outer parts of the medullary rays, but these hardly ever show any tendency to unite with the bast-fibre groups. The medullary rays are distinct, numerous, and with notably wide cells throughout, which are radially elongated in their one-rowed portions. Bast rays very sharply delimited, owing to the relatively small size of their cells; clearly wedge-shaped, though irregular. Sieve tubes very rarely more than 20μ in their widest parts and nearly always radially juxtaposed; they are not appreciably larger than much of the bast parenchyma, and there is a tendency towards an arrangement of both sieve tubes and parenchymatous cells in radial rows. Cluster crystals of calcium



Salicaceae.

Populus.
Stone cells invariably present in the bast. Periderm never possessing cells whose walls are thickened on the outer side only, these thickenings being suberised, but not lignified.

Forms in which layers of bast-fibre groups form nearly continuous mixed rings with stone-cell groups in the first or second layers from the pericycle; and with few crystals of calcium oxalate in the inner part of the bast.

Extensive mixed sclerenchymatous bands in the pericycle.

Narrow cortex with little sclerenchyma
P. tremuloides.

Wide cortex with much sclerenchyma
P. grandidentata.

Mixed sclerenchymatous bands in pericycle rarely developed.

Outermost layer of bast-fibre groups combining to form a nearly continuous mixed ring with stone cells. Cluster crystals rare in cortex.
P. alba.

Outermost layer of bast-fibre groups never combining to form a nearly continuous mixed ring with stone cells. Cluster crystals abundant in cortex.
P. balsamifera.

Forms in which nearly continuous mixed sclerenchymatous rings in either of the two outer layers of bast-fibre groups and paucity of cluster crystals in inner portion of bast do not occur together.

Stone cells in abnormal positions. Medullary rays and bast rays very sharply marked off, and cluster crystals fairly abundant in inner parts of bast rays.

oncentric rows of stone cells present in cork. No abnormal sclerotic developments in the medullary rays.
P. fremonti.

No concentric rows of stone cells in cork. Medullary rays abnormally sclerotised.
P. tremula.

Stone cells in abnormal positions, sharp bast and medullary rays and fairly abundant cluster crystals in inner parts of bast rays do not occur together.

One-rowed portions of medullary rays broad and distinct.

Groups of bast fibres in closely approximated bands internally. Groups commonly 65μ thick.
P. angustifolia.

Groups of bast fibres not uncommonly suppressed internally. Groups rarely over 40μ thick, usually about 21μ.
P. nigra.

One-rowed portions of medullary rays narrow or indistinct.

Cortex excessively sclerotic, bands may attain a tangential extension of 3·25 Mm., and a thickness of 210μ.
P canescens.

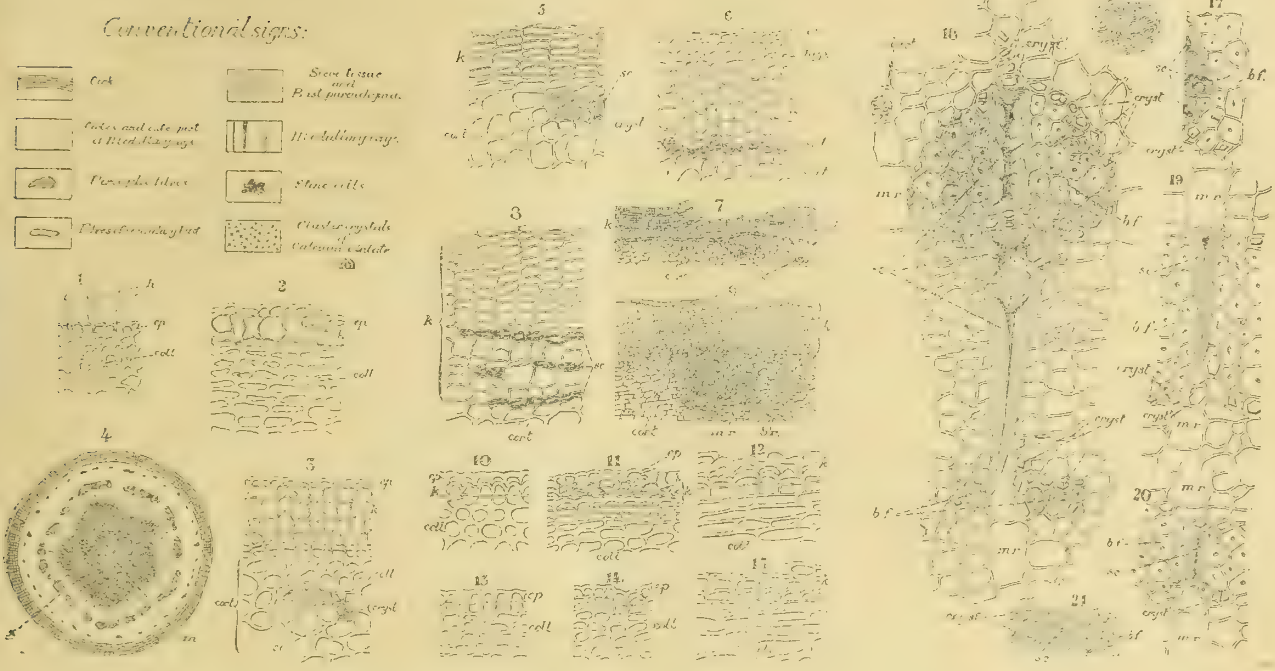
Cortex only moderately sclerotic, aggregations of stone cells not above 200μ in tangential direction and 105μ in thickness.

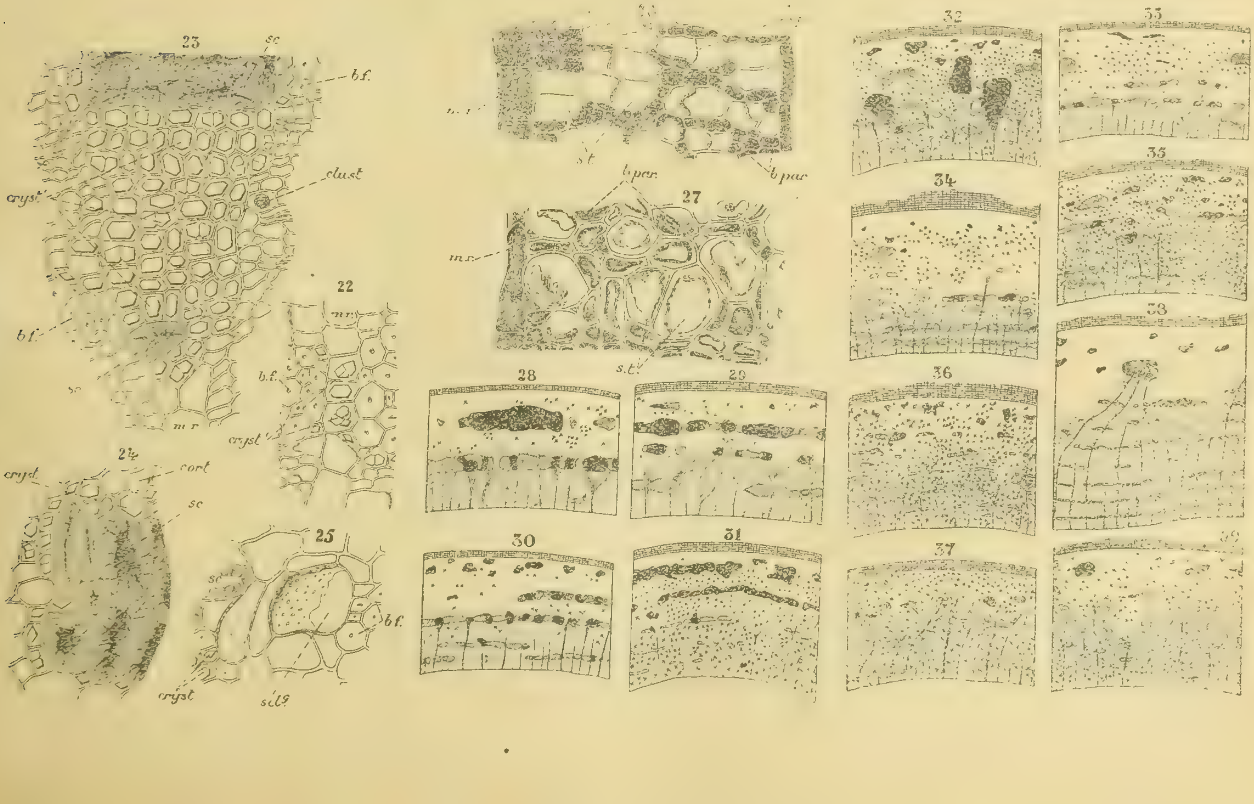
First layer of bast-fibre groups usually twice the size of those internal to it. Suppression of bast-fibre groups extensive.
P. deltoides (*P. monilifera*, Ait.)

First layer of bast-fibre groups not normally much exceeding in size those internal to it. Tangential banding of fibrous layers well marked.
P. pyramidalis

Salix.
Stone cells invariably absent from the bast. Periderm always possessing cells whose walls are thickened on the outer side only, these thickenings being suberised, but not lignified.

FIGURES ILLUSTRATING TRANSVERSE SECTIONS.





oxalate are abundant in most regions of the bark, as a rule, but their distribution is at times erratic and local; they are commonly most abundant near the outer margin of the medullary rays and bast wedges.

Note.—This bark should probably have been placed somewhere near *P. tremula*, but the constant presence of thickened rows of cells in the periderm tempted me to place it as near the willows as possible, that is to say, at the least sclerenchymatous end of the series.

It now remains to construct a key for the series of barks above described, and the chart on a previous page is an attempt in this direction.

In conclusion, I desire to express my very hearty thanks to the following gentlemen who have taken great pains to supply suitable authentic material for this investigation:—Professor I. B. Balfour, F.R.S., Regius Keeper of the Royal Botanic Garden, Edinburgh; Mr. B. F. Bush, Courtney, Mo., U.S.A.; Mr. Frederick V. Coville, Chief of the Division of Botany, United States Department of Agriculture, Washington, D.C.; Mr. E. M. Holmes, F.L.S., Curator of the Museums of the Pharmaceutical Society of Great Britain; the Director, Royal Botanic Gardens, Kew; Mr. R. Irwin Lynch, A.L.S., Curator of the Cambridge Botanic Garden; Mr. S. B. Parish, San Bernardino, Cal., U.S.A.; Professor W. W. Rowlee, Cornell University, Ithaca, N.Y., U.S.A.; Mr. H. L. Shantz, Colorado College, Colorado Springs, Colo., U.S.A.; and Professor William Trelease, Sc.D., Director of the Missouri Botanical Garden, St. Louis, Mo., U.S.A.

Explanation of Figures.

Note.—All the sections are *transverse* sections.

Fig. 1.—Section through epidermis and outer portion of cortex of first year's twig of *P. alba*; *h.*, hairs; *ep.*, epidermis; *coll.*, collenchyma. × 100 diameters.

Fig. 2.—Section through a somewhat older twig of same; *k.*, periderm or cork. Other lettering as before. × 100 diameters.

Fig. 3.—Section through outer part of bark of a one-year-old twig of *P. angustifolia* (that shown in Fig. 4); *cort.*, outer portion of cortex; *sc.*, stone cells; *cryst.*, prismatic crystals of calcium oxalate. Other lettering as before. × 100 diameters.

Fig. 4.—Section through a one-year-old twig of *P. angustifolia*; *x.*, wood; *m.*, pith. For explanation of other structures see conventional signs. × 15 diameters.

Fig. 5.—Section through periderm and outer part of cortex of older bark of *P. angustifolia*. Lettering as before. × 100 diameters.

Fig. 6.—Section through a one-year-old twig of *P. fremonti*; *hyp.*, hypoderma; *sc.l.*, sclerenchymatous layer limiting cork internally. Other lettering as before. × 100 diameters.

Fig. 7.—Section through periderm and outer portion of cortex of older bark of same; *sc.l.*, concentric sclerenchymatous layers in periderm. Other lettering as before. × 37½ diameters.

Fig. 8.—Section through a copiously developed periderm of *P. deltoides*; *sc.*, tangential bands of stone cells in the periderm. Other lettering as before. × 100 diameters.

Fig. 9.—Section through outer part of bark of a two-year-old twig of *S. wardi*; *k.*, outer bark; consisting largely of cork; *m.r.*, medullary ray; *b.r.*, bast ray. Other lettering as before. For structures not lettered see conventional signs on Plate I. × 37½ diameters.

Fig. 10.—Section through outer part of bark of *S. alba*. Lettering as before. × 100 diameters.

Fig. 11.—Section through outer part of bark of a one-year-old twig of *S. wardi*. Lettering as before. × 100 diameters.

Fig. 12.—Section through outer part of an older bark of *S. purpurea*. Lettering as before. × 100 diameters.

Fig. 13.—Section through outer part of bark of a first year's twig of *S. viminalis*. Lettering as before. × 100 diameters.

Fig. 14.—Section through different part of the same twig. Lettering as before. × 100 diameters.

Fig. 15.—Section through outer part of older bark of same species. Lettering as before. × 100 diameters.

Fig. 16.—Pericyclic fibres of *P. tremuloides*. × 150 diameters.

Fig. 17.—Section through portion of mixed sclerenchymatous ring of *P. tremuloides*; *b.f.*, bast fibres. Other lettering as before. × 150 diameters.

Fig. 18.—Section through portion of bast of *P. tremula*, showing abnormal development of sclerenchyma (*sc.*); *cryst'.*, prismatic crystals of calcium oxalate in medullary rays; *clust.*, cluster crystals of calcium oxalate. × 190 diameters.

Figs. 19 and 20.—Sections through lignified parts of medullary rays between fibre groups in *P. angustifolia*. Lettering as before. × 190 diameters.

Fig. 21.—Section through bast-fibre groups enclosing stone cells in *P. nigra*. Lettering as before. × 190 diameters.

Fig. 22.—Section through part of medullary ray of *P. angustifolia*, provided with prismatic crystals of calcium oxalate between two bast-fibre groups. Lettering as before. × 190 diameters.

Fig. 23.—Section through a sclerotic mass from a medullary ray of *P. tremula*. Lettering as before. × 190 diameters.

Fig. 24.—Section through portion of a stone-cell group from the cortex of *P. canescens*. Lettering as before. × 190 diameters.

Fig. 25.—Section through part of bast of *P. alba*, showing cells in the process of becoming sclerotised (*sclg.*). Other lettering as before. × 190 diameters.

Fig. 26.—Section through portion of soft bast of *P. tremuloides*; *s.t.*, sieve tubes; *s.p.*, sieve plate; *s.w.*, partition between adjoining sieve tubes not showing sieve plate; *b.par.*, bast parenchyma. Other lettering as before. × 190 diameters.

Fig. 27.—Section through portion of soft bast of *P. alba*. Lettering as before. × 250 diameters.

Fig. 28.—Section through bark of *P. tremuloides*. × 14 diameters. Conventionalised. For explanation see Plate I

Fig. 29.—Section through bark of *P. alba*. × 14 diameters. Conventionalised as before.

Fig. 30.—Section through bark of *P. grandidentata*. × 14 diameters. Conventionalised as before.

Fig. 31.—Section through bark of *P. canescens*. × 14 diameters. Conventionalised as before.

Fig. 32.—Section through bark of *P. tremula*. × 14 diameters. Conventionalised as before.

Fig. 33.—Section through bark of *P. balsamifera*. × 14 diameters. Conventionalised as before.

Fig. 34.—Section through bark of *P. angustifolia*. × 14 diameters. Conventionalised as before.

Fig. 35.—Section through bark of *P. deltoides* (*P. monilifera*, Ait.) × 14 diameters. Conventionalised as before.

Fig. 36.—Section through bark of *P. pyramidalis*. × 14 diameters. Conventionalised as before.

Fig. 37.—Section through bark of *P. nigra*. × 14 diameters. Conventionalised as before.

Fig. 38.—Section through older bark of same. Cluster crystals of calcium oxalate not shown. × 14 diameters. Conventionalised as before.

Fig. 39.—Section through bark of *P. fremonti*. × 14 diameters. The darkest lines in the cork are the rows of stone cells, otherwise conventionalised as before.

CHEMICAL EXAMINATION OF KÔ-SAM SEEDS.

(*Brucea sumatrana*, Roxb.)

BY FREDERICK B. POWER, PH.D.,
AND
FREDERIC H. LEES.

The name Kô-sam, by which the seeds under investigation are known, appears to be of Chinese origin, although in the medical literature of China and Cochin China it is sometimes written Khô-sam. In the language of the latter country Khô-sam is stated to signify gentian. The botanical name of the plant producing the seeds is *Brucea sumatrana*, Roxb., a shrub growing about two mètres in height, belonging to the natural order of Simarubaceæ. An excellent botanical description of the genus *Brucea*, with illustrations of the flowers and fruits of the two more important species, *B. antidysenterica* and *B. sumatrana*, is given by Engler in 'Die natürlichen Pflanzenfamilien,' Theil III., Abtheil. 4, p. 220. Leipzig, 1896. In this work the following five species of *Brucea* are recorded, with indications of their respective habitats and uses:—(a)—*B. antidysenterica*, Lam., Abyssinia; *B. paniculata*, Lam., Tropical West Africa and Upper Guinea; *B. tenuifolia*, Engl., Usambara; *B. mollis*, Wall.,* Khasia. (b)—*B. sumatrana*, Roxb., from Farther India through the Indian Archipelago and Cochin China to Australia and the Philippines. "All the species are very bitter. The bark and the fruits of *B. antidysenterica* are used with success in Abyssinia for diarrhœa and fever. All the parts of *B. sumatrana* are esteemed in the East Indies as a stomachic tonic, and are also used for diarrhœa, intermittent fever, and worms."

A species of the botanically closely allied genus *Picrasma* is referred to in the 'Pharmacographia Indica,' Vol. 1, p. 287, as follows:—"*Picrasma quassioides*, Benn., is a small tree or large bush indigenous to the sub-tropical Himalaya and South China. It is recognised by the Indian Pharmacopœia under the name of *Brucea* (*Nima*) *quassioides*, and the bark, which is very bitter, has been recommended as a febrifuge." The wood of this plant has been assumed to contain quassin, but no complete chemical examination has as yet been made of it.

During the past few years Kô-sam seeds have been brought somewhat prominently to notice, on account of their reputed value as a remedy in dysentery. Dybowski, in some papers published in the *Revue des Cultures Coloniales*, Paris (Tome VI., January 5 and April 5, 1900), has particularly called attention to these seeds, and quotes Dr. Mougeot, of Saigon, as having discovered that five or six of the kernels, taken in the morning, crushed with crumb of bread, are a sovereign remedy for the most pernicious dysenteries of tropical countries. Dr. Mougeot has reported that out of 879 cases treated by him, 799 were completely cured in from three to six days, while fifty-seven of these cases required fifteen days. The popular interest in this remedy is shown by the following notice, which appeared in a recent issue of the *Rangoon Gazette*:—"The ravages which dysentery caused among Europeans in the Tropics before the disease was as well understood as at present were terrible, and now, although it is affirmed by many medical men that dysentery if taken in time is practically always amenable to treatment, and but seldom fatal even when for a short time neglected, yet the number of deaths caused by it, especially among children, is still very great. It is most certainly good news to hear that a new cure for it has been discovered in the seeds of the *Brucea sumatrana*, which are said to be as much a specific for it as quinine is for malaria."

The most extended notices that have thus far appeared relating to the botanical and chemical characters of Kô-sam seeds are contained in a series of papers published in the previously mentioned *Revue des Cultures Coloniales*, Paris, 1900, Nos. 47, 48, and 50, short abstracts of which have been given in the *Pharm. Journ.*, 1900, **64**, pp. 463, 687. The authors of the present paper have, nevertheless, deemed it desirable to consult the original publications, in order to ascertain the evidence upon which the statements relating to the chemical constituents of the seeds are based. As the publications referred to are, to a considerable extent, of a controversial nature, the following references to them are restricted to such details as have a direct bearing upon the results of our investigation, or which have seemed necessary for the more satisfactory elucidation of the subject.

Professors Heckel and Schlagdenhauffen (*loc. cit.*, No. 47, pp. 97-104) appear to have been the first to make a chemical examination of Kô-sam seeds. They state that from the close botanical relationship of *Brucea* with *Quassia amara* and *Quassia simaruba* they were at the beginning led to conclude that the active principle of the seeds would prove to be quassin—the bitterness being of the same nature—and that their chemical analysis had confirmed this supposition. The results of their investigation were given in the following order:—

(1) By extraction with carbon disulphide they obtained 57·14 per cent. of a fatty oil, having a yellow colour, a slightly bitter taste—attributed to a trace of quassin—and a density of 0·912.

(2) By subsequent abstraction with chloroform 0·483 per cent. of solid matter was obtained. On treating this with water a bitter principle was dissolved, leaving an insoluble substance of a resinous nature. The bitter principle is stated to have the characters of quassin, a conclusion which seems to depend upon their observation that when the aqueous solution was evaporated on a watch-glass to dryness with a drop of dilute hydrochloric acid, needle-shaped crystals were obtained, as in the case of quassin when tested under the same conditions. It was furthermore noted that by the action of concentrated sulphuric acid on these crystals and on pure quassin, identical results were obtained. As they subsequently remark that quassin suffers no change of colour in contact with concentrated sulphuric acid, the evidence of identity was of a purely negative character.

(3) By subsequent extraction with alcohol 6·972 per cent. of solid matter was obtained. On treating this with water it was resolved into a soluble and an insoluble portion. The latter was partly composed of proteid matter, while the soluble portion also contained some nitrogenous principles of the same class, together with a certain quantity of glucose and saccharose. In the 6·972 parts of total residue they found 3·199 parts of albuminoid matter, the remainder being stated to consist of sugar and quassin, associated with another bitter principle and saponin. They separated these principles by treating the powdered alcoholic extract with amyl alcohol. It is stated that on evaporating the latter liquid, and taking up the residue with water, the quassin is first dissolved, and some time afterwards, the second bitter principle. The first solution, which was very bitter, they evaporated to dryness, and then treated the residue with chlorine water by evaporating to dryness with the latter on a water-bath. No change of colour was observed under these conditions or when treated with concentrated sulphuric acid, and these negative characters were considered to appertain to quassin. Furthermore, as the residue was very bitter and, under the previously mentioned conditions, formed needle-shaped crystals, they state that one may conclude, without fear of contradiction, that quassin is present. As to the other bitter principle, less readily soluble in water than quassin, it is said to have the property of becoming coloured blue when evaporated on a water-bath in the presence of a little chlorine

water, and to be coloured violet by concentrated sulphuric acid. These reactions were compared with those afforded by saponin, and, although not agreeing completely, the presence of the latter was considered probable on account of the frothing of the liquid when shaken with water. Notwithstanding the above affirmations, it is remarked that, as the quantity of material operated upon was small, they give these results only as indications, and propose to repeat the experiments with one or two kilos of the seed. The amount of material actually used is nowhere stated.

(4) On finally extracting the seeds with water they obtained from the aqueous liquid a residue of gummy matter amounting to 20·5 per cent. The material left after extraction with the above solvents was found to contain an amount of insoluble albuminoid matter corresponding to 5·937 per cent. in the original seeds.

It will be seen from the results of the experiments of Heckel and Schlagdenhauffen, as above outlined, that they did not isolate any definite active principle from Kô-sam seeds, or even obtain it in such a state of purity as to permit of its satisfactory identification. In fact, they have not recorded in their paper a single analysis of an individual substance. It is, therefore, somewhat surprising that they should repeatedly and so positively affirm that the seeds in question contain quassin, as may be seen from the following sentences, which are literally quoted :—

" Comme on a pu le constater par l'analyse précédente, la graine de Kô-sam renferme comme principe dominant la quassine, ainsi qu'il était permis de la prévoir."

" En somme, le Kô-sam doit son action à la quassine, et il y a bel âge que l'emploi de ce principe actif est populaire en Europe par l'usage quotidien que l'on en fait dans le *Quassia amara*, si bien que le nouveau remède contre la dysenterie de M. Dybowski n'a rien de nouveau, les Abyssins l'employant de temps sans doute immémorial."

" Cette étude aura pour résultat de mettre les faits relatifs à ce pretendu nouveau medicament à leur veritable point scientifique, et, dès lors, les médecins coloniaux pourront poursuivre leurs expériences sur le Kô-sam en toute connaissance de cause."

The conclusions of Heckel and Schlagdenhauffen have elicited some comments from Dybowski (*loc. cit.*, No. 48, pp. 129-131), but, unfortunately, these are not altogether consistent, and, therefore, only tend to produce further confusion. Dybowski remarks that Schlagdenhauffen has made of Kô-sam a very complete analysis and a conscientious study, but that the conclusions Heckel draws therefrom are totally wanting in scientific precision. In the chemical portion of their paper they are said to err in two respects, which he will indicate. It appears to him, and an examination made by Bertrand likewise leads him to presume, that the fruits of *Brucea sumatrana* contain quassin. But to be able to make such an affirmation, and not give an *à priori* conclusion, it would have been better, in his opinion, to precisely characterise this substance by an elementary analysis, and by determining its crystalline form, melting point, solubility, etc. None of these data have been recorded, and the negative characters, together with the bitterness of the substance, to which Heckel appears to attach so much importance, and upon which he bases his conclusion, are considered inadequate and not to permit of any scientific deduction. Dybowski thinks that Schlagdenhauffen has overlooked the most interesting point in the study of Kô-sam, and that as he has mentioned the occurrence of " another bitter principle " he should have searched for this, the rest being of little importance. He then proceeds to state that Bertrand has isolated a glucoside having extremely active properties, and that it is the discovery of this substance, not the presence of quassin, which entitles Kô-sam to be regarded as a new remedy for dysentery.

A still later publication (*loc. cit.*, No. 50, pp. 196-201) embraces a conjoint study of Kô-sam, in which the botanical characters are considered by Dybowski, the chemical composition by Bertrand, and the physiological action by Phisalix. Although Bertrand, in his very brief communication, has indicated that he only gives the results of a preliminary investigation, his conclusion as to the glucosidal nature of the assumed active principle is not supported by any satisfactory experimental evidence of its correctness. After noting that the seeds contain 19·5 per cent. of fatty oil, he states that it is in the substances extracted by alcohol that one finds the active principle—kosamine, as he proposes to call it. This is said to possess extraordinary bitterness, and to be related to the glucosides, since it afforded a reducing sugar, probably glucose, when boiled with dilute acids, but the products of its hydrolysis were not determined.

Kosamine is described as being practically insoluble in most of the anhydrous solvents, such as petroleum ether, carbon disulphide, chloroform, &c., but to dissolve readily in water and in aqueous alcohol. It is not precipitated by either neutral or basic lead acetate, and it was by means of these properties that he was able to separate it from the various other substances accompanying it in the seeds, such as oil, resin, acids, &c. The subsequent remark, however, is somewhat significant, that he does not insist at present upon the chemical properties of kosamine, hoping to return to the subject when a sufficient quantity of the fruits shall have been obtained to enable him to complete the study. He also notes that he considered it more useful to determine the physiological properties of this active principle than to satisfy his curiosity as a chemist by reactions which are always destructive. Inasmuch as Kô-sam seeds have been observed by us to contain a considerable amount of a reducing sugar, it would be of some interest to learn how the so-called kosamine had been separated in a state of sufficient purity to even permit of its identification as a glucoside. No description, however, of this substance is given which would indicate that it was obtained in any othe form than in solution, and it is recorded by Phisalix that he received it from Bertrand in this form for his physiological experiments.

The uncertainty respecting the individuality of the substance designated as kosamine naturally detracts from the importance and interest which the results of the study of its physiological action would otherwise possess, and it, therefore, does not seem necessary that the properties attributed to it should be considered here.

With this survey of the subject we proceed to give the results of our own investigation.

EXPERIMENTAL.

The material for this investigation was obtained through the kindness of Mr. H. N. Ridley, Director of the Botanic Gardens of the Straits Settlements, Singapore, who had specially procured a quantity of the seeds for Messrs. Burroughs, Wellcome and Co., of London. We had thus the assurance that the material was perfectly authentic.

The seeds are relatively small, the weight of thirty being about 1 Gm. When crushed, they develop a peculiar cheese-like odour, reminding of some of the fatty acids. The kernel of the seed possesses an intensely and persistently bitter taste. Before proceeding to a complete examination the following preliminary experiments were made :—

Test for Alkaloid.—10 Gm. of the powdered seeds were digested with Prollius' fluid and filtered. The filtrate left an oily residue, which, when treated with acidulated water, gave no reaction for alkaloid.

Extraction with various Solvents.—In order to ascertain the general character of the constituents, 50 Gm. of the seeds were extracted successively in a Soxhlet apparatus with the following liquids. After removing the solvents, the residual extracts were kept in a water-oven until of constant weight.

(1) Petroleum (b.p. 40—50°)	gave	10·88	Gm.	=	21·76	per cent.
(2) Ether	„	0·17	„	=	0·34	„
(3) Chloroform	„	0·65	„	=	1·30	„
(4) Alcohol	„	1·92	„	=	3·84	„
					27·24	„

The petroleum extract was a light yellow oil, very sparingly soluble in cold, but soluble in hot alcohol, and separating on cooling. The ether and chloroform extracts were resinous, and of a greenish-brown colour. When warmed with a little water and filtered, the solution from the ether extract was only faintly coloured by ferric chloride, while that from the chloroform extract gave a deep purple-brown colour. The alcoholic extract was dark brown, and of a resinous nature. When taken up with a little hot water and filtered, the aqueous liquid gave a deep olive-green colour with ferric chloride, was coloured intensely yellow by alkalis, and reduced Fehling's solution. When acidulated it gave reactions with the usual alkaloid reagents, which were evidently due to soluble proteid substances.

Test for an Enzyme.—100 Gm. of the ground seeds were macerated with water at the ordinary temperature for three days, and to the filtered liquid about three times its volume of alcohol was added. After standing a few hours, the flocculent precipitate was filtered off, washed with a little alcohol, and dried over sulphuric acid. The yield of product was 3 Gm. It was a grayish powder, which dissolved readily in water, forming a brown solution. The latter, when acidulated with acetic acid, was rendered slightly turbid by the usual proteid reagents. When a little crystallised amygdalin was brought into an aqueous solution of the substance, or into a mixture of the crushed seeds with water, the odour of benzaldehyde was rapidly developed. In contact with potassium myronate the odour of mustard oil could not be so positively recognised. Although the substance obtained by the above method was necessarily impure, it is evident that the seeds contain a hydrolytic enzyme.

Quantitative Determination of Tannin.—As most of the drugs employed in the treatment of dysentery contain more or less tannin, and as the presence of such a substance had been indicated by the preceding experiments, it seemed desirable to determine the amount contained in Kô-sam seeds. 20 Gm. of the powdered seeds were extracted with successive small portions of boiling water, and the cold, filtered liquid diluted to the volume of 250 C.c. 50 C.c. of this liquid when evaporated, and the residue dried in a water-oven till of constant weight, afforded 0·600 Gm. of extract. Another portion of the liquid was allowed to macerate with hide powder for two days. 50 C.c. of this filtered liquid, when evaporated and the residue dried, as before, till of constant weight, afforded 0·527 Gm. of extract. From these results the amount of substance absorbed by the hide powder, which is to be regarded as tannin, corresponds to 1·8 per cent. of the seeds. It was observed that, even after prolonged treatment with hide powder, the liquid still gave a greenish colour with ferric salts, but this was due, as will be seen later, to a substance differing essentially from tannin.

Separation of the Constituents of the Seeds.

After the preceding experiments a larger quantity of material was operated upon, as follows:—4 kilos of the finely-ground seeds were extracted in a percolator with cold alcohol, but as this removed but a small proportion of the fatty oil it was followed by light petroleum, which removed a large amount, and the extraction was then finally completed with alcohol. After distilling the petroleum and alcohol from these liquids, the residues were combined, a little water added, and steam passed through the mixture, in a distilling flask, in order to separate any volatile substances. The distillate had a strongly acid reaction. It was first shaken out with ether, and, after the removal of the latter, there remained a small amount (about 1·5 Gm.) of a brown, limpid liquid, which had the characteristic odour of the bruised seeds. On distillation, under ordinary pressure, it passed over between 100 and 190° as a faintly yellow liquid, having an odour suggestive of the ethyl esters of butyric and valeric acids. It was accordingly hydrolysed with an alcoholic solution of potassium hydroxide, steam distilled, and the distillate, which contained some oily drops, extracted with ether. After drying the latter liquid, and removing the ether, a very small amount of an oil was obtained, which had a somewhat aromatic odour, but which could not be further examined. The alkaline liquid remaining from the hydrolysis was acidulated with sulphuric acid and steam distilled. The clear acid distillate was treated with barium carbonate, filtered and evaporated, when a very small amount of a light yellow syrup was obtained, which afforded the reactions indicative of the barium salt of a butyric acid. The original aqueous distillate, which had been extracted with ether, was neutralised with barium carbonate. After filtering and evaporating, a syrupy liquid was obtained, which, on standing for some time, formed a crystalline mass. Its aqueous solution gave with silver nitrate a dense white precipitate which soon became black, owing to reduction, thus indicating the presence of formic acid, which was apparently associated with a very small amount of acetic acid. After separating the volatile substances, there remained in the distilling flask a mixture consisting of a dark coloured oily layer and a lower aqueous liquid. These were separated, the oily layer was diluted with light petroleum, filtered, and the petroleum removed by distillation.

(1) *Fatty Oil.*

The total amount of oil obtained was 803 Gm., or 20 per cent. of the original drug. It had a dark green colour, due to the presence of chlorophyll. Its density at 17° was 0·917. When a little of it was shaken with a mixture of nitric acid and water, and subsequently heated for a few minutes in a water-bath, it formed, after standing for a few hours, a soft, brownish-yellow mass. 725 Gm. of the oil were hydrolysed by boiling with 185 Gm. of potassium hydroxide, previously dissolved in alcohol. The alcohol was then distilled off, the residual strongly alkaline soap mixed with sand, dried, and extracted in a Soxhlet apparatus with light petroleum.

(*a*) *Neutral Constituents of the Oil.*—After the removal of the petroleum, a yellow, viscid oil was obtained, which had a peculiar odour. This was dissolved in hot glacial acetic acid, and, on cooling, a quantity of minute needle-shaped crystals was deposited. This crystalline substance was collected, washed with a little glacial acetic acid, and dried on a porous tile. It was then dissolved in boiling ethyl acetate, from which, on cooling, it separated in beautiful glistening leaflets, and when dried on a porous tile formed a lustrous mat. It melted at 67-68°. When again crystallised from ethyl acetate its melting point remained unchanged, and it was not affected by a further crystallisation from absolute alcohol.

0·1390 Gm. gave 0·4310 CO_2 and 0.1845 H_2O. C = 84·6; H = 14·7.

$C_{31}H_{64}$ requires C = 85·3 ; H = 14·7 per cent.

This substance was thus found to be a hydrocarbon. It was nearly insoluble in the usual organic solvents at the ordinary temperature, but more readily soluble in the hot liquids. When dissolved in dry ether it did not decolorise a solution of bromine in the same solvent. In all its properties it appears to be identical with the saturated hydrocarbon, hentriacontane, $C_{31}H_{64}$ (m.p. 68·1°), which has hitherto only been found in nature in beeswax. (Compare Beilstein's 'Handbuch der org. Chemie,' 1, p. 107.)

Although solid hydrocarbons, of both the aliphatic and the aromatic series, have been found in various essential oils (*Chem. Centralblatt*, 1902, II., p. 1117), comparatively few have been more directly isolated from plants, and these do not appear to have been very precisely identified. (Compare *Amer. Journ. Pharm.*, 1888, p. 321.)

The glacial acetic acid mother liquor from which the hydrocarbon was first obtained, deposited, on standing, a further amount of crystalline product, which was collected, dried, and recrystallised in the first instance from the first ethyl acetate mother liquor from the hydrocarbon, and finally from absolute alcohol. As thus obtained it melted between 70 and 85°, and, though obviously a mixture, it indicated some substance having a higher melting point than the hydrocarbon. The glacial acetic acid mother liquor, after standing for several days, afforded a still further amount of a white, crystalline product, which melted indefinitely between 110 and 130°.

The ethyl acetate mother liquor afforded, on evaporation to dryness, a crystalline residue, which melted like the above product between 110 and 130°. All the higher melting substance was then combined and recrystallised many times from absolute alcohol. The final product, representing the portion least soluble in alcohol melted indefinitely between 112 and 129°. It was analysed.

0·1304 Gm. gave 0·3937 CO_2 and 0·1438 H_2O. C = 82·3 ; H = 12·2

This substance gave with chloroform, together with acetic anhydride and sulphuric acid, a colour reaction resembling that shown by the cholesterols and allied substances. The cholesterols, $C_{26}H_{44}O$, require, however, C = 83·9 and H = 11·8 per cent. The discrepancy in the figures could not be attributed to the presence of the hydrocarbon, which might seem likely from the melting point and a consideration of the very sparing solubility of the hydrocarbon in alcohol, since this requires 85·3 per cent. of carbon.

The several alcoholic mother liquors obtained in the course of separating the fraction melting at 112-129° were ultimately combined and concentrated to a very small volume. From this liquid there separated a fraction, exceeding in amount the preceding one, which melted at 130-131°. It was recrystallised from absolute alcohol without appreciably altering its melting point. On analysis:—

0·0412 Gm. gave 0·1240 CO_2 and 0·0456 H_2O. C = 82·1 ; H = 12·3
0·1228 Gm. gave 0·3699 CO_2 and 0·1307 H_2O. C = 82·1 ; H = 11·8.

When again crystallised from absolute alcohol it melted at 130-132°. On analysis:—

0·1270 Gm. gave 0·3868 CO_2 and 0·1376 H_2O. C = 83·0 ; H = 12·0;
$C_{20}H_{34}O$ requires C = 82·8 ; H = 11·7 per cent.

A determination of its specific rotation, in chloroform, gave the following result:—

$\alpha = -0°54'$; $c = 2·388$; $l = 1$ dcm. Hence $[\alpha]_D^{23°} = -37·7°$.

When a small amount of the substance was dissolved in about 2 C.c. of chloroform, 20 drops of acetic anhydride added, and subsequently one drop of concentrated sulphuric acid introduced, a transient rose-pink colour was produced, changing successively to blue, green, and, on long standing, to brown.

Several substances corresponding to the formula $C_{20}H_{34}O$, which in their general character appear to be related to the cholesterols, have already been found in various plants, and designated respectively as quebrachol, cupreol, and cinchol or cinchocerotin. (Compare Beilstein's 'Handbuch der org. Chemie,' 3 edit., band II., p. 1068.) It is therefore probable that, like the cholesterols, they constitute a distinct class of substances.

(*b*) *Acid Constituents of the Oil.*—The soap resulting from the hydrolysis of 725 Gm. of oil, and which, after being dried, had been thoroughly extracted with light petroleum for the removal of the neutral constituents, as previously described, was then dissolved in hot water. The aqueous solution was acidulated with hydrochloric acid, when the acids separated in the form of a semi-solid layer on the surface of the liquid. They were taken up with ether, the solution washed with water, dried with calcium chloride, and the ether removed. The residual oily liquid was then distilled under a pressure of 50 Mm. It commenced to distil at 240°, but only a few drops passed over up to 260°, between which point and 270° the remainder distilled as a light yellow oil. The most constant point during the distillation was between 262 and 265°, when but little remained in the distilling flask.

The iodine value of these mixed fatty acids, as determined by the Hübl method, was found to be 97·2. As oleic acid has a theoretical iodine value of 90·07, this result indicated the presence of a still more unsaturated acid, such as linolic acid, which has a theoretical iodine value of 181·43, especially as it was subsequently proved that some saturated acids were also present.

After standing for several hours the distilled oil formed a paste, owing to the separation of a quantity of crystals. This paste was then filtered with the aid of a pump, and the crystalline portion well pressed between folds of filter paper, in order to more completely free it from adhering oil. It was subsequently dissolved in warm 90 per cent. alcohol, and set aside to crystallise. The recrystallised acid was obtained from this alcoholic solution in three successive crops. The first crop was dissolved in light petroleum, and the solution soon deposited a quantity of beautiful glistening leaflets, melting at 68-69°. A solution of the acid in dry ether did not decolorise a solution of bromine in the same solvent. For analysis a portion was again crystallised from light petroleum, but without the melting point becoming changed.

0·1010 Gm. gave 0·2795 CO_2 and 0·1176 H_2O. C = 75·5 ; H = 12·9
0·1065 Gm. gave 0·2954 CO_2 and 0·1242 H_2O. C = 75·6 ; H = 12·9
$C_{18}H_{36}O_2$ requires C = 76·1 ; H = 12·7 per cent.

It is evident that this substance was stearic acid.

The alcoholic mother liquor from the first crop of crystals afforded a smaller second crop, which was recrystallised from 90 per cent. alcohol, when it melted at 55-56°. This was further treated in conjunction with a second batch of crystalline product which had separated from the oily mixture of acids after the above first filtration. The alcoholic filtrate from the second crop of crystals finally deposited a third crop. This was small in amount, handsomely crystalline, and melted at 53-54°. After recrystallisation from 90 per cent. alcohol it melted at 54°. On analysis:

0·1389 Gm. gave 0·3800 CO_2 and 0·1568 H_2O. C = 74·6 ; H = 12·5 ;
$C_{16}H_{32}O_2$ requires C = 75·0 ; H = 12·5 per cent.

This substance was undoubtedly palmitic acid.

Further evidence of this was afforded by an examination of the second batch of crystalline product from the original mixture of acids. This product was first recrystallised from 90 per cent. alcohol, when it melted at 53-54°. It was then combined with the before-mentioned second crop from alcohol, and the whole again recrystallised from 90 per cent. alcohol. It then melted at 57-59°, and distilled under 50 Mm. pressure between 240 and 255°.

A portion of the oily acid, from which the above-described crystalline acids had separated and had been removed from the liquid by filtration. was converted into a lead salt by heating with an excess of lead carbonate and a little water on a water-bath. The product was a homogeneous mass, which on cooling became hard. It was disintegrated and extracted with hot ether, the solution filtered, and shaken with an excess of dilute hydrochloric acid. The ethereal solution of the liberated fatty acid was then washed with water, dried with calcium chloride, and the ether removed. The residual light yellow liquid when distilled under a pressure of 50 Mm. passed over chiefly at 261-264° as a nearly colourless oil. On cooling slightly below the ordinary temperature, a small amount of colourless, crystalline leaflets separated out. The oily acid thus obtained was analysed with the following result:—

0·1177 Gm. gave 0·3269 CO_2 and 0·1265 H_2O. C=75·7; H=11·9.
0·0957 Gm. gave 0·2644 CO_2 and 0·1032 H_2O. C=75·3; H=12·0.
Oleic acid, $C_{18}H_{34}O_2$, requires C = 76·6; H = 12·0 per cent.
Linolic acid, $C_{18}H_{32}O_2$, requires C = 77·1; H = 11·4 per cent.

A determination of the iodine value of this liquid acid, by Hübl's method, gave the figure 99·5, which is appreciably higher than the theoretical value for pure oleic acid, and the analytical figures are also not in agreement with the latter. As palmitic acid, $C_{16}H_{32}O_2$, requires C = 75·0; H = 12·5 per cent., the above results, together with a consideration of the action of nitrous acid, would seem to render it probable that the oily acid was composed of a mixture of oleic and linolic acids, together with some palmitic acid which had evidently not been completely separated by the process of purification through the lead salt.

(2) *Constituents of the Aqueous Liquid.*

It has been previously stated that after the distillation of the volatile substances, by steam, from the combined petroleum and alcoholic extracts of the seeds, there remained in the distilling flask an upper layer of fatty oil and a lower aqueous liquid, which were separated.

The aqueous liquid was turbid and did not afford a clear filtrate, owing apparently to a small amount of suspended resin. It was therefore shaken once with ether, which rendered it perfectly clear. The ether solution was distilled, and the residue therefrom, together with some resinous or other substances that had been obtained by filtering the petroleum solution of the fatty oil, was mixed with clean sand, dried and extracted in a Soxhlet apparatus, first with light petroleum, then with chloroform, and subsequently with alcohol. On finally extracting with water, nothing more was dissolved. The petroleum had extracted only a few grammes of dark-coloured, fatty matter. From the chloroform extract an appreciable amount of a dark-coloured substance was obtained, which was further treated in connection with a larger amount of substance subsequently obtained by extracting the above aqueous liquid with chloroform. The alcoholic extract was concentrated and poured into water, when a small quantity of resin was precipitated, which, when dried, formed a dark brown powder, and was not further examined.

The aqueous liquid, clarified by shaking with ether, had a reddish-yellow colour, an intensely bitter taste, and a strongly acid reaction. It gave a deep green colour with ferric chloride, an intense yellow colour with alkalis, a dense precipitate with tannic acid, and abundantly reduced Fehling's solution. It was shaken with six successive portions of chloroform, when finally nothing further was extracted. After the removal of the chloroform by distillation, a quantity of a dark brown, very viscid syrup was obtained. The latter, together with the residue obtained from the previously mentioned chloroform extract, was dissolved in hot alcohol, filtered, and the hot alcoholic liquid poured into a quantity of boiling water. This aqueous liquid was then rapidly filtered from some dark brown resin, evaporated to a small volume, mixed with prepared sawdust, and heated on a water-bath until quite dry. It was then extracted in a Soxhlet apparatus with dry ether. This slowly removed a substance which was only sparingly soluble, for it separated as a faintly green-coloured, granular crust on the bottom and sides of the flask whilst the extraction was in progress. The extraction was continued until nothing further was removed. The substance was collected, packed into a smaller Soxhlet apparatus, and again extracted with dry ether, when it was obtained in the same form as before, but much lighter in colour. The amount of this substance actually obtained was 6·5 Gm. For the purpose of comparison it will subsequently be referred to as "bitter principle (α)." It had the following characters:—

Bitter Principle (α).—It is a fine, granular powder of a greenish tinge, due to a trace of chlorophyll. Its taste is intensely and persistently bitter. Its melting-point is very indefinite, but below 100°. It contains no nitrogen. Numerous attempts were made to obtain this substance in a crystalline form, but without success. There was, therefore, no assurance of its being an individual substance. Nevertheless, merely for the purpose of a comparison with quassin, which Heckel and Schlagdenhauffen have so confidently stated to represent the chief bitter principle of Kô-sam seeds, it was analysed.

0·1373 Gm. gave 0·2950 CO_2 and 0·0863 H_2O. C = 58·6; H = 7·0
0·1364 Gm. gave 0·2932 CO_2 and 0·0838 H_2O. C = 58·6; H = 6·8

The colour of its solution in chloroform did not permit of determining its optical rotation. It is very freely soluble in absolute alcohol and in chloroform, but very sparingly soluble in ether, even when warm. It is also very sparingly soluble in cold water, more readily on warming, and the solution becomes turbid on cooling, but the separated substance shows no tendency to crystallise. The aqueous solution slightly reduces Fehling's solution, and apparently to no greater extent after it has been heated with an acid. It is precipitated by tannic acid, and gives a deep brownish-black colour with ferric chloride.

The dry substance gives with concentrated sulphuric acid a brown colour, and about the same coloration with nitric acid. It dissolves, with a yellow colour, in a 10 per cent. solution of potassium hydroxide, and is re-precipitated on the addition of an acid. It is also soluble in a concentrated solution of sodium carbonate, forming a yellow solution.

Four grammes of the bitter principle were fused with 20 Gm. of potassium hydroxide, and the mixture kept at a temperature of 200°-220° until frothing ceased. The dark brown melt was taken up with water, acidulated with sulphuric acid, and steam distilled. The acid distillate was neutralised with barium carbonate, filtered, and evaporated, when it formed a light yellow syrup, which became crystalline. The solution of this salt reduced silver nitrate and mercuric chloride, and, when heated with a little alcohol and sulphuric acid, developed the odour of ethyl butyrate. The volatile products of the fusion, therefore, consisted chiefly of formic acid, with apparently a little of a butyric acid.

The acid residue from the steam distillation was saturated with ammonium sulphate and shaken out several times with ether. The ethereal solution was washed, dried, and the ether removed. The residue was a light brown varnish, from which nothing crystalline could be obtained. Its aqueous solution gave a brownish-black coloration with ferric chloride.

In order to compare the characters of the above-described bitter principle (α) with those of quassin, which, as recorded in chemical literature, are somewhat conflicting, a specimen of "Crystallised Quassin" was procured. It was perfectly white and crystalline, but was recrystallised from hot absolute alcohol, from which it separated on cooling in fine white glistening needles. It then had the following characters:—

It melted sharply at 252-253°. On analysis:

0·0645 Gm. gave 0·1584 CO_2 and 0·0424 H_2O. C = 67·0; H = 7·3
0·1173 Gm. gave 0·2889 CO_2 and 0·0773 H_2O. C = 67·2; H = 7·3

Various formulæ have been assigned to the substances designated as quassin, but the above figures would agree best for the formula $C_{28}H_{36}O_8$, which requires C = 67·2; H = 7·2 per cent.

A determination of the specific rotation, in chloroform, gave the following result:—

$[\alpha]_D = + 0°56'$; c = 2·8; l = 1 dcm. Hence $[\alpha]_D = + 33·3°$

It was only moderately soluble in hot absolute alcohol, and, on cooling, separated almost immediately in fine, glistening needles. It was very sparingly soluble in cold, more readily in boiling water, from which, on cooling, it separated in small, glistening needles. It did not reduce Fehling's solution, nor did it give any colour with ferric chloride. It was slowly soluble in a cold 10 per cent. solution of potassium hydroxide, but without resinification, which has been stated to take place in the case of quassin.

The dry substance afforded with concentrated sulphuric acid a bright emerald-green colour, soon changing to yellow. Concentrated nitric acid causes no change of colour.

In Beilstein's 'Handbuch der org. Chemie,' 3rd edit., III., p. 646, the characters ascribed to quassin are in some respects essentially different from the above, as will be seen from the following description there recorded. "Fine needles. Melting point, 210-211°. Very readily soluble in alcohol, acetic acid, and chloroform, but sparingly soluble in ether. In chloroform $[\alpha]_D = +37·8°$. Soluble in free alkalis, but not in alkali carbonates, and is resinified by alkalis. Its aqueous solution reduces Fehling's solution, but is not coloured by ferric chloride.

In Schmidt's *Pharm. Chemie*, 3rd edit., II., p. 1,516, it is stated regarding quassin that "concentrated sulphuric acid dissolves it without colour, and on the addition of a little sugar a red coloration is produced. When fused with potassium hydroxide, it affords protocatechuic and acetic acids."

The results of the above comparative experiments render it evident that the bitter principle (*α*) isolated by us from Kô-sam seeds differs in many important respects from quassin, and, with reference to the method of purification employed, it cannot be considered at all probable that it contains the latter.

The aqueous liquid, from which the above-described bitter principle (*α*) had been extracted by shaking several times with chloroform, was then further examined. It still possessed a strongly bitter taste. On the addition of basic lead acetate a dense, yellow precipitate was obtained, which was separated with the aid of a pump, and washed with a little water. This precipitate and the filtrate therefrom were then separately treated as follows:—

(A) *Basic Lead Acetate Precipitate.*—This was suspended in water, decomposed by hydrogen sulphide, and the liquid filtered. The filtrate had a bright yellow colour, and gave a deep green coloration with ferric chloride. When concentrated, it formed a reddish-yellow syrup, which after standing for two weeks, showed no sign of crystallisation. It was then mixed with prepared sawdust, thoroughly dried, and extracted successively in a Soxhlet apparatus with ether, chloroform, ethyl acetate, and absolute alcohol. The ethereal extract afforded a very slight, crystalline residue, the alcoholic solution of which gave a deed emerald-green colour with ferric chloride. The residue from the chloroform extract was also very slight, but amorphous, and gave a similar coloration with ferric chloride. The extractions with ethyl acetate and with alcohol afforded rather darker coloured liquids, from which nothing crystalline separated. After distilling off the respective solvents, the residues from the latter two extracts were mixed, and, suspecting the presence of some substance of the quercetin type, the whole was dissolved in warm alcohol, to which a concentrated solution of 20 Gm. of potassium acetate in hot alcohol was subsequently added. (Compare *Journ. Chem. Soc.*, 1899, **75**, p. 433.) As this afforded nothing crystalline the alcohol was removed, the residue taken up with water, and the aqueous solution, after being saturated with ammonium sulphate, shaken out many times with ether. The ethereal liquid, which had a bright yellow colour, was washed once with water, dried with calcium chloride, and the ether removed. The residue gave a bright green colour with ferric chloride and a deep yellow colour with alkalis, but afforded nothing crystalline; on the addition of water only a tarry substance was obtained.

(B) *Filtrate from Basic Lead Acetate Precipitate.*—After the removal of the lead by hydrogen sulphide, and filtering, a yellow liquid was obtained, which, when concentrated, formed a reddish-yellow syrup. It was allowed to stand for two weeks, but nothing crystalline separated. It gave no precipitate with tannic acid, as the original aqueous liquid did before the extraction of the bitter principle with chloroform, and it was only very slightly coloured by ferric chloride. It still possessed, however, an intensely bitter taste, and abundantly reduced Fehling's solution. It was therefore mixed with prepared sawdust, thoroughly dried, and as in the case of the lead acetate precipitate, extracted successively in a Soxhlet apparatus with ether, chloroform, ethyl acetate, and absolute alcohol. Both the ether and chloroform extracts afforded only very slight residues. The ethyl acetate and alcohol extracts were dark in colour, and afforded only syrupy residues, which contained an abundance of a reducing sugar, whose osazone melted at 204-205°.

Although it was to be presumed that if any quassin were contained in the seeds it would have been completely removed by the method employed in the isolation of bitter principle (*α*), yet as Heckel and Schlagdenhauffen have indicated in their paper (*loc. cit.*) that they separated what they assumed to be quassin by extracting the alcoholic extract of the seeds with amyl alcohol, it was thought desirable to subject the above-mentioned, very bitter, ethyl acetate and alcoholic extracts to a similar treatment. The residues from these two extracts were therefore mixed, dissolved in water, and the liquid shaken out many times with hot amyl alcohol. This afforded a dark coloured liquid, which was washed with water, and the amyl alcohol removed by distillation under diminished pressure. A considerable amount of a dark coloured, amorphous extract was thus obtained, which possessed a very bitter taste. An attempt was made to purify it by dissolving in warm ethyl alcohol, mixing the solution with prepared sawdust, and after thoroughly drying, extracting successively in a Soxhlet apparatus with ether, chloroform, and absolute alcohol. All these extracts afforded amorphous residues, which were dark in colour, possessed a bitter taste, and reduced Fehling's solution.

These experiments afforded ample evidence that the bitter principle (*β*) contained in the aqueous solution, after the removal by chloroform of bitter principle (*α*), is essentially different from the latter, and also that it is not quassin.

The powdered seeds, which in the beginning had been thoroughly extracted with light petroleum and with alcohol, were dried, and a portion finally extracted with hot water. This afforded a very dark coloured liquid, which was concentrated and mixed with alcohol, when a considerable amount of gummy matter was precipitated. The filtered liquid, after the removal of the alcohol, was mixed with prepared sawdust, dried, and extracted in a Soxhlet apparatus with strong alcohol, but it yielded nothing of interest.

Summary and Conclusions.

The results of this investigation may be briefly summarised as follows:—

Kô-sam seeds contain no alkaloid. The amount of tannin found was 1·8 per cent. They contain a small amount of a hydrolytic enzyme. The combined alcoholic and petroleum extracts of the seeds afforded the following substances: A small amount of an inconstantly boiling mixture of esters, probably of a butyric acid, and having the odour of the crushed seeds; also a very small amount of free formic acid.

A fatty oil, in an amount equivalent to 20 per cent. of the seeds, consisting chiefly of the glycerides of oleic, linolic stearic, and palmitic acids, associated with a saturated hydrocarbon, hentriacontane, $C_{31}H_{64}$, m.p. 67°-68°, and a crystalline substance, $C_{20}H_{34}O$. The latter melts at 130°-133°, and has $[\alpha]_D^{23^\circ} = -37{\cdot}7^\circ$; it is allied to the cholesterols, and agrees in composition with quebrachol, cupreol and cinchol. (Compare Beilstein's 'Handbuch der org. Chemie,' 3rd edit., ii., p. 1068).

Two Bitter Principles.—One of these (*a*) was completely extracted by chloroform from an aqueous solution of them, which also contained a quantity of a reducing sugar, and a very small amount of some substance which caused the solution to give a deep green colour with ferric chloride, but which was not isolated. Bitter principle (*a*), which was thus soluble in chloroform, was subsequently obtained from ether, in which it is only sparingly soluble, as a light coloured amorphous powder. Bitter principle (*β*), which was insoluble in chloroform under the conditions mentioned, could only be obtained as a brown extract. It was definitely shown that neither of these bitter principles can be regarded as quassin.

The results of this investigation, therefore, do not enable us to confirm the statement of Heckel and Schlagdenhauffen (*loc. cit.*) that Kô-sam seeds contain quassin, of which they have in fact presented no satisfactory evidence, nor do they afford any justification of the statement of Bertrand (*loc. cit.*) respecting the glucosidal nature of a bitter principle which he has termed "kosamine." It is to be noted, moreover, that Bertrand has given no indication of having actually isolated any definite substance to which such a name could properly be attached. Although mentioning its insolubility in certain anhydrous solvents, and that it is not precipitated by either neutral or basic lead acetate, by means of which it is stated that it may be separated from such substances as oil, resin, acids, etc., there is still no evidence that the principle to which he attributes the activity of the seeds was obtained in any more definite form than an aqueous solution, which must also have contained a considerable quantity of sugar.

A correct conclusion respecting the active principle of Kô-sam seeds could apparently only be formed when some definite constituent of them, such as the bitter principle (*a*), isolated by us, is tested clinically with reference to its particular value in the treatment of dysentery. It is more probable that the therapeutic value of the drug depends upon the combined action of its constituents.

In this connection, it would seem desirable to ascertain whether other parts of this plant, such as the bark, may not be as efficient as the seeds, since the latter are somewhat difficult to obtain in quantity. It would also be of interest to determine, by a comparative examination, the constituents of the closely-allied Abyssinian plant, *Brucea antidysenterica*, which, on account of the properties indicated by its name, is highly esteemed in its native country.

LIQUOR RHEI CONCENTRATUS, B.P.

BY F. C. J. BIRD.

This liquor is prepared from rhubarb root, in No. 5 powder, by percolation with 20 per cent. alcohol, according to the special method adopted in the Pharmacopœia for the greater number of the concentrated liquors. It cannot be considered to be quite a satisfactory preparation, for on keeping it almost invariably throws down a brownish yellow deposit, which often adheres to the sides of the bottle containing it. After a considerable time, however, deposition ceases, and the liquor becomes permanently bright.

The official process for the extraction of the root is, in the case of liquor rhei conc., but moderately successful. The following results were obtained with a small experimental quantity, prepared by the official process, very carefully carried out:—

Finished Liquor.	Extractive.	Per cent. of Total Available Extractive.
20 fl. oz.	13·1	59·6
Subsequent percolate.		
1st, 10 fl. oz.	7·4	16·8
2nd, 10 fl. oz.	4·4	10·0
3rd, 10 fl. oz	3·7	8·7
4th, 10 fl. oz.	1·9	4·2
5th, 10 fl. oz.	0·3	0·6
6th, 10 fl. oz.	0·	0·1
		100·0

From this it is evident that only about 60 per cent. of the available extractive of the root is contained in the B.P. liquor rhei conc.

A second sample of liquor rhei conc. was prepared from drug containing 8·7 per cent. of moisture (which moisture was allowed for by using a calculated excess of alcohol in the first maceration), and the product submitted to various tests. It was found that, although perfectly brilliant when first prepared, deposition took place on keeping, particularly when the temperature was variable. Weak acid also, on standing, caused a more or less marked turbidity and precipitation, indicating the importance of guarding against loss of alcohol during percolation and storage. From the effect of change of temperature it seemed evident that liquor rhei conc. was a fully saturated solution of the constituents of rhubarb, particularly the resinous ones, and that at a lower temperature this state of saturation could not be maintained, and precipitation took place.

A similar procedure to that recommended for liquor krameriæ conc. in a previous paper—namely, the incorporation with the finished product of a certain amount of a more powerful solvent of the precipitable constituents—appeared likely to improve the formula, and on trial this was found to be so. Of the solvents tried glycerin was the best, but it required to be present to the extent of 15 per cent. to be effective under all conditions. A sample of liquor prepared by the B.P. process, modified as in the formulæ given below, has kept for some months quite free from deposit, and will bear exposure to a temperature just above freezing point without precipitation. The B.P. liquor, when cooled to the same degree, becomes turbid, opaque, and finally thick, and even gelatinous. It is, therefore, suggested, for the production of a permanent liquor rhei conc., that the B.P. formula be extended as follows:—

Concentrated Solution of Rhubarb.

……

. . . . continue percolation with more alcohol, and reserve the first 17 fl. oz., then percolate an additional quantity of 3 fl. oz., remove the alcohol from the latter, and evaporate the residue to a soft extract, dissolving it in glycerin 3 fl. oz.; add to the reserved percolate to produce a final volume of about 20 fl. oz.

When diluted with water, liquor rhei conc., prepared as above, forms a clearer solution than the B.P. preparation, and possesses a slightly sweet taste, due to the glycerin, which is not objectionable.

LIQUOR SENNÆ CONCENTRATUS, B.P.

BY F. C. J. BIRD.

This liquor is one of the most unsatisfactory of the B.P. liquors, on account of its bad keeping qualities and the deposition, with loss of extractive, which takes place on storing it for any length of time. The method of preparation ordered in the B.P. consists in extracting senna leaves, in No. 5 powder, with distilled water by re-percolation. The strong aqueous percolate is then heated to 180° F. for five minutes, and when cold mixed with a certain proportion of alcohol and tincture of ginger to precipitate mucilaginous substances and confer flavour and pungency. After standing for seven days the whole is to be filtered, when the product obtained from the B.P. quantities should, according to the Pharmacopœia, measure 1 pint.

The weak points of the process are that the senna leaves are macerated with distilled water for a period of time, which must, by strictly following the official directions, extend to at least seventy-two hours, and probably much more. With a liquid so prone to decomposition, especially in hot weather, as infusion of senna, this procedure results in fermentation and acidity, and is very likely to interfere with the keeping properties of the final product. Then when the aqueous percolate has reached a volume of 16 fl. oz., it is heated to 180° F. for five minutes. Naturally loss will take place here, varying in amount according to the way in which the operation is carried out, and no allowance is made for this in the formula. In one experiment the percolate, after being heated, measured when cold but 15 fl. oz., so that with an increased relative proportion of spirit the precipitation of mucilaginous substances would be greater and the final volume correspondingly less. There would also be some loss in filtering, so that in that instance the final product could not possibly measure 1 pint.

The process of extraction adopted for senna is perhaps less efficient than in the case of any of the other liquors, the first percolate containing between 55 and 56 per cent. only of the available extractive of the leaves.

1st Percolate.	Sp. Gr.	Extractive Grammes per 100 C.c.	Per Cent. of Total Available Extractive.
16 fl. oz.	1·119	24·3	55·7
Subsequent percolate—			
1st, 5 fl. oz.	1·085	18·0	12·9
2nd, 5 fl. oz.	1·053	11·5	8·3
3rd, 5 fl. oz.	1·039	8·2	5·9
4th, 5 fl. oz.	1·028	6·5	4·7
5th, 5 fl. oz.	1·023	4·5	3·5
6th, 5 fl. oz.	1·016	3·3	2·6
7th, 5 fl. oz.	1·013	2·7	1·9
8th, 5 fl. oz.	1·011	2·0	1·4
9th, 5 fl. oz.	1·007	1·5	1·0
10th, 5 fl. oz.	1·006	1·2	0·8
11th, 5 fl. oz.	1·005	1·1	0·7
12th, 5 fl. oz.	1·004	1·0	0·6

The activity of the various percolates, as far as could be judged by the taste, corresponded with the extractive content. Liquor sennæ conc. made by the B.P. process often filters sluggishly, and the clear liquid on keeping continues to deposit and lose extractive. In the experience of some it has also been found to ferment and keep badly. Although the proportion of alcohol in the formula is fairly high, it does not appear sufficient to promptly cause a satisfactory precipitation of the aqueous liquid previous to filtration; but it is hardly desirable in such a preparation to increase the alcohol to any great extent. After standing from seven to fourteen days the liquor can be filtered quite bright, but if the clear filtrate be afterwards kept it will become cloudy and again deposit. If also it be heated in a water bath, as soon as a temperature of about 120° F. is reached turbidity occurs and the liquor finally becomes quite opaque. If the heating be continued for a time a fine precipitate forms, aggregates, and settles, so that the supernatant fluid remains perfectly clear. On filtering and again heating no further precipitation can be induced.

The following figures were obtained from a sample of bright liquor sennæ conc. before and after heating:—

	Sp. Gr.	Extractive.
Liquor Sennæ Conc. B.P., filtered bright	1·051	17·2
After heating in a closed vessel for half-an-hour to 180° F., and filtering when cold	1·045	16·3

It would therefore appear that a more uniform and satisfactory liquor sennæ conc. can be prepared by the following modification of the B.P. process:—

(1) Substitute chloroform water for distilled water in the extraction of the senna.

(2) Make up the volume of the aqueous percolate, after having been heated to 180° F. for five minutes and cooled, to 16 fl. oz. with distilled water. All odour of chloroform disappears here.

(3) Increase the alcohol in the formula from 2 fl. oz. to 2¼ fl. oz. to compensate for the making up of the volume of the percolate.

(4) When the filtered product has stood for seven days, before filtering heat the whole to 180° F. in a closed vessel for half-an-hour or longer, until the precipitate aggregates and the supernatant liquor becomes quite clear, then cool and filter.

After heating as above the liquor filters quite readily, and the product is brilliant and keeps for months without change. When diluted with water, 1 to 9, the infusion from the modified formula keeps sweet considerably longer than that from the B.P. liquor. It is also slightly darker in colour, but otherwise in taste and appearance there is little perceptible difference.

Guaiacol in Smallpox.—Dr. J. J. Ridge has found the local application of guaiacol in oil 1:80 of great service during the recent outbreak of smallpox. Setting aside the cases of four unvaccinated infants, the mortality among the patients treated with the guaiacol method was only 1 in 44, although several severe confluent causes were among the number cured. The treatment consisted solely in swabbing the whole surface once in four hours with the oily solution of guaiacol. This had the effect of allaying, and, after a few applications, almost abolishing, the irritation; it appeared to reduce the temperature and prevent consequent delirium; under its influence maturation of the pustules was retarded, and they appeared to dry up. It was noted that the guaiacol dressing entirely removed the distinctive and loathsome odour of the eruption, and that the wards where it was in use were as sweet as those employed in the treatment of general disease.—*B. M. J.*, 1/1903, 1,257.

SOUTHERN AND EASTERN SKETCHES (1).

BY G. CLARIDGE DRUCE, M.A., F.L.S., PH.C.

Sicily.

SOME ancestor of mine, remote or otherwise, must have been a nomad, for at times one feels the impulse to move from place to place, and in the early spring I think the feeling is most acute. Nor is there any reason why one "should crucify the flesh," even in Lent, so far as curbing this desire for travel; and, assuming the compliance of one's banker (it is always well to be on the right side of that individual, especially as regards that essential to every chemist, the balance), the chief item to consider is necessarily the destination. Now I have a grievance against my remote nomadic ancestor in that, while transmitting the incurable propensity to wander, he did not also perpetuate a frame of body or of mind, or both, which should be able to bear the wayward and vexing movements which Mother Ocean so often and so distinctly and so unreasonably indulges herself, when a stranger trusting to her is nursed, if not to untroubled sleep, certainly to a lethargic indifference to every one's suffering but his own. Therefore, a journey which shall contain a maximum of land and a minimum of water travelling is the one to choose, and, accordingly, viâ Dover and Calais has been long my only outlet eastwards.

Sicily and Corfu had been the Hesperides of many boyish dreams, and as "everything comes to him who waits," so in time came my chance of visiting the "Land of the Lemon," which possibly a distinguished Oxford don might designate a "lemoncholy" subject, but which proved in no way mournful to me.

CAPUCHIN'S CATACOMB AT PALERMO.

The rapid journey through France to Aix-les-Bains conducted one from chill to genial weather, but it was fortunate that I telegraphed to that inland watering-place, since, at that early date in spring, the hotels were not open. But, being expected, a good dinner awaited us, and a pleasant day was spent in seeing the various thermal baths and appliances at that fashionable place by which the ills that flesh has inherited or acquired may be relieved, and in walking through the charming woods, which at that time were brilliant with violets and primroses, and where the *Helleborus fœtidus* was common, the calcareous nature of the rocks being shown by the abundance of the box (*Buxus sempervirens*) in many situations. The next morning we journeyed on through torrents of rain past the quaint, picturesque town of Chambery, where, in former days, I had enjoyed pleasant botanising, and onward and upwards towards Mont Cenis, with the rain changing to snow on the way, our advent into Italy from the gloom of the tunnel being absolutely startling from the dazzling reflection of the sun on the newly fallen snow, here several feet in thickness. What a pretty journey it is down from the Mont Cenis, and how often I have enjoyed it? but on this occasion the sky soon became overcast, and rain clouds obscured the view as we rushed on to Genoa the superb.

The name is by no means undeserved, for its magnificent position in itself would condone the title were its buildings of a poorer order or its historical events of a less interesting nature. How much, too, it has improved in commercial importance and material prosperity may be realised in reading the description given by Charles Dickens of it in "Pictures from Italy," which he wrote when travelling *en prince* through the various Italian states. Although it may mean increased taxation, United Italy certainly has led to a diminution of beggars, and instead of a ragged and dirty population, which was only too manifest less than a score of years ago, great advances have been made in cleanliness, sanitation, and good clothing, even if the latter be not so picturesque as formerly. The new portion of the city is built on a very grand scale, and the extension of the Corniche road affords a magnificent sea view. Another very beautiful and extensive prospect is obtained from the "Righi," which is reached by a funicular railway.

But we did not halt long, even at Genoa the superb, for the Hesperides were a long way off; so we journeyed on to Spezzia, Rome, and Naples, and then entrusted ourselves to the treacherous sea, which, alas! rolls between Naples and Palermo. The sky was overcast, the fires of Vesuvius were hidden from view by a rain cloud, the sea was, according to the stewardess, not "agitato," and she appeared to be of as truthful an appearance as a woman and an Italian can be; alas for the veracity of the feminine sex. I did not, however, cast it up against her; it was one of the few things I kept down; but the journey was not wholly miserable; one had the advantage and melancholy pleasure of hearing other people in the same boat in more senses than one. Even a twelve hours' sea passage comes to an end some time, but how different we poor mortals are from the elementary bodies; radium can emanate for great spaces of time without appreciable loss—but I need not press the homily.

We were welcomed in Palermo by the sunniest of skies, and a very short interview with the Dogana was sufficient to prove our *bona fides*, and we drove up to the Hôtel des Palmes, a large and excellently-appointed house, decorated with a large number of coloured English prints and good tapestry, and the host, a Signor Ragusa, is a scientist, who is President of the

Natural History Society of Sicily, and specialises in beetles and butterflies and—other insects. The entrance to Palermo is fine, for at either end of the bay stands a boldly outlined limestone hill, that on the left being called the Griffon, and the northern one being the celebrated Monte Pellegrino, long known for its interesting flora. Cabs are very cheap in this city—60c. for a course, a price which leads you to reckless extravagance, for if you want to cross the street you are as likely as not to hail a cab; indeed, in former times, not later than 1790, a man who walked committed a social solecism even worse than the alderman who drank the contents of his finger-bowl. And the custom—of driving, I mean—keeps on, and it has advantages; so our first drive was to the cathedral, especially interesting to us since it was built by an Englishman—Walter of the Mill (Gualtero Offamilio)—in 1169-85, on the site of a still earlier church, which had been turned into a mosque. The present cathedral is very handsome, but the senseless dome, added at the latter end of the eighteenth century by the Neapolitan, Friga, has done much to mar the original design. The interior is very interesting, since it contains the magnificent sarcophagi of porphyry, holding the remains of some of the Norman kings who once held sway in Sicily, including the great King Roger, who was such a princely patron of learning and science. When the sarcophagi were opened, in 1781, the corpse of the Emperor Frederick II. was found in good preservation, and wrapped in sumptuous robes. How handsome one may gather from the coronation mantle, now in the Imperial Treasury at Vienna, which was also made by Saracen artists in Palermo, in the year 1133, and is now in an excellent state of preservation. It is covered with rich embroidery of gold, and round it, in Kufic (early Arabic) characters, is an inscription: [This] "was woven at the Royal Manufactory, the seat of happiness and honour; where prosperity and perfection, merit and distinction abound; which boasts of progress, glorious good fortune, wonderful splendour, and munificent endowment, which rejoices in the fulfilment of hopes and wishes; where days and nights glide by in continual pleasures without end or change; which is animated by feelings of honour and attachment; in promoting happiness, maintaining prosperity, and in encouraging activity. In the capital of Sicily, in the year of the Hegira 528" [A.D. 1133]. Such was the florid description of Palermo then, and much of it was deserved. It was reserved for the later dynasties of Spanish and Bourbon kings to diminish the commercial activity, and to destroy the mental culture which characterised the times when the occupants of the porphyry sarcophagi governed the beautiful island. Another object of special interest in the cathedral is the sarcophagus, weighing over 1,400 lb. of solid silver, in which the patron saint of Palermo, Santa Rosalia, reposes; and there are splendid altars of rare Sicilian marbles, with slabs of lapis lazuli and malachite, and in the crypt below sleeps Walter of the Mill, whose biography is another story.

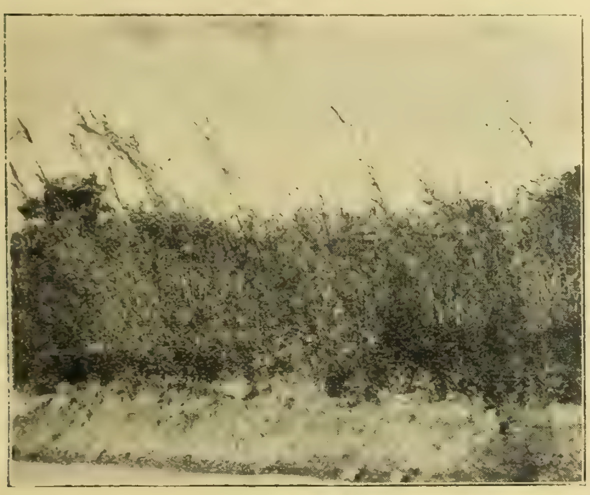
THE SHRINE OF ST. ROSALIA ON MONTE PELLEGRINO.

The Convento de' Cappucini is one of the sights of the city, albeit of rather a gruesome order, for here are preserved the mummies of well-to-do inhabitants of Palermo, not, it is true, of contemporary date, since the practice has been recently prohibited by the Government, but the catacombs contain several hundreds dating from the fifteenth century, arranged on shelves in large galleries, each body dressed in the habiliments which were worn when life animated it; and it was the common thing for a person to make his choice of the niche, to try if it fitted him, and sometimes, by way of a voluntary penance, and more usually when the scirocco was blowing, to stand for hours in these receptacles. Doubtless lessons against pride, either of rank, beauty or intellect, would be conveyed by seeing all around one, those who had good reason to be vain of one or the other, reduced to the same condition of inanimate, unflattering ugliness. The dry air has wonderfully preserved these remains, and the clothing is also comparatively intact.

MONTE PELLEGRINO FROM THE ROAD TO SOLUNTUM

But to the nomad open air is a desideratum, and therefore another cab is chartered to drive to the Villa Giulia, the public garden, just then in all the beauty of early spring. What a sight revealed itself in a leafless tree some 60 ft. high, with clusters of orange-red blossoms standing out against the blue sky with such a dazzling effect as to make one blink. It is a Leguminous species, well known in our cool houses as the coral or lobster-claw plant, the ***Erythrina corallodendron***, but here so large and so splendid as for a moment to make one doubt its identity. The Botanic Gardens are close by, and in one or the other the Judas tree, ***Cercis siliquastrum***, is in brilliant bloom of rosy-pink clusters; while the bizarre colouring of orange and violet which ***Strelitzia*** exhibits in the open air, the coarse leaves and dull-purple flowered ***Wigandia***, the beautiful rosy clusters of the Japanese cherry, and the sweet scent from the blossom of the Australian ***Pittosporum*** combine to delight the observer. The gardens are excellently laid out, and in some places the plants are grouped in such a manner as to give an idea of certain typical floras, such as the arid district of Mexico, with the curious euphorbias and cactus and other Xerophytia. In another place the bamboos and ficus suggest an Indian jungle; while there are fine avenues of date palms and screw pines. The papyrus grows in one of the water tanks, but the astonishing thing is to see trees such as the English elm and oak growing side by side with Australasian, Brazilian, Cape, and Japanese trees, and all looking healthy.

But, of course, the characteristic vegetation of the environs of Palermo is that of the orange and lemon. One valley, which is on the northern side of Pellegrino, called the Conca d'Oro, or golden shell, is full of these trees, and the fragrance is almost overpowering; in fact, out of the fifteen million Aurantiaceous trees which Italy possesses over ten millions grow in Sicily, and whenever one goes round the coast the perfume of the flowers or fruit is in the air.



A HEDGE OF *Arundo Donax*, NEAR BAGHERIA.

By waysides and rubbish heaps grows very commonly the squirting cucumber, *Ecballium elaterium*, and there are plentiful clusters of *Chenopodium murale*, or *Hyoscyamus albus*; here and there, on walls, *Antirrhinum siculum* may be found; and where a a little moisture shows itself the maiden-hair fern, *Adiantum capillus-veneris*, abounds; but there is not much moisture in Palermo; the roads are dry and dusty, such dust as a soft limestone rock can alone produce, dust that is palpable and choking, and causing a frequent thirst, so that the admirers of lemon squash can vent their admiration in a practical manner.

An early day was devoted to climbing Monte Pellegrino. Here we first realised what a flowery place Sicily is. At the distance it looks a bare, arid rock, but closer examination shows that it is a mass of flowers, with but little foliage. One of the conspicuous features was the pink *Silene bitartita*, under a local modification, which covered considerable areas, while the rocky cliffs yielded the shrubby *Silene rupestris*, and there were myriads of such plants as *Fedia cornucopeia*, *Anagallis cœrulea*, *Eruca sativa*, *Silene nocturna*, various species of *Erodium*, *Salvia clandestina*, *Lotus tetrangonolus*, numerous species of *Lathyrus*, *Vicia*, *Medicago*, *Anthemis*, and *Senecio*.

The views as one ascended the hill were very fine; opposite, in the distance, was the grotesquely outlined hill, Monte Griphone, from whence the drinking water for Palermo is brought; it is free from organic matter, but contains a considerable quantity of salts. In the nearer distance lays Palermo itself, glistening bright in the sunshine, a city, not a mere agglomeration of houses like so many of our featureless manufacturing towns; while to the left is the Conca d'Oro, fragrant with its lemons, and their foliage giving it a deliciously yellow-green tint, till that in the further distance melted into the blue of the Bay of Mondello. We reached Santa Rosalia's grotto, where a well-executed statue by Tedeschi of the saint is preserved. She owes her place in hagiology to the fact that, from motives of piety, she betook herself to the mountain, in the twelfth century. During the great plague which raged in Palermo in the early part of the seventeenth century her bones were discovered in this cavern, and, being brought to Palermo, immediately stopped the ravages of the disease, and the festival of S. Rosalia is still kept with much pomp and ceremony.

Above the grotto are some magnificent bushes of *Lithospermum rosmarinifolium*, with the flower of deep gentian-blue colour. The pretty little buttercup, *Ranunculus millefoliatus*, is not unfrequent on the upper slopes. Here, too, on the calcareous rock grow *Rhus pentaphyllum* and *R. dioicum*, with *Asparagus* and other shrubs.

The view from the Telegrapho at the summit is very beautiful, including the distant Lipari Island, the Madonian Mountains, and even the snow cone of Etna.

Sicily is remarkable for its containing so many relics of its past history, which has been a most eventful one. It has in turn been under the domination of the Greeks, the Romans, the Saracens, the Normans, and the Spanish, not to speak of the earlier Phœnicians, and each nationality has left its mark. Soluntum is one of these scars. It is a pleasant day's excursion from Palermo in a carriage, and one drives along the coast, crossing the river Oreto, near which is the lofty arch of the Ponte dell'Ammiraglio, constructed in 1113, and now crossed by the electric tramway, a startling combination of the twelfth and twentieth century. Along this coast the Saracens once cultivated the sugar-cane, and the soil now is sufficiently fertile to allow olives, vines, and barley to flourish side by side. The view of Monte Pellegrino is very fine across the bay, and then, passing Bagheria, with its picturesque girls carrying classically-shaped water-jars on their shoulders, and reaching Santa Flavia, with its importunate beggars, to whom nothing less violent than a loud shout of "Largo" proves of the slightest avail, we dismount and walk through the fields to the ancient Soluntum, originally a Phœnician settlement, but afterwards occupied and built over by the Romans, then once again deserted and ruined, and the ruins themselves almost hidden from view by the decay of centuries, till, in turn, they are once more being exposed to view by careful excavators. The streets are at most absurd gradients, bad shift for the wine bibber who slipped up on that sliding scale. But the interstices of the pavements and walls now are full of flowers, and many interesting ones there grow—the curious Legumifer, *Biserrula pelecinus*, with its strange fruit; the white mignonette, *Reseda alba*; the catchfly, *Silene inaperta*; the blue flax, *Linum angustifolium*; the clover with reflexed flowers, *Trifolium resupinatum*; the star clover, *T. stellatum*, which is naturalised at our Sussex Shoreham; the little dock, *Rumex bucephalorus*, and the pretty grass, *Lamarckia aurea*, while the borage, *Borago officinalis*, is very showy.

The prospect from the top of the hill is strangely beautiful, as one sees the blue waters of the Bay of Palermo and the Conca d'Oro to the west, and on the right the snow-clad Madonian Mountains; while below us lie the picturesque flotilla of boats for tunny fishing, here a considerable industry. On our return home we pass hedges of the giant grass, *Arundo donax*, which is used for thatching and other purposes, and then we halt at a factory where lemon juice is being used to prepare citrate of calcium, which is exported for the manufacture of citric acid. Here, too, were quantities of essence of lemon which had been prepared a month or so previously, and very fragrant and of excellent quality it was; and then one passed on through streets where the boxes for orange and lemon packing were being made, and one saw the huge pipes full of lemon juice ready for exportation, and laden with a handful of orange blossom and a supply of delightfully fragrant and sweet oranges, we began to realise to what an extent Sicily, once the granary of the Roman Empire, was indebted to these vegetable products for what modicum of commercial prosperity she still enjoys.

BRITISH MEDICAL ASSOCIATION.

ANNUAL MEETING AT SWANSEA.

The proceedings in connection with the seventy-first annual meeting of this Association commenced on Tuesday, July 28, and are to conclude on Saturday, August 1, for which day a number of excursions have been arranged. The business of the meeting is divided into eleven sections, but in none of these has any paper been read closely affecting pharmacists.

The proceedings opened on Tuesday morning with a service at St. Mary's Church, Swansea, where the Bishop of St. David's preached the sermon. In the afternoon the general meeting was held in the King's Hall, Orchard Street. A garden party had been arranged to follow these meetings, and in the evening the President, Dr. T. D. Griffiths, received the foreign and colonial guests in the Albert Hall, and subsequently delivered his annual address. He also presented the Stewart prize to Dr. F. W. Mott, for researches into the causes and prevention of dysentery in asylums. The Prince of Wales was elected an honorary member of the Association.

On Wednesday, July 29, the sectional meetings commenced. Some particulars of these will appear in next week's issue of the *Pharmaceutical Journal.*

ROYAL INSTITUTE OF PUBLIC HEALTH.

ANNUAL CONGRESS.

At this Congress, which concluded at Liverpool last week, the delegates and members received a hearty welcome from the municipal authorities and citizens. Dr. Hope, the local Organising Secretary, is to be congratulated upon the excellent arrangements made. The business of the proceedings was carried on in nine sections, all of which found accommodation in the University Buildings. The subject of

Tuberculosis

attracted a good deal of attention. Dr. Nathan Raw (Liverpool) read a paper upon "The Prevention of Consumption in a Large City." He pointed out that 2,000 people die every year in Liverpool from tuberculosis, and that there are between 5,000 and 6,000 consumptives in the city. The disease is infectious, but only when ordinary precautions are not observed. The greatest source of danger is from patients in the advanced stage, but he was of opinion that consumption is frequently conveyed to children by milk. To combat the disease he advocated the establishment of (1) a central bureau to give advice to consumptives, (2) a municipal sanatorium, and (3) a reception hospital for at least 100 incurable cases. This paper gave rise to an interesting discussion, and the general opinion was in favour of compulsory notification. Prof. Young, of Aberdeen, detailed experiments he had performed with Prof. Hamilton, which left no doubt in his mind of the transmissibility of human tuberculosis to bovines. Drs. Dean and Todd (London) also made a communication upon the transmission of human tuberculosis to the pig, stating that in each of six experiments they had produced infection.

In the section of

Bacteriology,

presided over by Prof. Boyce, Dr. Savage (Colchester) initiated a discussion upon the "Bacterioscopic Analysis of Water." He discussed the mode of transmission of the samples, doubting whether ice-packing preserved the bacterial content unaltered, the data to be ascertained, the special procedures to be adopted in the examination for *B. coli,* etc., and the interpretation of the results obtained. He doubted if absolute uniformity of method and procedure could yet be established, but thought that much might be done in this direction, and advocated the formation of a committee to consider the question. He was followed by Dr. Eastes (London), who considered the glucose formate method of Pakes to be the most delicate for *B. coli.* Prof. Boyce, Prof. Hewlett, Mr. F. J. Tanner, Dr. Buchanan, and others joined in the discussion, and it was resolved that a committee should be formed to consider the question.

Another important discussion was upon the "Nature of the Pseudo-Diphtheria (Hofmann) Bacillus and Its Significance (if any) in the Bacteriological Examination for Diphtheria." This was opened by Dr. Cobbett (Cambridge), who concluded that the Hofmann bacillus had nothing whatever to do with the Klebs-Löffler bacillus, since it differs fundamentally from the latter in producing no acid out of glucose, is never virulent for the guinea-pig, is not agglutinated by a serum that agglutinates the diphtheria bacillus, is widely distributed, and is no commoner in "contacts" with diphtheria than in healthy persons. The published instances are too few to prove the conversion of the one form into the other. Prof. Hewlett (London) drew attention to several points of similarity between the two organisms, and said that provisionally he regarded the Hofmann bacillus as a diphtheria bacillus far removed from virulence. Mr. Tanner (Bournemouth), Dr. Heaven, and Prof. Stanley Kent (Bristol), Dr. Buchanan (Glasgow) all considered that there was some relation between the Hofmann and Klebs-Löffler bacilli, and that the former sometimes produced a diphtheritic condition.

Dr. Willson (King's College, London) read a paper upon "The Germicidal Action of Alum Upon the Typhoid Bacillus." Alum has a marked effect in clarifying turbid water, and is largely used for this purpose in China, etc. At the same time the water bacteria are greatly reduced in number, but the typhoid bacillus was found to be unaffected by alum to the extent of 35 grains to the gallon.

Chemistry Applied to Medicine.

Prof. Moore (Liverpool) suggested "A Chemical Theory of Origin of Certain Infectious Diseases." He pointed out that it had been impossible to isolate micro-organisms in several important infectious diseases, and he suggested that in such instances the infective agent might be a chemical agent similar to an enzyme. To account for its reproduction he pointed to analogies in certain catalytic chemical reactions, and suggested that one of the actions of this substance might be to stimulate certain cells to produce more of itself.

Dr. Lord (London) drew attention to the powerful germicidal action of "Acetozone." He also read a paper upon the "Standardisation of Drugs."

Perfumes for Hair Oil.

(1) Heliotropin, 8 grains; coumarin, 1 grain; orris oil, 1 drop; otto of rose, 15 minims; bergamot oil, 30 minims. (2) Coumarin, 2 grains; clove oil, 4 drops; cassia oil, 4 drops; lavender oil, 15 minims; lemon oil, 45 minims; bergamot oil, 75 minims.—*Drugg. Circ.*, **46**, 214.

THE COMMERCIAL SIDE.

HOW SOAP IS MADE.

A Corner in a Drying Room (Vinolia Soap Works).

THE theory of soap-making and the chemical reactions which take place during the process are already familiar to readers of the Journal, and it is not intended to explain them in this article. It was thought, however, that a short description of the process actually employed in the making of soap at one of the largest fine soap factories in the world would be of interest. With this object in view ,a representative recently paid a visit to Stratford, and subsequently to Malden Crescent, at which centres "Vinolia" soap is produced. On entering the Stratford works one is confronted by huge piles of barrels, which on sampling are found to contain the finest quality of

Tallow and the Purest Cochin Oil.

Here is also a large stock of drums of caustic soda. Before inspecting the soap manufacturing plant a flying visit was paid to the stables, to the boiler houses, and the building where machinery is repaired, with a peep in at the candle factory, where in one room, which contains eighty frames, an operation was witnessed. The candle industry is, however, almost at a standstill during the hot weather, for it then takes more than three times as long for the stearin to set. It should also be mentioned that more than an hour was passed in inspecting the departments where the Vinolia labels, catalogues, and fancy wrappers are printed, where the boxes are made, where gold blocking was in progress, and the elegant perfume cases, for which the firm is so justly noted, are devised and perfected. But space will not permit to describe all these departments, which in themselves would justify a special article.

The Soap Plant Proper

at Stratford alone is so extensive that it required almost the whole of an afternoon to make an adequate survey of it; and it will suffice for the present to give a brief account of this. The oil and the alkali, the two principal articles employed in the manufacture of soap, are prepared for use briefly as follows: In the bungs of the barrels of tallow or coco-nut oil, or whatever oil is to be used, are passed pipes through which steam is conducted; the melted oil trickles through the bung-hole on to a perforated floor, through which it passes into tanks underneath. From these tanks the oil is conducted into storage vessels. When required for use it is pumped from the storage tanks into the soap-boiling pans, passing through a series of sieves in the coure of its progress.

The solution of caustic soda is made in large vats and is then pumped into store tanks over the building (the spent NaOH, the whole of which is not neutralised, is used over again). From here it passes by separate pipes into the boiling pans; experience teaches in what proportions the ingredients should be added.

The Soap-Boiling Pans

are of enormous size; the tops of them are half-way towards the ceiling of the second storey of the building, and the base extends nearly to the floor of the basement. They are made of steel, and are twelve in number. The largest of these is capable of turning out a 35-ton batch of soap at one boiling, the possible output of the others varying from 25 to 30 tons at a batch.

Chemical action begins to take place immediately the two liquids meet in the pan. The liquids, which are heated by a series of steam pipes, four in number, as soon as they come in contact form a seething, frothing mass, and continue to bubble up until chemical action is complete. The heat is applied for six hours. The steam pipes referred to above are, it should be mentioned, perforated so that they serve not only as carriers of heat, but also help to keep the liquid mass in constant motion. At the end of about six hours, when chemical action is complete, the steam is withdrawn and the mixture allowed to cool. This, as may be imagined, is a long process, and the

A Vinolia Soap Mill.

amount of heat absorbed by such an enormous mass takes a long time to diffuse. At the end of six days the temperature is still as high as 160° F.; the mixture, over which a thin yellow crust has by this time formed, is of a yellowish brown colour, resembling liquid honey more than anything else. When arrived at this stage, the thick liquid soap is conducted into large pans, where it is cooled still further and mixed by means of agitators; it is then run off into moulds, where it is left to solidify. One room is devoted entirely to soap for the Navy. Salt is added during the boiling process to complete the separation. This salt, whose chemical composition in the process remains unchanged, passes through with the lye, is subsequently separated, and can be used over again any number of times. The spent lye is run off through a pipe at the base of the pans, and thence is pumped to the separating plant, where the salt, the glycerin, etc., are separated. Space will not permit to describe the plant for purifying glycerin or to explain how the other components of the lye are removed.

STAMPING VINOLIA SOAP TABLETS.

The blocks of soap when thoroughly set are removed from the moulds, and pass through various cutting machines until reduced to the required size. The largest of these

Gigantic Tablets of Soap

weighs about 13 cwt. When cut the pieces are placed in the drying-room until the requisite amount of moisture has been removed. The different grades of soap are then variously treated. The household soap, when dried, is cut into tablets, stamped, scraped, smoothed, wrapped and placed in cartons ready for sale, and completely finished off at Stratford.

The finer grades, and those with which the pharmacist is chiefly concerned, are carted in small thin bars, partially dried, to Malden Crescent. On arriving at Kentish Town the bars of soap are placed on racks in a drying chamber, in which a temperature of 110° F. is maintained, where they remain for a lengthy period. When a certain amount of moisture has evaporated (the soap loses about 25 per cent. of its weight in this chamber); the soap is chipped into small pieces, placed on trays, and subjected to a current of warm air, drawn through the chamber by means of revolving fans placed at each end of the compartment. When these chips are adequately dried they are sent down shoots into a room below. In batches of 2 cwt. the chipped soap then goes through the

Milling Process.

The essential parts of the mills are huge solid granite rollers, through which the soap is passed three times. One effect of this is to make the soap of even consistency. The third time the soap comes through the rollers it is in the state of thin ribbons.

In this state it is placed in perfume agitating machines, and the blended essences having been added and the pans made to revolve, by an internal arrangement of stirrers the perfume is thoroughly incorporated with the soap.

The mixed mass is then transferred to a pressing apparatus, which resembles a huge sausage mill more than anything else; here the soap is pressed into long, octagonal-shaped rolls, which are cut off with a knife into the approximate size of the tablet required. The small blocks are subsequently stamped by machinery. These rough tablets are then scraped and polished by hand, placed on racks, and wheeled to the packing rooms. It was noticed that a small ticket was attached to each tray of finished soap, and an inquiry elicited the fact that by this means

Each Table can be Traced

to the man who finished it off, and to the batch from which it was made. A tablet from each batch is sent to the analytical department, and should any fault be found the whole mass is returned to the factories. In fact, every possible endeavour is made to ensure perfection in the product; it will not be necessary to remind readers of the *Pharmaceutical Journal* with what success such efforts meet. Nor is there any need to describe here the wrapping, boxing, and the packing of the soaps, or to go into the details of the up-to-date methods employed in these departments; it is sufficient that the elegance of the Vinolia preparations is known to every pharmacist, and their high quality recognised in every country whose inhabitants are sufficiently civilised to require washing.

MAKING VINOLIA SHAVING FOAM AND LYPSYL.

A VISIT TO HOUNSLOW.

Situated within easy reach of the City, and attainable either by rail, or by the new electric trams, of which latter service Hounslow is the terminus, are the English factories of Messrs. Parke, Davis and Co. The ground on which the premises are built covers a large area, and is excellently adapted for the extensive additions to the buildings which will shortly be commenced. Close to the factory, and lending a historical interest to the vicinity, stand a few straggling firs—all that is left of the dense plantation in which the notorious highwayman, Dick Turpin, was accustomed to lie in wait for coaches passing to and from the capital.

MAKING THE PILL MASS AT PARKE, DAVIS AND CO.'S LABORATORIES.

With Mr. Thomas Maben as guide, a representative of the Journal recently made a tour of these laboratories and learnt how pills were made in batches of a million, and had an opportunity of obtaining an insight into the system of organisation which prevails throughout the works. It is not intended, however, to give even a short account of each of the departments inspected, indeed that would be impracticable within the limits of this article. But it may be instructive to give a brief description of some of the operations witnessed, and to follow up a batch of pills from the moment the formula is written to the time the preparation is ready for sale. The buildings, the propelling machinery the packing rooms, the label departments, and other parts of the premises not actually devoted to the manufacture of pharmaceutical products, cannot be more than mentioned. Nor does space permit to describe the analytical laboratories at any greater length.

It should be mentioned at the outset that all the poisons used on the premises are kept in a special part of the building and are under the supervision of qualified chemists only. The same precautions are taken in this respect as in a retail chemist's shop.

Whether through the activity of the food and drugs inspectors in reference to Pil. Ferri, and the consequent demand for an absolutely reliable article, or whether this was the normal state of affairs has nothing to do with the question, but at the time of the visit almost all the available machinery seemed to be occupied with Blaud's Pill. On the massing rollers, in the pill cutters, under the pill rounders, in the gelatin-coating machines and the oscillating pans, in the packing rooms—everywhere were Iron Pills, almost as ubiquitous as the formula card.

On arriving at the factory all drugs and chemicals are marked with a card "Not Passed," and as long as this card appears on the package the contents are not employed. Before long, however, a sample is taken by Mr. A. J. Parker, F.C.S., the works' chemist, and examined by him or under his supervision by one of his laboratory assistants, and if no fault is found the original card is changed for one bearing the words "Passed by the analytical department," and the contents are ready for use. While on the subject of cards, the very excellent system which prevails at Hounslow, as also at Detroit, may here be explained. In a room devoted to the writing of formulæ and the calculating of quantities for large batches of the various preparations there are kept on file a large collection of standard Formulæ Cards. When some standard preparation is required the Formula Department issues a card on which the quantities of the various ingredients are worked out. This prescription, having been carefully checked, then starts on its rounds. Its first call is at the store room, where the various drugs mentioned on the card are weighed out. The quantity taken for the package, together with the number of the prescription for which it was required is marked on a tally attached, this is initialled by the assistant who weighs out the material; in addition to this he also initials the card. All the parts of the prescription having been weighed out they are then sent to the mixing room. It should be mentioned that the exact instructions for the preparation of the compound are stated on the formula card and these are minutely followed. Suppose the prescription is for pills, the mixed ingredients are sent to the mass room of the pill department, the excipient is added, and the mass is prepared. The manner of making the mass for immense quantities of pills naturally differs altogether from the mode employed in a chemist's shop. In the accompanying illustration an assistant is engaged on this operation, the essential parts of the machine are two heavy iron rollers, and these are set in motion by an electric motor. This, as may be imagined, is a most effective way of producing a perfectly homogeneous pill mass, and very large quantities can be dealt with at a time. When white pills are required as, for instance, in the case of quinine pills, the rollers used are of wood.

The mass is cut into small pieces of a definite size by rolling lumps of the mass into cylinders about 10 in. long and three-quarters of an inch thick, which are cut by corrugated rollers.

The cut pieces are then rolled into pipes by means of suitable machinery, and passed on to another appliance, where they are cut into the required size and subsequently rounded. The machines used for piping, cutting, and rounding the pills are on the same principle as those employed in an ordinary pharmacy, with the difference that they are very much larger, and are worked by machinery. A recent addition has, however, been made to the pill room, this consists of a marvellously compact and ingenious contrivance, known as the "Rotary Power Pill Cutter." By means of this single machine as many as four hundred thousand pills can be manufactured in one day. The weighed pieces are placed in at one end of the machine and the rounded or oval pills come out at the other. By means of a clever invention only pills of the exact size required are allowed to pass out, and by using adjustable parts the pills can be made to any size. In course of time this apparatus will doubtless replace the other machines now in use.

The pills, as soon as moulded, are placed in wooden trays and covered with flour. These are moved to drying chambers, through which a current of warm dry air circulates, at a temperature slightly below 110° F. When sufficiently seasoned in this way, and it is only by long experience that this can be properly judged, the pills are ready for coating either with sugar or gelatin, as required.

Until recently, to cover pills with gelatin, in was customary to fix them to needles and in this manner dip them in the gelatin solution, but this system has been altogether superseded at Hounslow, where the method employed is as follows :—The oval pills are fitted in a vertical position into the holes of a perforated hollow metal slap, which leaves half the surface of the pill exposed. The air is exhausted from the hollow slap, with the result that it can be inverted without causing the pills to drop out. In this inverted position the pills are dipped into the gelatin solution, and when dry they are reversed and the remaining half of the surface is dipped in the same manner. One of these machines is here depicted, but it is difficult to give on paper an exact idea of the principle of the apparatus.

GELATIN COATING MACHINE.

If it is required to coat the pills with sugar, they are placed in huge oscillating copper pans, and warm syrup is poured upon them ; on to the moving mass a current of warm air is directed through a pipe whose outlet is towards the top of the pan. When the necessary thickness of coating is attained, the pills are passed on to the picking room, where girls are employed in separating irregular pills from the perfect ones. Each of these girls separates as many as 200,000 perfect pills per day. The picked pills then pass to the polishing room, where by means of wax-lined oscillating pans is produced that beautiful polished surface for which Parke, Davis and Co.'s pills are known al over the world.

A somewhat novel idea in the way of pill coating was explained by Mr. Wrench, the works' manager, in the course of the journey through the showrooms. Certain pills manufactured according to special formulæ, and for export to India, are coloured according to the maladies for which they are prescribed, for instance, a pill for dysentery is one colour, fever another, jaundice another colour, and so on.

The above is a very brief outline of the various stages through which the pill passes in the course of its manufacture; during the whole of these processes the formula card has been passing from room to room accompanied by the unfinished pill, right up to the last stage, when it is finally checked and the pills are added to stock.

It is unnecessary to describe here in detail the manufacture of tablets, which is another specialty of this firm. The portion of the buildings set aside for this important industry consists of mixing and granulating rooms, drying chambers, and a large collection of various forms of tablet machines of the most up-to-date designs capable of turning out an enormous number of tablets in a short time. For tablets containing poisons and toxic substances a special room is reserved with machinery kept solely for that purpose. Similar precautions to this are noticeable in all the departments, and the system of checking and rechecking has reached a state of perfection. Only brief mention can be made of a few of the numerous other preparations for which the firm is so justly famous. The mixing and putting into tubes of Euthymol Tooth-Paste is quite an important branch at Hounslow, and a large number of girls are employed in this industry. The manufacture of galenicals can scarcely be touched on within the limits of this article, suffice it to mention that all the most modern appliances are installed in the laboratories devoted to the manufacture of these products. At the time of the visit in these departments a large batch of cod-liver oil emulsion was in course of preparation and an opportunity was afforded of inspecting the special plant devoted to this purpose.

PILL PIPING AND CUTTING APPARATUS.

NOTES IN PARLIAMENT.

BY OUR PARLIAMENTARY REPRESENTATIVE.

Business of the Session.

On Tuesday, July 28, the Prime Minister announced the intentions of the Government with regard to the course of business in the House of Commons during the remainder of the present Session. It is hoped that the Sheep-Scab Bill, which is a Government measure, may be passed, but various useful private measures such as Lord Avebury's Shops (Early Closing) Bill, the Registration of Firms Bill, and the Pharmacy Acts Amendment Bill may now be given up as lost, so far as this Session is concerned. There are too many contentious Government Bills for private Bills of that nature to have any chance of consideration·

Bills of Exchange.

A Bill to provide for the registration of dishonoured bills of exchange and to allow summary judgment thereon has been introduced into the House of Commons by Sir Wm. Holland, President of the Manchester Chamber of Commerce and the Associated Chambers. The object of the Bill is to give greater facilities than at present exist for the recovery of money due upon dishonoured bills of exchange and promissory notes. The Bill, which has, of course, no chance of being considered this Session, appears to be another side project to improve commercial morality, by making default a game too serious to be played frequently.

LEGAL INTELLIGENCE.

Sale of Food and Drugs Acts.

Milk of Sulphur.

On Friday, July 24, 1903, at the Westminster Police Court, Alexander Fitzgerald, of Marsham Street, Westminster, was summoned by the Westminster City Council for selling milk of sulphur containing 46·4 per cent. of non-volatilisable mineral matter.

Mr. Strutt, who supported the summons, said that a fair price was paid for a sample of milk of sulphur which on analysis was found to be plaster of Paris.

Defendant, while pleading guilty, said he was entirely unaware of the adulteration. He had had the stuff by him for a long time. On consulting his books he found that he had sold 1 lb. in eight years! On learning that it was adulterated he destroyed the remainder. That was the first time there had been any complaint against him for thirty years.

Mr. Horace Smith imposed a fine of 5s. and 14s. 8d. costs.

Powdered Ginger.

On Thursday, July 23, 1903, at Church, a general dealer was summoned for selling "ground ginger" adulterated with 2 per cent. of calcium carbonate and 4·5 per cent. of barium sulphate. The defendant agreed to destroy the ginger and privately to inform the inspector under the Sale of Foods and Drugs Acts where the ginger had been purchased. On this the Inspector consented to withdraw the case.

The Chairman of the Bench said it was very important that these cases should be brought before the public to show the frightful amount of adulteration there was. This substance, barium sulphate, was a highly poisonous material. Of course, in the state of the ground ginger it was an insoluble salt, but the moment it got in the consumer it became a soluble salt, and very poisonous—indeed, one of the most poisonous (*sic*). It was important that the public should know what an amount of good was being done by the Sale of Food and Drugs Acts when it was carried out.

High Court of Justice—Chancery Division.

Another Saccharin Action.

On Friday, July 24, 1903, before Mr. Justice Swinfen Eady, the Saccharin Corporation applied for an injunction to restrain one Prosper Mounet from entering into the employ of another company for the purpose of selling saccharin in this country in breach of a certain agreement. In that agreement all parties agreed that, so long as the plaintiff company carried on business they would not sell any saccharin in Great Britain or her colonies, or be connected with any business which might compete with the plaintiff company. It now appeared that within the last few months a company had been registered, called "Chemicals and Saccharin, Limited," with a capital of £10,000, in £1 shares, with the object of carrying on business as manufacturers and dealers in saccharin, and the defendant had been named one of the first directors. The company was now building a factory near Geneva, with the object of manufacturing saccharin for importation and sale in this country.

Mr. Justice Swinfen Eady said there appeared to be a clear breach of the agreement, and he would grant an injunction in the terms of the covenant till judgment or further order.

POISONING CASES AND INQUESTS.

The deaths by poisoning reported during the seven days ended Wednesday, July 29, 1903, number thirteen, thus:—

Poison.	Accident.	Suicide.
Carbolic Acid	—	1
Chloroform	1	—
Godfrey's Cordial	1	—
Hydrochloric Acid	—	1
Hydrocyanic Acid	—	3
Laudanum	—	1
Oxalic Acid	—	1
Potassium Cyanide	—	2
Ptomaine	2	—
Total	4	9

Carbolic Acid.—A man at Saltley committed suicide by taking a quantity of carbolic acid.

Chloroform.—A youth died in St. George's Hospital, London, under the influence of chloroform, given as an anæsthetic.

Godfrey's Cordial.—A child at Welney, near Wisbech, died through drinking from a bottle of Godfrey's Cordial. The jury added to their verdict a rider expressing disapproval that chemists should sell the cordial in such large quantities, improperly labelled.

Hydrochloric Acid.—A girl at Southwark committed suicide by taking spirit of salt.

Hydrocyanic Acid.—On Thursday, July 23, the dead body was discovered of Thomas Hudson, described as a chemist and druggist (but not on the Register of Chemists and Druggists, 1903), in his shop at Rochdale Road, Bury, Lancashire. Near his remains were two bottles which had contained prussic acid. A verdict of "Suicide whilst insane," was returned by the jury at the inquest. An unknown man committed suicide with the drug in the Crystal Palace Grounds, as did a medical man at Drumconrath.

Laudanum.—A woman died at South Shields from laudanum poisoning, and a verdict of "suicide" was returned.

Oxalic Acid.—This was taken by a woman at Islington with fatal effect.

Potassium Cyanide.—A photographer's wife at Cardiff, and an elderly man at Wells, committed suicide by taking potassium cyanide.

Ptomaine.—Death was ascribed to ptomaine poisoning at the inquests on a woman at Trowbridge and a domestic servant at Kensington.

Attempts at Suicide.—The drugs used in attempts a suicide were acetic acid, carbolic acid (2), chlorodyne, laudanum (3), and salt of lemon.

LIABILITY TO MEDICINE STAMP DUTY.*

BY JOHN HUMPHREY.

When Liability to Stamp Duty is Incurred—The Exemption of Chemists and Druggists—Recognition of Well-Known Books of Reference—A Special Chemists' Formulary—How the Chemists' Privilege was Established—The Attitude of the Board of Inland Revenue—The Position of Chemists and Druggists—Qualified and Unqualified Vendors of Medicine.

Stamp duties on medicines sold in this country were first imposed in 1783, when an Act of Parliament (23 Geo. III. c. 62) was passed, compelling unqualified sellers of drugs and medicines to take out licences and pay a duty upon all medicines sold by them. Two years later that Act was repealed and replaced by a more workable measure (25 Geo. III. c. 79), under which chemists and druggists and other qualified persons were also required to take out licences for the sale of medicines liable to stamp duty, though they were exempted in respect of crude or entire drugs, as well as compounded medicines of a non-secret character. In 1802 the second Act was, in turn, repealed, being replaced by a measure (42 Geo. III. c. 56) which re-enacted all the provisions of the 1785 Act, with certain modifications, and fixed the rates of duty now in force. Other amending Acts were passed in 1803 (43 Geo. III. c. 73), 1804 (44 Geo. III. c. 98), and 1812 (52 Geo. III. c. 150), the last-mentioned being the one under which proceedings are now taken by the Board of Inland Revenue.

When Liability to Stamp Duty is Incurred.

Liability to duty is incurred if a medicinal preparation intended for the prevention, cure, or relief of any disorder or complaint incident to or in anywise affecting the human body is or has been

(1) A nostrum or secret remedy,

(2) Prepared and sold under the authority of Letters Patent, or

(3) Held out or recommended by labels, advertisements, etc., as a secret or proprietary medicine, or as a specific or remedy for the prevention, cure, or relief of any disorder or complaint afflicting the human subject.

The practice of the Inland Revenue authorities during recent years has been to consider that a medicinal preparation cannot be sold unstamped, without involving liability to penalty, unless care has been taken to avoid any expression or phraseology which can be construed as representing:—

(1) That the preparation of the medicine is a secret, or that the medicine is the specialty of any person, or that it is made in conformity with any special recipe.

(2) That it is the preparation of any particular person, or that anyone has a proprietary right in its manufacture or sale, for example, "Smith's Liver Pill," "Neuralgic Tincture, prepared only by Jones."

(3) That it will prevent, cure, or give relief in, any disorder.

All such expressions must not only have been avoided on the label itself, but also in all references to the medicine, whether on the label, wrapper, or cover, or in any printed or manuscript matter whatever, including newspapers, handbills, posters, showcards, advertisements, almanacs, lists, etc., inasmuch as although the labels by themselves may not render the preparations to which they relate liable to duty, the preparations may be made so liable by the publication of other printed or written matter. But, in order to meet the objection that some descriptive name must be affixed to certain remedies in common use, the Board of Inland Revenue has not until recently insisted upon the payment of duty in the case of any preparation described merely by the name of the ailment or organ of the body for the treatment of which it was intended, though the Board has always held that such designations as "Cough Mixture," "Toothache Tincture," "Corn Paint," "Antibilious Pills," "Liver Pills," and "Head and Stomach Pills" were liable to stamp duty in strict law. As a matter of public convenience, however, some laxity has been allowed in this respect, but now, as the result of the judicial decision in the case of Ransom *v.* Sanguinetti, the Board of Inland Revenue has stated that it has no alternative but to hold that liability to duty is incurred in such cases.

The Exemption of Chemists and Druggists.

At the same time, in an official letter on the subject, the Board has intimated that, after a careful consideration of the recent decisions in the cases of Ransom *v.* Sanguinetti, and of Farmer *v.* Glyn-Jones, it has decided not to press for payment of Medicine Stamp Duty in cases where an article is sold by a duly qualified chemist or druggist under such a designation as "Cough Mixture," provided that the composition of the article is fully disclosed in the label, or that the article is prepared in accordance with a formula in the British Pharmacopœia or other well-known book of reference, and that a statement to that effect is included in the label. Where, however, such words as "Cough Mixture" are used, without a statement of the ingredients from which the article is prepared, the Board feels that it has now no alternative but to hold that liability to duty is incurred. Accordingly, assuming that the Board's interpretation of the Statute is upheld by the Courts, chemists and druggists will henceforth be unable to sell a compounded medicine, described on the label by the name of an ailment or an organ of the body, unless

(1) The bottle or other inclosure bears a stamp; or

(2) The composition of the article is fully disclosed on the label; or

(3) The article is prepared in accordance with a formula in the British Pharmacopœia or other well-known book of reference, and a statement to that effect is included in the label.

Of the three courses thus open to chemists and druggists, it is obvious that the first cannot conveniently be followed in selling small quantities of compounded medicines in common demand. But the Board of Inland Revenue does not appear disposed to make any further concession in the case of nostrums or secret remedes. Unless, therefore, he is prepared to pay the stamp duty, it will, apparently, be necessary for each individual chemist to decide whether in any particular case it will be more convenient or more politic (*a*) to state the composition of the preparation upon the label, or (*b*) to indicate where the formula is published.

The Board has stated that it will not be sufficient simply to name the ingredients of the medicine upon the label; the exact quantity of each must also be specified.

Recognition of Well-Known Books of Reference.

Reference to a recognised formulary will, therefore, doubtless be preferred. The last-mentioned course suggests itself as the wisest one to follow in the case of preparations containing potent ingredients, and it will probably be found the best to follow in any case, the more especially as the formula may appear in any well-known book of reference, and the demand for such a work is likely to result in the publication of a special formulary for the use of chemists and druggists. It may be added that it should not prove difficult to limit the number of preparations which require, as a matter of public convenience, to be described by the name of an ailment or an organ of the body, but it might be well if local associations were to consider this point and suggest suitable additions to the following list, which includes the more popular remedies in general demand: —

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* Read at the Annual Meeting of the Federation of Local Pharmaceutical Associations, Bristol, July 31, 1903.

Antibilious Pills,
Blood Purifier,
Chilblain Lotion,
Cholera Drops,
Corn Paint,
Corn Plasters,
Corn Solvent,
Cough Lozenges,
Cough Mixture,
Cough Syrup,
Diarrhœa Mixture,
Eye Ointment,
Fever Mixture,
Gout and Rheumatic Pills,
Head and Stomach Pills,
Headache Powders,
Influenza Mixture,
Liver Pills,
Liver Tonic,
Lung Tonic,
Neuralgia Pills,
Pile Ointment,
Rheumatic Embrocation,
Ringworm Ointment,
Stomachic Mixture,
Tic Pills,
Tic Mixture,
Toothache Essence,
Worm Lozenges,
Worm Powders.

It appears probable that the whole of the designations in the foregoing list, and any similar ones, will now be regarded by the Board of Inland Revenue as incurring liability to duty in the ordinary course, either because the name of an ailment is held to imply a recommendation, or because the name of an organ of the body is held to include the complaints to which that organ is subject. Such names as "Antibilious Pills," "Liver Pills," and "Head and Stomach Pills," have already been pronounced liable, but the publication in a well-known book of reference of a formula for any preparation in the list will enable chemists and druggists to sell the medicine unstamped, provided the label bears an indication as to where the formula is published.

A Special Chemists' Formulary.

In order to meet the objection that suitable formulæ are not always to be found in existing books of reference, the compilation of a special chemists' formulary, containing suitable formulæ for a variety of simple remedies, has been suggested. The preparation of such a work should not prove a difficult matter, and the expense of producing it need not be considerable. Additions could be made to this list of "known, admitted, and approved" remedies as occasion arose, and, apart from the utility of the formulary as a means of overcoming the serious difficulty created by the Board of Inland Revenue's change in practice, it is conceivable that it might also prove advantageous to be able to appeal to such a recognised standard in cases under the Sale of Food and Drugs Acts, as the book could be made to include formulæ for galenical preparations which are not included in the British Pharmacopœia, but for which there is a public demand. The Board of Inland Revenue will not recognise any journal or other periodical publication as "a well-known book of reference," nor will it extend that definition so as to cover a book of formulæ published by a private individual, a local pharmaceutical association, or a trade protection society. But it is prepared to recognise a formulary published by an official body, such as the Pharmaceutical Society of Great Britain. A statement to the effect that an article is prepared according to a formula which appears in a work published by that Society will be regarded by the Board as evidence that the article is an approved remedy, and therefore within the exemption relied on by the defendant in the recent case of Farmer *v.* Glyn-Jones, unless the original vendor made the article dutiable.

How the Chemist's Privilege was Established.

Attention must here be directed to the fact that, although the outcome of the case of Ransom *v.* Sanguinetti is certain to cause a considerable amount of inconvenience to chemists and druggists, the inconvenience will probably be of a merely temporary character; in addition, the situation has probably been saved by the judgment in the case of Farmer *v.* Glyn-Jones, which has had the effect of affirming the privilege originally conceded by Parliament to qualified, as distinguished from merely licensed, sellers of drugs and medicines, in the Medicine Stamp Duty Act of 1785. In delivering the judgment in that case, Mr. Justice Wills stated that a mixture or compound is exempt from duty—

(1) If the article is compounded of drugs or chemicals as to which there is no secret;

(2) If the person who originally introduced it to the public is not, and no person has since become, the owner and proprietor of the mixture or compound;

(3) If the person who originally introduced it has never advertised it as a specific or as possessing remedial properties; and

(4) If it is made up or sold by a duly qualified person, such as a surgeon, apothecary, or chemist and druggist.

It is conceivable that, if the judgment in this case had been adverse to chemists and druggists, they might have been prevented absolutely from selling antibilious pills, cough mixture, and other compounded medicines designated by the names of ailments or organs of the body, except when duly stamped. As it is, while no unqualified and unlicensed person can legally sell even a crude or entire drug unstamped if the label on the article bears any word or words implying a recommendation, it is now recognised by the Board of Inland Revenue that there is a still narrower restriction in the case of compounded medicines sold with a recommendation. Such articles cannot legally be sold unstamped except by chemists and druggists, surgeons, apothecaries, and persons who have served as surgeons in the navy or army, a clear distinction being thus drawn between qualified and unqualified (including licensed) dealers in medicines. It is illegal for grocers and other unqualified persons, unless they hold a medicine licence, to sell such articles as headache powders, even though they consist of an entire drug; but chemists and druggists may sell such articles without a licence and unstamped. Further, it is illegal for limited companies, grocers, and other unqualified persons to sell such articles as antibilious pills, cough mixture, etc., unless they hold a medicine licence and pay stamp duty on the articles, however small the quantity sold; chemists and druggists, however, are fully exempt in this case as in the former one.

The Attitude of the Board of Inland Revenue.

Since the judgment of the High Court in the case of Farmer *v.* Glyn-Jones was delivered, the Board of Inland Revenue has intimated that, after careful consideration of the matter, it does not consider that the judgment necessitates any change in its practice except that, in the case of the sale by a qualified chemist and druggist of a known, admitted, and approved remedy, no claim to Medicine Stamp Duty will arise if the formula of the preparation is stated or is indicated by such words as "Prepared according to the British Pharmacopœia" or the letters "B.P.," and if it can be shown that the preparation was not recommended by the "owner, proprietor, maker, compounder, original or first vendor thereof." Subsequently, the Board supplemented this intimation by stating that a chemist would be equally entitled to the benefit of the exemption referred to, whether the remedy was made or compounded by himself or was purchased by him from a manufacturer. In a further official communication, it was stated that, in the Board's opinion, the exemption relating to known, admitted, and approved remedies does not apply to sales by limited companies, and in the recent case of Spencer *v.* Needhams that view has been upheld by the magistrate (Mr. Denman) before whom the point was argued. It may be added that the Board is also of opinion that an ordinary mixture will be liable to duty, when dispensed from a medical prescription, if any reference be made upon the label to the ailment for which the medicine is prescribed. For example, it is considered that liability to duty will be incurred if the words

"Cough Mixture," "Indigestion Mixture," or "To be taken when the cough is troublesome" are written upon a label. Whether or not such a contention is justified remains to be proved, but, as the question affects medical men more closely than chemists and druggists, the onus of contesting the point may well be left to the former. The difficulty, so far as chemists are concerned, can be overcome by writing the names of all the ingredients of the medicine upon a slip label, and affixing that to the bottle.

The Position of Chemists and Druggists.

Among other moot points, it has been suggested that the decision in the Sanguinetti case does not justify the statement of the Board of Inland Revenue that such designations as "Cough Mixture," "Liver Pills," and "Throat Lozenges" render preparations so labelled liable to stamp duty, but it is extremely doubtful if the interests of chemists and druggists would be well served by contesting the point. That it will be contested, sooner or later, may be taken for granted, but the responsibility of entering upon further litigation may with advantage be left to other parties, whose interests are not necessarily identical with those of registered chemists. As matters now stand, the Board of Inland Revenue has decided to act upon the principle—to which chemists and druggists should be the last persons to take exception—that the Legislature, when it imposed a tax upon nostrums or secret remedies, did not intend to interfere with the legitimate business of persons qualified by education to sell medicines. Now, the legitimate business of chemists and druggists is to supply crude or entire drugs, or non-secret mixtures or preparations of the same, and not to sell nostrums or secret remedies. If chemists are content to develop their business exclusively on legitimate lines, they can now do so without being under the necessity of taking out medicine licences or applying duty stamps to anything they sell. But if, on the other hand, they find it necessary or desirable to depart from the ideal professional position by selling medicines of which the composition is not disclosed, the Board insists that they must contribute to the public revenue by paying stamp duties upon licences and upon the medicines in question. Secret remedies, and those alone, require to be stamped when sold by chemists and druggists, no distinction being made in this respect between qualified and unqualified sellers.

Qualified and Unqualified Vendors of Medicine.

It has been pointed out that there are four classes of persons contemplated by the Legislature, and three classes of medicines, as being within the scope of the Medicine Stamp Acts. The three kinds of medicines are (1) entire drugs, (2) compounded medicines of a non-secret character, and (3) patented medicines, and nostrums or secret remedies. There is no restriction imposed by the Acts upon the sale of articles in the first two classes, provided they are sold without any recommendation, but the articles in the third class are liable to duty in any case, and can only be sold by persons who hold a medicine licence. The four classes of persons contemplated by the Legislature are:—

> (1) Those who by apprenticeship to surgeons, apothecaries, chemists and druggists (also surgeons of the navy and army) derive the qualification of skill from discipline for engaging and practising in the sale of drugs and medical preparations;
>
> (2) Persons procuring the legal or statutory "qualification" of a licence;
>
> (3) Patentees of proprietary preparations in medicine, quacks, or nostrum-makers; and
>
> (4) All unlicensed vendors of drugs and medical compounds.

Of these four classes of persons, the first are exempted from all the restraining and disabling provisions of the Acts, except in regard to patented medicines and nostrums or secret remedies, if sold by them. Secondly, persons not qualified by special training are rendered capable of vending entire drugs, with a recommendation, without payment of other duty than that imposed on the necessary licence; if licensed, they are also authorised (*a*) to sell compounded medicines of a non-secret character, with a recommendation, on payment by them beforehand of the duties imposed on their sale by the law, and (*b*) to sell patented medicines and nostrums or secret remedies when duly stamped as having paid the duty. All proprietors, makers, and first vendors of patent medicines and empirical nostrums are also required to take out an annual licence, in addition to paying beforehand the duties imposed on the sale of the articles and affixing the necessary stamps to the bottles, boxes, etc., containing the dutiable articles. As regards the fourth class of persons, it is held that grocers, oilmen, hucksters, and other unqualified persons cannot legally sell entire drugs with a recommendation, expressed or implied, without taking out a licence, and they cannot even then sell compounded medicines such as tinctures, pills, etc., with a recommendation, unless a stamp be affixed to each package. It is clear, therefore, that the Medicine Stamp Duty Acts make a clear distinction between persons qualified by education and persons simply authorised by licence to sell medicines, and it is of the highest importance to registered chemists that the Board of Inland Revenue has now decided to recognise that distinction and regulate its practice accordingly. To sum up the matter briefly, non-secret and non-proprietary medicinal preparations, which have not been rendered dutiable by their introducers, are not chargeable with duties under any circumstances; but when sold by a mere licensed vendor of medicines they are so chargeable, if in any way held out or recommended for the prevention, cure, or relief of any ailment affecting the human body.

NEW REMEDIES.

Vanilla Preparation.—M. H. Le Comte states that the perfume of vanilla depends upon the activity of two ferments, one of which has an oxidising and the other a hydrating action. Most ferments are active near a temperature of 50°, and are destroyed at one of 90°-100°. It seems probable that coniferin is the substance acted on by the ferments of vanilla, and as coniferin is very slightly soluble in cold water, but is soluble in warm water, the warmth applied in fermenting vanilla renders coniferin more easily acted on whether the heat be derived from the sun or artificial heat. The author thinks a temperature of 50° to 60° maintained for some time more efficacious than plunging the pods in boiling water, since that would remove the waxy coat of the fruit, and render the fruit more susceptible of becoming mouldy.—*Journ. d'Agricult. Trop.*, **2**, p. 323-5.

Socin's Adhesive Antiseptic Paste.—A difficulty is often experienced in applying a dressing to certain parts, where it cannot be retained in position by a bandage, such as in operations for hare-lip or in the mouth. To obviate this difficulty Socin employs the following paste:—Zinc oxide, 50; zinc chloride, 5; distilled water, 50. Mass and spread over the sutured wound with a brush or spatula after drying the parts, placing over the paste a few shreds of cotton wool to give it consistence. When dry, the paste forms a solid impermeable crust and preserves the wound in a perfect aseptic condition. It is left *in situ* for five or six days, when it is taken to remove the sutures and a fresh application is made, which is left on for a similar period, if it does not come away spontaneously before.—*Bull. Comm.*, **31**, 132.

BRITISH PHARMACEUTICAL CONFERENCE.

FORTIETH ANNUAL MEETING AT BRISTOL.

TWENTY-EIGHT years have rolled by since the members of the British Pharmaceutical Conference and their friends met together at Bristol. The President was then Mr. T. B. Groves, F.C.S., who, like many another distinguished pharmacist who took a prominent part in the proceedings, has since passed away.

The proceedings commenced on Monday evening, when his Worship the Lord Mayor of Bristol, Sir Robert H. Symes, held a reception at the Royal Hotel. This was largely attended by Conference visitors and their lady friends. An excellent musical programme was rendered, and light refreshments were provided. At nine o'clock a large party assembled in the ballroom, where dancing was kept up until midnight. Many preferred the convivialities of a smoking concert, which was held in another room while the dance was in progress.

MR. T. H. W. IDRIS, L.C.C., J.P., F.C.S.,
President of the Conference.

The President of the Conference, whose portrait is here reproduced, is already well known to pharmacists. A few points in his career will, however, be interesting to readers. Thomas Howell Williams Idris (the name "Idris" was adopted in 1893) is the son of a Welsh farmer. His early education was obtained in the village school of Tavernspite, in Carmarthenshire, and it was here that he first became acquainted with the English language. This school was under the control of English clergy, and the children were thrashed if they spoke Welsh. At the age of twelve he was removed from the school, and shortly after was apprenticed to his uncle, a draper in Monmouth; but, owing to a disagreement with his master's foreman, he left the shop after a very brief stay. On leaving his uncle, he called on a cousin who kept a chemist's shop at Ebbw Vale, and with him he spent the next four years as an apprentice. The next move was to Crickhowell, where he entered the employment of another cousin, also a chemist, with whom he stayed until the age of twenty-one. During his sojourn at Crickhowell the young chemist's assistant joined the Volunteers, and became such a proficient shot that he gained over £100 worth of prizes.

On leaving Wales he came to London, and was for twelve months with Messrs. Herrings and Co., manufacturing chemists, of Aldersgate Street, at the end of which period he returned to his native country, and went into partnership with one Llewellyn, at Brynmawr; but at the end of the year the partnership was dissolved, and the subject of this note returned to Messrs. Herrings, and remained with them for six years. His first experience as a retail chemist in London was in Seven Sisters Road, where he purchased the stock and goodwill of a chemists' shop. At first he found it very uphill work; but success came in course of time and the young chemist was able to refuse the offer of a salary of £400 a year from his old employers, Messrs. Herrings. It was in 1875 that Mr. Idris first commenced to manufacture aërated waters, and before very long he decided to relinquish retail pharmacy, and to put all the money he could possibly raise into the manufacture of mineral waters. The result of his venture is well known, and the name "Idris" is familiar in more than one continent. Mr. Idris is a prominent member of the London County Council, and has been a candidate for Parliamentary honours on two occasions.

Reception.

The opening proceedings in connection with the Conference, though marred somewhat by unfavourable weather, passed off very successfully. The reception on Monday evening, July 27, at the Royal Hotel, by the Right Hon. the Lord Mayor of Bristol, Sir Robert Symes, and the Lady Mayoress was a brilliant gathering. His Worship was supported by the President of the Conference, Mr. T. H. W. Idris, J.P.; the President of the Pharmaceutical Society of Great Britain, Mr. S. R. Atkins, J.P.; and the President of the Pharmaceutical Society of Ireland, Mr. G. D. Beggs.

The Lord Mayor, in the course of a very complimentary speech, expressed the hope that the subsequent meetings would be favoured with better weather. He referred to the importance of the Conference, and spoke in highly appreciative terms of the work that had been done by the Pharmaceutical Society in regard to the training and qualification of pharmaceutical chemists for preparing and dispensing medicines. That work was of the greatest importance, and it was extremely gratifying that pharmaceutical chemists rarely, if ever, made a mistake in dispensing. On behalf of his fellow-citizens, he extended to the Conference a hearty welcome to Bristol.

The President, in replying, congratulated the Lord Mayor on having been elected to that position five times. The Lord Mayor interposed, however, with the remark that he had been Mayor four times and Lord Mayor once. Mr. Idris accepted the correction, and said he hoped his Worship would, in due course, be five times Lord Mayor of Bristol. He asked the members of the Conference to tender their heartiest thanks to Sir Robert Symes for the cordial welcome he had given to them.

The thanks of the Conference having been accorded with acclamation,

Mr. Atkins, as President of the Pharmaceutical Society of Great Britain, thanked the Lord Mayor for his kind remarks concerning the Society.

Mr. G. D. Beggs, President of the Pharmaceutical Society of Ireland, also thanked his Worship, mentioning that he had just come from Ireland, where a right royal welcome had been given to the King and Queen; but he felt that the welcome accorded to the Conference by the citizens of Bristol was equal in every respect.

The Lord Mayor having replied,

Mr. Atkins escorted the Lady Mayoress into the concert-room, where an excellent programme of vocal and instrumental music was rendered. Subsequently the members of the Conference and their lady friends took part in a most enjoyable dance, to the strains of the "Strad" Orchestral Band.

SESSIONS OF CONFERENCE.

FIRST DAY'S PROCEEDINGS.

The Sessions of Conference commenced on Tuesday, July 28, at 10 a.m., in the Lecture Hall of University College, Bristol, the President, Mr. T. H. W. Idris, in the chair.

The first business of the day was an address of welcome by Professor C. Lloyd Morgan, Principal of University College, Bristol.

Professor Morgan said that when he had the honour of suggesting to the Council of University College that the Sessions of Conference should be held in the College buildings, that suggestion was at once adopted and carried unanimously. It was felt that University College was distinctly a fit and proper place in which to welcome such a conference as the British Pharmaceutical Conference, for the work of the Conference was especially characterised by exactness, and they at University College, at any rate, held up the ideal of exact and careful work, and they endeavoured, as the Conference endeavoured, to promote efficiency and elegance. He owed those two terms to a member of the profession of pharmacy who crossed the Atlantic with him. The American maintained that the characteristics of his profession had of recent years been marked by increased efficiency and elegance. He (Professor Morgan) asked in what respects he would lay stress upon those two points. "Well," he said, "in times gone by we used to just put something in which affected the whole constitution and just worried around, and perhaps did good in the end—perhaps shattered. What we aim at now is something that will stick strictly to business and not go fooling around the constitution. In regard to efficiency and elegance, when I was a boy it was a real terror to have to take any medicine or drugs. We have changed all that now, and it has added a new joy to existence." The Conference was cultivating efficiency and elegance, and they at University College were cultivating those two things, for if they thought a moment, did not those two words touch pretty well the keynote of efficient, elegant, and exact work—that was to say, must not good work stick strictly to business and not go fooling around the constitution, and was not elegant work just that which got rid of all unnecessary redundance? He hoped that the Conference might be a thorough success, and he also hoped the members of the Conference would have some interesting excursions around Bristol. He heartily welcomed the Conference to University College, Bristol.

The President thanked Professor Lloyd Morgan very heartily for the very kind and cordial welcome he had extended to the Conference and for the very kindly appreciative remarks he had made respecting the calling of pharmacy. They could not have had a more cordial welcome nor better premises in which to hold their meetings.

Mr. S. R. Atkins, President of the Pharmaceutical Society, also thanked the Principal of University College for his very gracious welcome and for his very thoughtful utterances. Mr. Atkins went on to speak of the educational work of the provincial universities, and said that the Society of which he had the honour to be President was entirely in sympathy with that work, and the Society desired more and more to associate itself with the work of the Universities. He felt that the pharmacists of the future would receive their scientific training in the Universities, and would become highly trained and highly cultured.

Presidential Address.

The President then delivered his address, which is printed in full at page 134, *et seq.*

Mr. Atkins said there were some privileges attaching to old age, and as, in the absence of Dr. Attfield, he was the senior Vice-President of the Conference present on this occasion, the privilege of thanking Mr. Idris for his address fell upon him. He was not going to discuss the address, but would give that old formula for that which requires much thinking about, "Read, mark, learn, and inwardly digest." Having complimented Mr. Idris on the excellence of his address, he went on to comment on the fact that so many gifted and brilliant men in Parliamentary and public life came from Wales, and expressed the hope that ere long Mr. Idris would occupy a seat in Parliament, where he would be an eloquent and intelligent exponent of pharmacy. He moved that the best thanks of the Conference be accorded to Mr. Idris for his presidential address.

Mr. J. W. White (Clifton) seconded the motion, which was carried with acclamation.

The President replied, and in doing so thanked Mr. James Baker, of Clifton, for giving to each member of the Conference a guide book containing articles by Professor Lloyd Morgan, Mr. J. W. White, F.L.S., and other contributors. He also, on behalf of the Conference, thanked the conductors of the *Pharmaceutical Journal* for supplying reprints of the papers to be read at the Sessions of Conference for the convenience of members.

Mr. Ransom (Hon. Sec.) then read letters of apology from several members who were unable to be present, and also the following letter from Dr. Attfield:—

Bristol and the Birth of the B.P.C.

To the President of the British Pharmaceutical Conference:—

Dear Mr. Idris,—It will interest both residents and visitors attending the sessions of the British Pharmaceutical Conference at Bristol this year to learn the exact circumstances of the connection of that city with the foundation of the Conference at Newcastle-upon-Tyne in 1863. In the *Pharmaceutical Journal* for May, 1863, page 506, Mr. Richard Reynolds suggested that pharmacists should at the time of the meeting of the British Association at Newcastle in the following August, confer as to the best mode of promoting "Systematic Scientific Inquiry." In the Journal for June, page 562, Mr. Henry B. Brady supported Mr. Reynolds, and on page 563 appeared a letter from Mr. George Frederick Schacht, referring to his suggestion of "several years ago" that "the annual meetings of the Pharmaceutical Society should be held not always in one fixed place, but in rotation at the various towns of importance where its members resided." In that letter he again urged the adoption of this course. On neither occasion, however, did his views meet with concurrence so far as an annual provincial meeting of the Pharmaceutical Society was concerned, but considerable approval was expressed in 1863 respecting an annual provincial gathering of pharmacists generally, and I may say at once that thereupon Messrs. Reynolds and Brady urged the present writer to join them in starting such a body, and that, as a result of a circular we issued on July 21, 1863, fifty prominent pharmacists, including Mr. Schacht, expressed their cordial approval of the scheme, and the present British Pharmaceutical Conference was founded at Newcastle-upon-Tyne on September 2, 1863.

But my present object concerns the connection of Bristol with the birth of the Conference. Until a week or two ago I had been unable to trace any report of the occasion on which Mr. Schacht had urged the holding of provincial gatherings of pharmacists from all parts of the country. He himself was once asked respecting this point, but could not recall the time or place. Recently I searched the early volumes of the *Pharmaceutical Journal*, and, in the monthly number for September, 1852, page 123, I found the missing link. It is contained in a report of "A Meeting of the Chemists and Druggists of Bristol and Clifton, held at the rooms of the Fine Arts Academy, on the Drawbridge, on Monday evening, August 9, 1852, when Mr. Jacob Bell attended to explain the provisions of the Pharmacy Act." I cannot do better than transcribe the remarks which bear on the subject to which attention is now drawn:—

Mr. Schacht said he was anxious to take the present opportunity, which, he thought, was an occasion favourable for any expression of opinion upon affairs connected with the Society, to suggest the establishment of annual meetings for scientific objects connected with pharmacy, which should circulate through the chief towns in the provinces, somewhat upon the model of the Provincial Medical Association. He thought that meetings of this character, held annually in different localities, would have the effect of stimulating the provincial members to a more active co-operation, and that they might often be made highly instructive, by selecting as the place of meeting towns which presented peculiar objects of manufacturing interest. He thought, further, that it would be more easy to keep alive the spirit of assemblies of this variable description, as, in addition to the attractions which the several districts might present, there would be some local pride to influence the residents in each neighbourhood to support the character of the meeting in which they were most immediately concerned. It was well known that this feeling was strongly entertained in the various towns in which meetings of the British Association and other societies had been held.

Mr. Bell approved the suggestion of the provincial scientific meetings, and felt sure that the Council would give it their best consideration.

Mr. R. W. Giles agreed in expecting great benefit from the adoption of Mr. Schacht's suggestion, which, he thought, would foster a scientific taste in the followers of pharmacy. He thought it no inconsiderable merit in the scheme that it would afford a legitimate opportunity of combining technical improvement with that bodily relaxation which close attendance to an exacting occupation restrained to an injurious degree, and he was glad to find that it would have Mr. Bell's support with the Council.

It will be seen that in these extracts from speeches thus delivered at Bristol fifty-one years ago were laid down the principles of (*a*) the fostering of pharmaceutical research and (*b*) the promotion of friendly intercourse amongst pharmacists, which form the two objects of the organisation termed the "British Pharmaceutical Conference," whose members now assemble for the second time at Bristol forty years after its foundation at Newcastle in 1863.

Personally I much regret to be absent from the gathering, but at the time and for a few weeks afterwards I shall be in the hands of a well-known surgeon, who promises such results as will enable me to attend meetings of the Conference for years to come.—Yours faithfully,

John Attfield.

Watford, Herts, July 22, 1903.

Vote of Condolence.

The President said there was one gentleman—a very good friend of the Conference—who was absent through circumstances in which all sympathised. Mr. N. H. Martin, of Newcastle, had suffered a severe loss, and the Conference had not only lost the presence of Mr. Martin this year, but it would feel the permanent absence of Mrs. Martin. In these circumstances he felt that the Conference would wish to express its sympathy with Mr. Martin in his grief.

The sympathy of the Conference was expressed by each member rising.

The Secretary then read the following

List of Delegates to Bristol Meeting, 1903.

Pharmaceutical Society of Great Britain.—President, Vice-President, Messrs. Cross, Glyn-Jones, Newsholme, Wootton, Gifford, Symes, Cooper.

Pharmaceutical Society (North British Branch).—Messrs. David B. Dott (Chairman), Thomas Dunlop (Vice-Chairman), W. B. Cowie, W. Cummings, W. Giles, C. Kerr, T. Maben, A. Naysmith.

Pharmaceutical Society of Ireland.—President (Mr. G. D. Beggs), Vice-President (Mr. Johnston Montgomery), Messrs. John Smith, Patrick Kelly, W. F. Wells.

Belfast Chemists' and Druggists' Society of Ireland.—Mr. W. J. Gibson.

Bradford and District Chemists' Association.—Messrs. Arthur Hanson, R. W. Silson.

Dover Chemists' Association.—Mr. R. M. Ewell.

Edinburgh Chemists', Assistants', and Apprentices' Association.—Messrs. W. B. Cowie, Wm. Duncan, J. Rutherford Hill.

Exeter Association of Chemists and Druggists.—Messrs. F. W. Vinden, Henry Gadd, J. H. Lake, T. Tickle, P. F. Rowsell, T. C. Milton, and H. Wippell Gadd.

Forfarshire and District Chemists' Association.—Messrs. A. B. Anderson, Chas. Kerr, Jas. Russell, Wm. Cummings, A. Naysmith, J. H. Thomson.

Glasgow and West of Scotland Pharmaceutical Association.—Messrs. W. L. Cowie (President), R. Brodie (Vice-President), J. Foster, J. McMillan, G Robertson, T. Maben.

Grimsby and District Chemists' and Druggists' Association.—Mr. Cor. Willson (Vice-President), and Mr. H. W. Colley (Secretary).

Leeds and District Chemists' Association.—Messrs. F. W. Branson (President), and F. Pilkington Sargeant.

Liverpool Chemists' Association.—Messrs. R. C. Cowley, Edw. Evans, jun., H. Evans, Dr. C. Symes, John Alexander, Prosper H. Marsden, J. Shacklady.

London Chemists' Association.—Messrs. R. B. Betty, A. Cooper, W. S. Glyn-Jones, R. H. Jones, W. Watson Will, F. W. Freeman.

Western Chemists' Association (of London).—Messrs. J. W. Bowen (President), Frank A. Rogers (Vice-President), W. Prior Robinson.

Chemists' Assistants' Association, London.—Messrs. C. J. Strother and W. Garsed.

Newcastle-on-Tyne and District Chemists' Association.—Messrs. G. F. Merson, George Foggan, T. Maltby Clague, F. Gilderdale.

Oxford and District Chemists' Association.—Mr. G. C. Druce (President), and Mr. H. Mathews.

Plymouth, Devonport, Stonehouse and District Chemists' Association.—Messrs. J. Davy Turney and W. Herbert Woods.

Sheffield Pharmaceutical and Chemical Society.—Messrs. G. T. W. Newsholme, G. Squire, A. R. Fox, H. Antcliffe, F. A. Upsher Smith.

Manchester Pharmaceutical Association.—Messrs. Johnson, Kidd, Wild and Kemp.

Midland Pharmaceutical Association.—Messrs. A. W. Gerrard (President and F. H. Alcock (Vice-President).

Brighton Pharmaceutical Association.—Messrs. Savage and Yates.

Cambridge Pharmaceutical Association.—Messrs. E. H. Church and E. S. Peck.

The President welcomed the delegates, and also read a letter from Mr. Charles Umney, who wrote regretting his inability to be present.

Mr. E. S. Peck then read the following

Report of the Executive Committee.

During the past year the Executive Committee has met in London on several different occasions. It has to report with profound regret the removal by death of several old and well-valued members of the Conference, both at home and abroad—no less than seventeen in all. Amongst the number special mention must be made of F. Baden Benger, who presided at Bath in 1888 with such marked success, and who filled the office of Honorary Secretary from 1871-1884. His unfailing courtesy and kindliness of manner endeared him to all those with whom he came in contact, and his devotion to the interests of the Conference while in office contributed largely to its success. The death of John Moss, who held the post of Treasurer for five years, and whose contributions of papers were always of great practical value, is also a serious loss. Amongst other distinguished members who have passed away must be recorded the names of C. R. Blackett, President of the Pharmacy Board of Melbourne; H. Collier, formerly an energetic member of the Executive, and frequent contributor of papers; and G. H. Grindley, of Dublin, who filled the office of Auditor. Twenty members have resigned, and over fifty have been elected as new members. The Research List has again been thoroughly revised, and through the kindness of the editors of the various journals connected with pharmacy has been well circulated. The Executive wish to take this opportunity of thanking those members who are working out these subjects, and wish also to invite suggestions for new items and offers from those willing to undertake the work. Two grants from the Research Fund have been made, and the results of the work done will be communicated to this meeting. Mr. W. W. S. Nicholls will report upon "Ferri Arsenas, P.B.," and Mr. E. W. Pollard upon "A Spurious Cusparia Bark." It has been considered by many that the time has arrived when a General Index of the 'Year-Books of Pharmacy,' from 1886-1903, should be compiled. Careful inquiries as to cost of production have been made, and a circular issued to each member upon the subject. The Executive wishes to draw special attention to this, and to express the hope that the response given will be sufficient to warrant them in undertaking the work. It is with sincere regret that the Executive learns that Mr. F. Ransom feels compelled, by reason of increasing business engagements, to retire from the Secretaryship—a post which he has held for so many years with such marked ability, courtesy, and tact. The Secretaries have, during the past year, endeavoured to promote increasing interest in the Conference amongst our Colonial friends, and Mr. G. W. T. Rich, of Brisbane, has kindly consented to act as Colonial Secretary for Queensland. The Executive believes that there is considerable evidence of an increasing desire on the part of pharmacists generally to form a bond of union amongst themselves, and the various associations established for the advancement of pharmacy throughout the Empire, and ventures to suggest that one of the best means of attaining this object is to largely increase the membership of the Conference, and trusts that in the coming year more pharmacists both at home and abroad may avail themselves of the advantages to be gained thereby. Mr. J. O. Braithwaite remains on as Editor of the 'Year-Book,' and has placed in the hands of the printers the MSS. of Parts I. to IV. The Executive has entered into a fresh arrangement with the printers, whereby it is hoped that the 'Year-Book' will be issued somewhat earlier this year. The Assistant-Secretary, Mr. J. Hearn, still continues to carry on his part of the work with interest and care.

Mr. J. C. Umney (Treasurer) then presented the financial statement. He commented on the success of the Dundee meeting last year, and announced that the Dundee friends had been able to substantially help the Conference to the extent of £15. He hoped that another year the Conference would be quite out of debt.

Dr. Symes moved that the report of the Executive Committee and the Financial Statement be received and adopted. He referred to the increasing success and progress of the Conference, not only at home, but also abroad. He regretted that the Conference was about to lose the services of the Honorary Secretary, Mr. Ransom.

Mr. G. D. Beggs seconded the motion, and emphasised the remarks of Dr. Symes on the loss of Mr. Ransom's services. He was very pleased to note that there was an increase of thirty members on the year.

Mr. G. C. Druce also supported the motion, and referred to the fact that as the outcome of the effort made at Dundee last year there was a prospect of shortly erecting a memorial to the memory of George Don, an old Forfarshire botanist, in his native town.

Mr. Victor Say (Victoria), as a Colonial member of the Conference, thanked the English and Scotch members for their kind welcome to him, and said it was a great pleasure to be amongst them.

Report of the Formulary Committee.

Mr. F. C. J. Bird read the report of the Formulary Committee as follows:—

Since the last annual meeting of the Conference the Formulary Committee has held two meetings, at the first of which Mr. N. H. Martin was unanimously re-elected Chairman, and Mr. F. C. J. Bird was elected Secretary, in the place of Mr. W. A. H. Naylor, who felt unable to continue to perform the onerous duties of the position. The Committee cannot too strongly emphasise the debt of gratitude which the Conference owes to Mr. Naylor for having rendered to the Formulary Committee such valuable assistance as Honorary Secretary from the time that it was first appointed, in 1886, and the vote of thanks which was accorded to him was heartily endorsed by every member. At this meeting a number of formulæ were considered, and suggestions were made for new preparations to be added to the Formulary. Lists of these were subsequently distributed to the several members of the Committee, who experimented on the formulæ and processes which had been suggested. At the second meeting, held in March, 1903, many samples of the above preparations were examined and discussed, and certain formulæ were accepted as complete. Others were referred to the members for further experiment, and an additional list of preparations for inclusion in the next edition of the Formulary was agreed upon, which list was afterwards sent to the various members who had undertaken to work out the details for suitable formulæ.

The Committee would again call the attention of the members of the Conference and of all dispensing chemists to the appeal which was made in the report for 1901 ('Year-Book,' page 332), and again in 1902 ('Year-Book,' page 376), which appeal was repeated by letters to the pharmaceutical journals after the first meeting of the Formulary Committee in October, 1902, but up to the present no response has been received to these appeals. Chemists throughout the country must frequently be dispensing prescriptions in which preparations of "particular makers" are specified, for the simple reason that no such preparation is in the British Pharmacopœia or in the B.P.C. Formulary. It is disheartening to the members of the Formulary Committee not to receive more assistance in the compilation of a list of substances which are in actual use from those who alone can furnish the information. The Formulary Committee fear that many members of the Conference do not sufficiently bear in mind the terms of the resolution under which the Committee was appointed in 1886, and which reads as follows:—

"That in order to secure greater uniformity in composition and strength in non-official remedies, and also to enable the medical profession to prescribe them with definite knowledge of those qualities, and without indicating any particular maker, the Conference undertakes the preparation of a Formulary of Non-Official Remedies."—'Year-Book,' 1886, page 494.

The copies of the last edition of the Formulary are fast diminishing, and if the Committee is re-appointed, it is desirable that it should be in a position to go to press with a new edition during the coming year.

The report was adopted.

Mr. Ransom then read the report of Dr. F. B. Power of his visit as delegate to the International Congress of Applied Chemistry:—

Report on the Congress of Applied Chemistry.

June 30, 1903.

To the Honorary Secretaries of the British Pharmaceutical Conference.

Dear Sirs,—Having had the honour of being appointed to officially represent the Conference at the Fifth International Congress of Applied Chemistry, held at Berlin, June 2 to 8, I beg to present the following brief report. The Congress was opened on the evening of June 2 by a general session held in the large hall of the Reichstag building. The attendance was unprecedentedly large, having been estimated at about 2,500 to 2,800, and there was a larger proportion than usual of English chemists. The business of the Congress consisted chiefly in the reading of scientific papers, which were divided among eleven sections, representing the different branches of applied chemistry. Among these, Section 8 was devoted to medical and pharmaceutical chemistry, hygiene, and the chemistry of alimentary products, and its president

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FINANCIAL STATEMENT FOR THE YEAR ENDING JUNE 30, 1903.

The Hon. Treasurer in Account with the British Pharmaceutical Conference.

1902.	*Dr.*	£	s.	d.	£	s.	d.
July 1.	To assets forward from last year—						
	Cash at Bank				5	19	8
1903.							
June 30.	To Members' Subscriptions				388	1	0
	„ Dundee Suscription (Balance of Fund)				15	0	0
	„ Sale of 'Year-Book' by Publisher	13	6	8			
	„ „ „ Secretary	2	0	0			
					15	6	8
	„ Advertisements in 'Year-Book'	67	1	8	67	1	8
	„ Sale of Formulary	3	0	0	3	0	0
	„ Liabilities on Open Accounts—						
	Butler and Tanner	133	13	2			
	McCorquodale and Co.	2	16	0			
	Due Assistant Secretary for Salary and Rent to Date	13	15	0			
	W. Carling and Co.	0	18	6			
					151	2	8
	„ Bank allowance on P. Order unclaimed				0	0	3
	„ Bell and Hills Fund				27	17	10
					£673	9	9

1902.	*Cr.*	£	s.	d.	£	s.	d.
July 1.	By Bell and Hills Fund, forward from last year				27	18	8
1903.							
June 30.	„ Expenses of 'Year-Book' for 1902—						
	Printing, Publishing, and Binding	200	10	8			
	Banding and Parcelling	3	2	6			
	Postage and Distributing	16	9	2			
	Advertising 25/6, Publishers' Charges £1, and Commission on Sale 16/15/5	18	1	11			
	Editor's Salary	100	0	0			
					338	4	3
	„ Expenses of Formulary—						
	Comm. on Sale by Publishers	0	6	0			
					0	6	0
	„ Sundry Expenses—						
	J. P. Mathew and Co., Dundee, Programmes	1	5	6			
	Assist. Sec. at Annual General Meeting	10	0	0			
					11	5	
	„ Assistant Secretary's Salary for one year to date	45	0	0			
	Rent of Office for one year to date	10	0	0			
					55	0	0
	„ Postages 14/1/8, Editor 14/4				14	16	0
	„ Printing and Stationery—						
	McCorquodale and Co.	5	5	0			
	Editor	0	6	5			
	W. Carling and Co.	0	18	6			
					6	9	11
	„ Petty Cash				12	0	1
	„ Foreign Journals for Editor				5	2	0
	„ Bank Charges	0	1	4			
	Extra Poundage, 1d., 1d.	0	0	2			
					0	1	6
	„ Liabilities of last year, since paid—						
	Butler and Tanner	34	15	4			
	Assistant Secretary's Salary	13	15	0			
	Postage and Petty Cash	6	18	0			
					55	8	4
	„ Assets, J. and A. Churchill—open a/c	65	0	5	65	0	5
	„ Balance at Bank	83	17	2			
	„ Less unpresented cheque	14	19	8			
					68	17	6
	„ Petty Cash in Secretary's hands				12	19	7
					£673	9	9

The Bell and Hills Fund.

1902,		£	s.	d.	£	s.	d.
July 1.	To Balance from last year	27	18	8			
	For 1 year's Dividend on Consols	9	5	8	37	4	4
Aug. 1.	By Hy. Kimpton a/c for Books				9	6	6
					£27	17	10

Assets.

In Account with the British Pharmaceutical Conference.

£360—2½ per cent. Consolidated Stock ....

The British Pharmaceutical Conference Research Fund.

1902.		£	s.	d.	£	s.	d.
July 1.	To Balance	47	5	0			
Dec. 30.	Cr. by Wm. W. S. Nicholls, Brockley				2	0	0
1903.							
April 28.	Cr. Evelyn Wm. Pollard, Ryde I/W				2	0	0
	By Balance				43	5	0
		£47	5	0	£47	5	0
	To Balance	£43	5	0			

Examined and found correct, July 13, 1903.

J. W. BOWEN,
W. PRIOR ROBINSON, } *Auditors.*

was Dr. E. A. Merck, of Darmstadt. On account of the diversity of subjects comprised by this section it was found necessary to divide it into two sub-sections, and of these the one restricted to the consideration of subjects relating more or less directly to pharmacy was presided over by Professor H. Thoms. As it is customary on such occasions to appoint various members of the respective sections to preside in turn over the sectional meetings, by virtue of the compliment thus bestowed on foreign members, the chair was occupied during one of the sessions by your delegate, and on the following day by Mr. Peter MacEwan. This occasion afforded me the opportunity of presenting the official greetings of the British Pharmaceutical Conference, as a representative organisation of British pharmacy, which were most cordially received. The meetings of the section devoted more especially to pharmacy were well attended, and a number of papers were communicated, but as these, together with many other details of the Congress as a whole, have already received more or less extended notice in the various journals, they need not be enumerated or further referred to here. The programme of the Congress was, in its entirety, an elaborate one, and included many social functions of a high order, as well as the opportunity of visiting many scientific and technical institutions of note, and other places of interest. In considering the results of such gatherings it may safely be concluded that, while many of the scientific papers presented are of permanent and substantial value, one of the by-no-means least important benefits accruing therefrom is the opportunity which they afford for the renewal of old friendships, or for forming anew the personal acquaintance of those of different nationalities who are engaged in similar studies or pursuits, and are animated by the same desire for the promotion of science. Similar advantages are certainly to be derived from the less pretentious, though none the less enjoyable annual meetings of our own Conference. At the close of the Congress invitations were extended by the representatives of societies in London and in Rome to hold the next meeting in one of the respective cities. A vote of the members resulted, by a small majority, in favour of Rome, and the Sixth Congress of Applied Chemistry is, therefore, expected to convene in the latter city in 1906. It is to be hoped that it will be crowned with as large a measure of success as has attended the recent meeting in the metropolis of the German Empire.

Very respectfully,
Frederick B. Power.

A vote of thanks was accorded to Dr. Power for his report.

READING OF PAPERS.*

Professor Sydney Young, D.Sc., F.R.S., described a process for the

Preparation of Absolute Alcohol from Strong Spirit.

The method of dehydration depends on the fact that when a mixture of alcohol, benzene, and water is fractionally distilled, the last portion of the distillate consists of that single component which was present in excess, in spite of the fact that the boiling-point of alcohol is less than that of either benzene or water. By suitable arrangement of quantities, and redistillation, the greater part of the alcohol in the spirit may be obtained as pure alcohol.

Mr. Thomas Tyrer (London) said they were very much indebted to Professor Young for the demonstration he had given, and particularly for his references to the actual apparatus. Some of those present might be slightly tickled at Professor Young's description of the delicate apparatus shown as "still heads." Nevertheless, they were so, and that it was a correct term might be illustrated by the fact that these small scientific apparatus for research might become the models, ultimately, for the comparatively complicated apparatus used for the application of the scientific principles by which they obtained similar results on a commercial scale. Mr. Tyrer then recalled the careful experiments made by Dr. Squibb, and said it was interesting to have seen demonstrated the very work that Squibb had been engaged on. He also referred to Professor Young's paper read before the Chemical Society, relating to methyl alcohol and the removal of mixed water. That paper struck him so much that he proceeded to make a series of experiments. It was well known how difficult it was to purify methyl alcohol on a large scale, and a good deal of trouble had been caused by the demand for pure methyl alcohol for standardisation purposes, and he wished publicly to express his very great thanks to Professor Young for the suggestiveness of the observations then made in his paper He personally took steps at once to adopt his suggestions for the removal of water from methyl alcohol, which had been successful on a large scale.

The thanks of the meeting were then given to Professor Young for his paper and demonstration.

Professor Young said he was interested to hear the remarks of Mr. Tyrer concerning Dr. Squibb. He believed the results of Dr. Squibb were due to the extreme carefulness of his experiments, in that he got the lime to act chemically on the alcohol, forming a little ether.

Mr. Tyrer said Dr. Squibb had a lady assistant who rendered him excellent help, and he recollected when he was speaking to Dr. Squibb about the matter under consideration she turned round and said: "You know we found ether."

An adjournment was then made for luncheon, and, on resuming the Sessions of Conference,

Mr. Peter MacEwan gave a lantern demonstration illustrating a paper by Professor H. Thoms, Ph.D., on the

Pharmaceutical Institute of the University of Berlin.

The Institute was opened in October of last year as a department of the University of Berlin, and is devoted to giving students of pharmacy, who are proceeding to the State examinations, instruction in pharmaceutical subjects, while they may take the more scientific courses, such as that in chemistry by Professor Emil Fischer, at the Chemical Institute in Charlottenberg. The Institution is situated in Dahlem, a suburb of Berlin, and is within the grounds of the Berlin Botanical Gardens. Professor Thoms is the Director of the Institute. The approach to the Institute is through the Botanic Gardens, in which flora native to nine geological formations are represented. Of the various departments within, the director's private laboratory, the laboratories for organic, qualitative, and toxicological chemical work, weighing rooms and dark rooms are on the first floor. The largest laboratory of the Institute is situated on the second floor, and accommodates seventy-two workers. There is also a small lecture hall or tutorial room, giving accommodation to sixty-one students. In the machinery room, a manufacturing room where all the processes for the production of galenicals are conducted on a fairly large scale, the apparatus consists of grinding and sifting apparatus, steam pans, vacuum apparatus, and stills. In contrast to these, a series of slides was shown depicting old-time distilling apparatus, reproduced from Peters' well-known historical work.

Dr. Power (London) said he had the pleasure of visiting the institute at Berlin with Mr. MacEwan, and it was a delight to see the very admirable and beautiful equipment of that institution. It might certainly be regarded as the best that now exists in Germany or in any other country.

Dr. Symes (Liverpool) said it struck him that distilled water did not usually require to be purified, and even if it did he should hardly have thought that sand and coke were suitable for filtration purposes, but would rather contaminate the water. He would like to ask if Mr. MacEwan had made any inquiries in regard to that point.

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* The papers read at the Sessions of Conference are, with one exception, printed in full at pages 144 *et seq.* of this week's Journal, but brief summaries are embodied in the report for the convenience of readers.

Mr. MacEwan said the sand and coke were carefully washed before the distilled water was passed through. It was very rarely that distilled water could be got free from ammonia, and, by passing it through the sand and coke, the ammonia was removed.

The **President** said he had not found it necessary to filter distilled water. There might be a little ammonia in distilled water, which would, of course, be occluded by filtration. He had found that if perfectly pure water was not used to start with there might be a certain amount of organic matter, and an oily, tarry odour about it. In regard to the use of coke he should have thought that animal charcoal would have been better. He had always found that if there was free ammonia present in distilled water it could be got rid of by having the water well boiled.

Mr. **Tyrer** said he should just like to refer to something that the late Mr. Martindale did in connection with the matter under notice. When Dr. W. H. Martindale was finishing his education at Marburg his father went over to see the institute there, and though the place was ancient and cramped for room he found that the apparatus was of the very best, and he (Mr. Tyrer) knew that Mr. Martindale said he would see to it that similar apparatus was provided at 17, Bloomsbury Square. The fact that the President of the Pharmaceutical Society was present reminded him of that desire on the part of Mr. Martindale, and he thought that if something could be done to carry out that desire it would be a memorial to Mr. Martindale as well as a good thing for pharmacy.

Dr. **Symes** supported the suggestion made by Mr. Tyrer. Ten years ago he advocated the establishment of a practical laboratory at 17, Bloomsbury Square, where real pharmaceutical work could be carried out. When the Research Laboratory was instituted he urged that it should be used for pharmaceutical, rather than scientific, research, and he was glad to know that recently it had been doing better in that respect. In the past the Research Laboratory had contributed considerably towards the advancement of scientific men, but very little towards pharmaceutical advancement. He strongly pressed for the basement of the laboratory to be fitted up with pharmaceutical apparatus, and for some time it was known as "Symes' playground." He was glad that Mr. Tyrer had referred to the matter, and he hoped that something would be done, because there was no place in this country where pharmacists could go for disinterested advice in connection with the fitting up of a pharmaceutical laboratory.

Mr. **H. Wippell Gadd** (Exeter) asked how the funds were provided to maintain the pharmaceutical institute at Berlin—whether they were public funds or were there a sufficient number of students to make it self-supporting?

Mr. **MacEwan** explained that it was a department of the University of Berlin, and the Germans were more apt to look to the Government for help in educational work than was the case in England. The Pharmaceutical Institute was not built for to-day, but for the next generation, and that was why the Germans were ahead of England in educational matters—they looked forward. In regard to students, there were between thirty and forty attending the institute, and their fees would come to about £10 each.

Mr. **Druce** (Oxford) said that when visiting the educational institutions of Buda-Pesth recently he was very much ashamed of the backward condition of teaching in this country, as compared with that at Buda-Pesth. He saw there pharmaceutical students studying side by side with medical students, and it was very pleasing to see such a thorough system of teaching. He hoped that in the near future a more thorough and more comprehensive method of teaching would be adopted here.

Mr. **Charles Kerr** (Dundee) said that the remarks of Mr. Druce reminded him of what he saw at Beyrout in Smyrna, in connection with the American Mission College. They had there a thoroughly-equipped laboratory for pharmacists. He was taken over the dispensing rooms, and was very much struck by the beauty of the apparatus and the manner in which the rooms were laid out for instructing students of pharmacy. There was a two years' curriculum, and the fees were £10 a year for those who lived out, and about £30 for those who lived on the premises. The institute was supported by voluntary contributions from America, and he thought it was an excellent example of voluntary work as compared with Government institutions.

The **President** said he knew the institute mentioned by Mr. Kerr, but it must be remembered that Americans did not educate their pharmacists as they were educated in England. Moreover, it was a missionary effort.

A vote of thanks to Mr. MacEwan was carried by acclamation.

Dr. **A. F. Dimmock** and Mr. **F. W. Branson**, F.I.C., described a new method for the

Determination of Uric Acid in Urine.

The warmed urine is saturated with ammonium chloride, and the precipitate of ammonium urate is allowed to subside, and, after separation, is washed with ammonia solution. The precipitate is then treated with sodium hypobromite solution in a specially-arranged nitrometer.

Mr. **W. A. H. Naylor** (London) asked what was intended by liq. ammon. fort.; whether the specific gravity was 0·880 or that of the B.P.? Also if the authors had obtained good results from dilution of about 1 in 10,000.

Mr. **F. H. Alcock** (Birmingham) asked what amount of wash water was found to be the most suitable to effectually wash the precipitate without undue loss. He also desired to know what was the real composition of the precipitate, and whether it was contaminated by other organic substances found in urine.

Mr. **Branson** replied that solution of ammonia of sp. gr. 0·880 was rarely found in commerce of full strength and that the B.P. strength of sp. gr. 0·891 was used; further, that dilution of 1 in 10,000 of uric acid gave quite practicable amounts of nitrogen for the purpose of measurement. In regard to Mr. Alcock's question, he said the statements of Hopkins and others were accepted as to the composition of ammonium urate, and that definite quantities of dilute ammonia were recommended, as a little loss always occurred in washing.

Dr. F. B. Power read in abstract a paper by Mr. **P. E. F. Perrédès**, B.Sc., F.L.S., dealing with the

Comparative Anatomy of the Barks of the Salicaceæ.—Part I.

The general anatomical features of the barks in the natural order are first considered. These general considerations are followed by the systematic examination of the barks of the following eleven species of *Populus*:—*P. tremuloides*, *P. alba*, *P. grandidentata*, *P. canescens*, *P. tremula*, *P. balsamifera*, *P. angustifolia*, *P. deltoides* (= *P. monilifera*, Ait.), *P. pyramidalis*, *P. nigra*, and *P. fremonti*. The whole account is concluded with an analytical key to the poplar barks just mentioned, detailed consideration of the willow barks being reserved for Part II., which will be published later.

Mr. **E. M. Holmes** followed with a paper on the

Willows Used in Pharmacy.

Different species of the genus *Salix* are known respectively as willows, osiers, and sallows. The tree willows include *Salix alba*, used for wooden legs, chip-boxes, and cricket bats; *Salix fragilis*, sometimes called "red willow," from which salicin is for the most part manufactured; and *Salix triandra*, much used for white basket work. The principal osiers are *S. viminalis*, *S. vitellina*, *S. purpurea*, *S. acutifolia*, and *S. pen-*

tandra. Some of these contain salicin. The shape of the stipules is considered the best indication of the species.

Mr. Holmes said the valuable papers that had been prepared by Mr. Perrédès on several occasions illustrated the value of the training he had received at 17, Bloomsbury Square in microscopic work, and he thought the School of Pharmacy ought to be congratulated on having furnished Burroughs, Wellcome, and Co. with such a capable worker. Since writing his own paper on the "Willows Used in Pharmacy" he had received a communication from Mr. John J. Plater, willow merchant, of Birmingham, who stated that the best quality of osiers grown in the United Kingdom are known to the trade as black mauls, long skins, Spaniards, Germans, French, stone, new kinds, and red buds, the latter the toughest of all. In addition, a large quantity of common osiers, known as "sallies," and common osiers, etc. The secret of osier growing being a dying industry in some parts of this country was that farmers are as a rule dilatory in the planting, do not keep the beds clean, leave the weeds to race with the osiers, and when they bundle the rods up for market they send them away in such a condition that traders buy thousands of bundles abroad at a higher price simply because they are tied up carefully in different sizes and made more marketable at this end. For instance, within the last fortnight Mr. Plater's firm had had over 4,000 bundles of rods delivered to their works, grown at various distances within 100 miles of Birmingham, the bulk of which had reached them in a very loose condition, in so much that the firm had to send men to the railway station to tie them up properly into bundles before the railway company's servants could take them out of the trucks and load them on wagons. Willows consigned to his firm from France, Germany, Holland, Belgium, and Madeira were delivered tight and trim, notwithstanding the many times of handling compared with English willows. The above complaint *re* the condition in which English osiers are sent away did not apply to the following counties:—Berks, Somersetshire, Notts, Lincs, and some growers in the county of Leicester. The finer baskets were made abroad for the simple reason that the people there have had a better technical training in the art of basket making. Where osiers are cultivated in this country and planted on soil suitable for their growth, the quality is of the best. White and red willow wood is not in general demand for basket-making, but the red willows, where planted on the same lines as osiers, produce a very good quality for basket-making, such as are grown in Belgium in particular. He only bought that quality there, other qualities grown in Belgium being soft and too poor in quality for their basket work. The red withies are cultivated very little in this country, and the bulk of them that are used are imported from Belgium; as also the peeling, or bark, for chemical purposes, which costs, f.o.b. Antwerp, about £4 per ton or less, according to the supply and demand. Mr. Plater also mentioned that he was in Dublin a fortnight ago at a small conference there, by the invitation of the Board of Agriculture for Ireland, on the art of osier growing and the suitability of the basket industry for Ireland.

Mr. Druce (Oxford) said with reference to the occurrence of salicin in the white willow (*Salix alba*), and its being absent from *S. vitellina*, it appeared to him to be in favour of supporting the idea of the two plants being specifically distinct. He might say that *S. purpurea* and forms of it were extensively cultivated in the Kennet Valley of Berkshire, and there was no reason why manufacturers should have to resort to Belgium or Holland for willow bark for the manufacture of salicin, when the red willow *Salix rubra* of Hudson, a hybrid of *S. viminalis* and *S. purpurea*, which produced an excellent pliant osier, and also contained a large percentage of salicin, might easily be grown in Great Britain, and its culture might easily reward not only the pharmacist but the agriculturist. Proper care should, of course, be taken in gathering and forwarding to the manufacturer, so that it might compete in quality with that sent from abroad.

Mr. W. B. Cowie (Edinburgh) said he was particularly interested in willow barks from the chemical side of the subject. He had examined a few barks for Mr. Holmes, and the results had been extremely varying. There was a great deal to be gone into, not only in the cultivation of the bark, but also in the keeping of the bark for the preparation of salicin, and, in addition, there was a great deal to be done in regard to better methods for the examination of the bark. That was one thing that the Conference might very well take up. He mentioned this because if various kinds of bark were to be used and it was found to be desirable to have some spirituous preparations such as the tinctures, a galenical preparation of salicin would be necessary, although it was the sole active principle. He was expecting to receive a few specimens of barks, and if they came to hand he should forward them to Mr. Holmes for investigation.

The thanks of the Conference were accorded to Mr. Holmes and to Mr. Perrédès for their contributions to a knowledge of the willows of commerce.

Mr. W. J. Hallett described the

Thermal Waters of Bath.

The author dealt in turn with the theory of causation, composition (which includes helium), physical characters, origin of the constituents, and temperature, gases, heat, and medicinal efficacy of the waters.

Mr. Tyrer referred to the recent literature on the subject of radium and helium, and said the suggestion passing through his mind was that if pharmacists were to be called upon to dispense such substances as helium it would be necessary in the pharmaceutical laboratory to make a more complete study of the spectroscope, as well as of the microscope, and it would be necessary to prepare considerably less doses than the 13·5 grains mentioned by Mr. Hallett as a homœopathic dose.

Mr. Druce hesitated to accept the statement that the waters of Bath were the only source of helium in large quantities. He believed the great thermal springs of Northern Africa would be found available for that purpose. In regard to helium emanating from radium he felt inclined to ask: "Has it been demonstrated that helium has emanated from radium?" He was not at all certain that it had.

Mr. Branson (Leeds) suggested that in addition to the spectroscope an electroscope would be found useful in dealing with such substances as radium and helium. He strongly recommended pharmacists to follow the advice given recently in the *Pharmaceutical Journal* to study this branch of modern science very closely, as it was likely to be of extreme importance in medicine in the future.

Mr. MacEwan said that Mr. Solly, who had been working with Professor Ramsay on the subject of the emanations of helium, in last week's *British Medical Journal* communicated a most interesting paper, which entered quite a new path in regard to the application of these emanations, viz., by inhalation for maladies of the lungs. Mr. Solly gave very full instructions as to how the emanations might be collected and administered to the patient, and he also referred to the use of thorium nitrate instead of radium. These things only showed how important it was that some pharmacists, at all events, could not be too well educated, because, if discoveries were made which upset all the theories of such scientists as Sir William Crookes concerning matter, and were then passed on to the pharmacist to carry into practical effect it would require highly educated men.

A vote of thanks was accorded to the author for his paper.

Mr. **Edmund White**, B.Sc., F.I.C., read a paper, by himself and Mr. **Henry Rodwell**, on

Compressed Tablets.

In a paper presented to the Conference in 1902, a new method of manufacture, involving the use of oil of theobroma as an excipient, was described. A modification of this process suitable for operations on a larger scale is now described, in which the powder to be compressed is granulated either with an aqueous emulsion of oil of theobroma, or with a solution of that substance in ether-alcohol, according to the nature of the material. A number of tried working formulæ are given. The tablets are used at St. Thomas's Hospital instead of pills and powders.

Mr. **Naylor** said one of the drawbacks of the suggestion made by Mr. White last year in regard to the use of theobroma and starch was that a very large proportion of excipient was required. That was an objection to the retail pharmacist, if not to a large hospital. There was another direction in which an improvement might be suggested, and that was that the tablet consisting of some insoluble material such as sulphonal should be made to disintegrate very readily when put into water. Mr. White had stated that when the tablet was put into the stomach disintegration took place; but such a result did not take place in cold water. There were a large number of tablets on the market which would crumble when put into cold water, and he thought it was advisable that when powders were made into tablets they should disintegrate quickly. He was very glad that Mr. White had gone into the subject of compressed tablets, because, with one exception, all the previous work that had been published in the pharmaceutical journals on the subject was very misleading, and to his mind was worse than useless. The exception was a paper read before the Conference a few years ago by Mr. Hardwick, of Bournemouth. A great many of the excipients he had tried, both in hand machines and on a large scale, had made tablets so hard and so compact, the matter cohering so firmly that it was possible for the tablets to remain in water for two or three days without showing any sign of solubility, even in the case of such a soluble substance as antipyrine. He thought it was high time that pharmacists who wish to make their own tablets had placed before them some practical method of preparing them, and he thought they were extremely fortunate in having the matter dealt with so ably as Mr. White had done.

Mr. G. F. **Merson** (Newcastle), referring to the paper read by Mr. White at the Dundee meeting last year, said he had found that with the formula then suggested by Mr. White, when a dark substance was used it was impossible to prevent the dark colour from showing, and he wished to ask if the theobroma emulsion was open to the same objection.

Mr. F. H. **Alcock** said he was very much pleased to hear Mr. White's remarks upon tablets and the general principles involved in making them. From the statements made in the paper in regard to iron tablets it would seem that Mr. White had not been able to get a successful pil. ferri. He was inclined to think that the presence of soap in the theobroma emulsion would interfere with that. Then again, in the santonin and calomel preparation, the soap being alkaline would affect the calomel.

Mr. E. W. **Pollard** (Ryde), speaking as a former assistant to Mr. Hardwick, said they had never experienced the difficulty mentioned by Mr. Naylor in regard to the insolubility of tablets made at the dispensing counter, and he questioned whether tablets made from Mr White's formula would remain in water for two or three days without disintegrating.

Mr. **White**, in reply, said he did not understand Mr. Naylor to say that the tablets made from his formula would not disintegrate, therefore the remarks made by Mr. Pollard would not require any reply. In regard to the very insoluble tablets mentioned by Mr. Naylor, he could only suggest that more starch should be added. With reference to Mr. Merson's question, he personally did not object to speckled tablets—rather the reverse. If a person made a solution of ammonia and it turned out "cloudy," he did not filter it, but boasted about its being cloudy, and in the same way the pharmacist might boom his speckled tablets. The formula published in the paper last year was devised to meet the requirements of the dispensing counter. In regard to Mr. Alcock's remarks, he did not say that he could not make an iron-pill tablet, but he would not put forward a formula until he could say that it would be satisfactory. He thought the difficulty in regard to the soap might be got over by substituting acacia in place of soap in the emulsion.

The meeting then adjourned till Wednesday, and the members of the Conference left Bristol by the 5.0 p.m. train for Bath, where the various places of interest were visited.

SECOND DAY'S PROCEEDINGS.

On Wedesday morning, July 29, the Sessions of Conference were resumed in the Lecture Hall of University College, Bristol, the **President**, Mr. T. H. W. Idris, in the chair.

Mr. F. C. J. **Bird** read two papers, of which the first dealt with

Liquor Rhei Concentratus, B.P.

Only about 60 per cent. of the total available extractive of rhubarb root is contained in a concentrated liquor made according to the Pharmacopœia. The author suggests the following extension of the B.P. formula. Continue percolation with more alcohol, and reserve the first 17 fl. oz., then percolate an additional quantity of 3 fl. oz., remove the alcohol from the latter, and evaporate the residue to a soft extract, dissolving it in 3 fl. oz. of glycerin; add to the reserved percolate sufficient to produce a final volume of about 20 fl. oz.

In a second paper by Mr. F. C. J. **Bird**,

Liquor Sennæ Concentratus, B.P.,

was discussed. The official process of extraction being found thoroughly unsatisfactory, the author suggests a number of alterations and additions to the B.P. process. Chloroform water is recommended to replace distilled water, percolation being followed by heat to remove chloroform, and it is proposed that the quantity of alcohol should be slightly increased. After seven days the product should be heated and, when cold, filtered.

Mr. E. F. **Harrison** (London) inquired if Mr. Bird had made any experiments to produce a liquor containing much more than 60 per cent. of the extractive, which must be considered far from satisfactory. Had the concentration and addition of the later portions of percolate been tried? He also asked whether, in Mr. Bird's experience, there was much demand for these preparations.

Dr. **Symes** thanked Mr. Bird for his very careful notes. Some years ago glycerin was largely used as a preservative agent, but, except where used in a somewhat large proportion of the finished preparation, it failed in that respect. It was, however, a valuable agent as a solvent and for retaining resinous matters in solution; it no doubt acted in that way in Mr. Bird's formula for liq. rhei. He thought it might probably exercise those properties more completely if it were added to the menstruum before, instead of after, percolation. He would like to ask if Mr. Bird had experimented in that direction.

Mr. **Naylor** said there could be no doubt that the suggestions of Mr. Bird were extremely valuable—suggestions which were greatly needed in the compilation of the future

B.P., as the present official preparation was a very unsatisfactory one. He thought it was well known that those engaged in the wholesale trade had been accustomed to Pasteurising their senna preparations, and he did not think that by subjecting it to the degree of heat for the period of time indicated by Mr. Bird the preparation was in any way deteriorated or rendered less efficient medicinally. It would, perhaps, be well to ascertain what the precipitate was that settled down and was subsequently removed.

Mr. **Bascombe** said Mr. Bird had not brought forward any standard for extractive. When the present B.P. was published he (Mr. Bascombe) made a number of experiments with liq. rhei conc. and liq. sennæ conc., and he found that after three years the average depreciation in extractive in the liq. rhei conc. was 1 per cent. per annum, and the average for the senna was rather less. He thought the addition of glycerin to the menstruum would be advantageous, but he suggested that instead of the addition of glycerin to the menstruum it be added to the weak percolate and evaporated in that form.

Mr. H. **Wippell Gadd** agreed that these preparations required to be improved; in fact, he might venture to say that the best improvement would be to improve them off the face of the earth. In his experience, there was very little demand for the preparations ten times the strength of the infusions. It was an awkward strength, and no one seemed to like it or to want it.

Mr. **Bird**, replying to Mr. Harrison, said his chief object was to improve the present formula by simple modifications rather than propose entirely new ones. He thought that the formula was by no means perfect, and very much better extraction could be ensured on the lines mentioned by Mr. Harrison; but that, of course, was a matter for further experiment. Dr. Symes had spoken of the use of glycerin as a preservative. He (Mr. Bird) had not used it in that capacity, but rather as a powerful solvent of the precipitable constituents of rhubarb. There was little risk of injuring by evaporation in the modified formula, as it was the weakest portion of the percolate which was evaporated to a soft extract. He did not add glycerin to the menstruum, as that appeared likely to furnish a preparation as troublesome as the present one. His object was to have an excess of solvent in the finished product. Mr. Naylor had mentioned the trouble caused by the bad-keeping qualities of these preparations. That had, he thought, been experienced by everyone more or less. He was glad to know that Mr. Naylor did not think exposure to a moderate evaporation injured the senna preparation. Although injury was not improbable, it was a point he had not had the opportunity of determining. The use of glycerin had an objection when the question of standards arose. The first results published by Mr. Bascombe soon after the appearance of the B.P. showed a certain loss in liq. sennæ after keeping one year. That was very similar to what occurred when the liquor was heated. These preparations were used very extensively in some parts of the United Kingdom, whilst in others they were almost unknown. He could hardly agree with Mr. Gadd in wishing for the disappearance of the liquors from the Pharmacopœia. He thought that with the processes somewhat modified they would very well represent the respective drugs, and that they form a useful series of preparations.

A vote of thanks was accorded to Mr. Bird for his papers.

Dr. F. B. **Power**, Ph.D., gave a *résumé* of a paper by himself and Mr. F. H. **Lees**, describing the

Chemical Examination of Ko-sam Seeds.

The seeds of *Brucea sumatrana* have been reputed in China to be of value as a remedy in dysentery. The authors have conducted an exhaustive chemical investigation of the seeds. They find no alkaloid, but the most important constituents are two bitter principles, neither of which can be regarded as quassin, the substance of which previous investigators had announced the presence, a fatty oil, a small amount of a hydrolytic enzyme, and a mixture of esters, probably of butyric acid. The therapeutic value of the drug is thought to be due to the combined action of its constituents.

Mr. **Holmes** congratulated Dr. Power on an excellent piece of work, which would probably be even more appreciated in the East than in this country. The native name resembled that of a drug used in Japan, the root of a species of *Sophora*, and, with the view of preventing accidental substitution of one for the other, he suggested that the botanical name should be used for the drug rather than the vernacular one. It was remarkable that whilst European medical men used ipecacuanha as a sheet anchor in dysentery, Eastern native doctors almost invariably used very bitter drugs, such as *Holarrhena antidysenterica* and *Alstonia scholaris*. He ventured to suggest that these bitter drugs probably acted as a substitute for bile, the absence of which was usually indicated by the colour of the fæces in most zymotic diseases. The first time that the seeds of *Brucea sumatrana* were presented to the Museum of the Society was many years ago, by the late Dr. De Vrij, who was for some time resident in Java, where he had noticed the frequent use of the drug in dysentery and malarial fever.

Dr. **Power** said he used the name Kô-Sam, because it seemed to be the current expression in all the preceding papers on the subject. He agreed with Mr. Holmes that it was better to use the botanical name.

The best thanks of the Conference were accorded to Dr. Power.

Mr. **Evelyn W. Pollard**, B.Sc. (Lond.), contributed a paper on

A False Cusparia.

During last year a quantity of bark was met with as a substitute for cusparia. This proves to be the same as that described by Barclay in his 'Materia Medica.' An examination of the histology and chemistry was made, with the result that the new bark is quite unlike cusparia in every respect. The most noteworthy character in the histology is the very regular and abundant layers of sclerenchyma, which give the laminated appearance to the bark. Raphides and oil glands are also entirely absent. An amorphous alkaloid was isolated, and gave colourless salts of which the sulphate, tartrate, and hydrochloride were very soluble salts; the iodide, nitrate, and oxalate less soluble. All the salts were readily soluble in hot water. The melting point of the gold salt was 105° C. (uncorr.). The alkaloid gave a blue-black colour with sulphuric and chromic acids. In addition, the bark contains an aromatic oil, fixed oil, and starch.

Mr. **Holmes** said that he was much indebted to Mr. Pollard for the investigation of this bark. He had received samples for identification some years ago, and was unable to trace either its botanical or its commercial source. The structure seen under a lens was unlike any other bark known to him, except perhaps that of pomegranate, which in taste and other characters differed much from it. Mr. Pollard was one of the most promising pupils in the School of Pharmacy at Bloomsbury Square a few years ago, and it was a matter of congratulation that the School turned out men who could do such excellent work. Mr. Pollard had now placed pharmacists in the position of being able to prevent its coming into use, and to recognise it if it should accidentally do so. It was remarkable that a bark which no student who had studied at a good school of pharmacy should ever for a moment confound with cusparia bark, should actually find its way into the wholesale and even into the retail trade, notwithstanding, the fact that he had pointed out when it first appeared in this country that it was not cusparia.

Mr. **Gerrard** (Birmingham) said this paper was a very valuable contribution to the knowledge of the active principles of drugs. There were one or two points that rather nonplussed him. In regard to the addition of lime to the powdered or crushed drug, did Mr. Pollard moisten it with water? Of course he stated that he added 10 per cent. of ammonia, but was that 10 per cent. by volume or 10 per cent. solution of ammonia added to the drug? He was not acquainted with any simple alkaloidal salt which in moderately-strong solution gave a precipitate with nitric acid. He should like to know if Mr. Pollard had any explanation to offer on that point.

Mr. **Pollard** thanked Mr. Holmes for his kindly remarks. In reply to Mr. Gerrard, he might say that he used 10 per cent. of ammonia gas in water, and moistened the lime, but he found that was unsatisfactory. As regards the addition of nitric acid to the solution of the sulphate, he only wrote down what he saw, but he believed there were alkaloids whose nitrates were insoluble.

Mr. J. **Rutherford Hill** (Edinburgh) asked if it was not possible to have an acid sulphate formed which would be insoluble.

Mr. W. **Watson Will** (London) pointed out that there were several insoluble nitrates, and mentioned bererbine and jervine.

Mr. **Holmes** said there was an alkaloid obtained from cuprea bark which gave an insoluble nitrate.

A vote of thanks was accorded to Mr. Pollard for his paper.

Mr. **Alfred Wright**, A.K.C., A.A., communicated a note on

Compound Tincture of Benzoin.

The author has endeavoured to ascertain the variation in extractive of the commercial tincture, and the cause of its frequent low percentage. From experiments with a number of tinctures he concludes that the adoption of a standard for extractive of 180 Gm. per litre is reasonable, and that where the amount of extractive is low this may be due to unpurified storax.

Mr. H. **Wippell Gadd** said he could confirm Mr. Wright's results. He had corresponded with Dr. Hill concerning the cases mentioned in the paper, and there was no doubt that in this case the public analyst was right, a fact which might be due to his having a pharmaceutical chemist as collaborator. There were three reasons why tr. benz. co. of commerce was sometimes unsatisfactory—first, unpurified storax was used; second, impure benzoin was used; third, insufficient agitation. It was most important that compound tincture of benzoin should contain at least 18 per cent. of extractive. Their Irish friends said it must not contain more than 19 per cent. of extractive. That seemed rather extraordinary, but he thought it might be accounted for by presuming that the Irish drug contractors to the Poor-law Unions found it cheaper to put in a lot of extractive, and to leave out some of the spirit. He was of opinion that the alcoholic strength should be taken in conjunction with the percentage of extractive, and would provisionally suggest 75 per cent. by volume as a standard. He reminded the meeting that Siam benzoin, although it yielded more extractive than the Sumatra variety, had been stated by the late Mr. John Barclay to yield less free aromatic acids.

Mr. **Hill** pointed out that about two years ago a paper was read before the Pharmaceutical Society at a meeting in Edinburgh by Mr. G. F. Merson, in which the same conclusion was arrived at as Mr. Wright had come to—viz., that where the amount of extractive was low it might be due to the use of unpurified storax. Only Mr. Merson was a little more emphatic, and stated that the benzoin had very little to do with the low extractive, but that where the percentage was low it was due to the unpurified storax.

Mr. **Bird** said unpurified storax contained a great amount of water. He would like to ask if Mr. Wright had ascertained the amount of alcohol in the tincture.

Mr. **Thomson** (Lochee) said he was disappointed with the figures given by Mr. Wright, as they showed that the excellent method suggested by Mr. Merson had not been adopted by the firms who supplied the tincture. He had personally adopted the method, and found it to be very satisfactory.

Mr. **Boorne** (Bristol) said his experience coincided with that of Mr. Wright in that the Siam benzoin gave a higher extractive, but whether that was an advantage he did not know.

Mr. **Holmes** said that anyone who had seen the Sumatra benzoin as it came into the London market would know that it was in the form of large cubical blocks, which contained purer benzoin in the centre than on the outer part, which contained a mixture of bark and other impurities. That was not the case with the Siam benzoin, and he therefore recommended it to be accepted as the official benzoin. In regard to the amount of free aromatic acids in any benzoin, it would, of course, vary considerably, and he should be very pleased to supply specimens to anyone who would undertake to investigate the matter. With regard to the liquid storax, it often contained a large quantity of water, which fact was, perhaps, an argument for the use of purified drugs instead of crude drugs.

Mr. **Merson** said reference had been made to his paper on the subject under discussion, and he might say that he examined the various grades of benzoin with the special object of finding out how much the extractive varied, and he was struck by the fact that it varied very little, there being little difference between the very drossy benzoin and the fine-grade Siam benzoin. The unstrained storax undoubtedly contained a large amount of water, and he thought the analysts who fixed certain standards for use in connection with the Sale of Food and Drugs Acts were to blame for leaving it to the extractive. When the tincture was made with the liquid storax, the specific gravity was more than it should be. He thought Mr. Wright's results bore out what other workers had found, and it was simply a hint that it was not always advisable to place too much reliance upon standards.

Mr. **Druce** said that, as a member of the Corporation of Oxford, he knew that they paid a number of men to examine the gas supplied to the city in order to ascertain whether the gas contained more atmospheric air than it ought, although, as he had sometimes pointed out, the gas might be all the better for a little atmospheric air passing through. And in the same way there were pharmaceutical preparations which were really valued for other properties than those recognised by the ordinary standard set up by the public analyst. He believed that in the days when pharmacists got the best drugs they possibly could, and prepared their medicines from them, it was a far better way than that obtaining to-day of lowering certain things to a certain percentage of extractive.

Dr. **Symes** said Mr. Holmes and others seemed to think that the Sumatra benzoin varied in quality, and that the Siam was more uniform, and that, therefore, the Siam should be used exclusively in the Pharmacopœia. He was glad that Mr. Holmes spoke only from a materia medica standpoint, and not from a pharmaceutical point of view. If they compared Mr. Wright's figures for first quality Sumatra and first quality Siam, the amount of extractive was the same, and to exclude Sumatra from the B.P. would be shutting out a very valuable product. He thought they ought not to exclude a drug simply because it varied, but that they should use their discretion as to the best drug.

Mr. W. F. Wells (Dublin) said he thought it would have been a great advantage if Mr. Wright had shown the value medicinally of the different preparations. He quite agreed that the extractive matter is of very little medicinal value. In Ireland, compound tincture of benzoin was more used for veterinary purposes than in any other way, but he thought it was a great mistake that there was no standard of quality. Referring to Mr. Gadd's remarks concerning the standard adopted by the analytical advisers to the Poor Law Unions in Ireland, Mr. Wells said the drugs supplied for Unions were not a fair sample of the drugs supplied by Irish pharmacists.

Mr. Holmes said, with reference to the remarks which had been made by Dr. Symes, that statistics could be made to prove anything, and if Dr. Symes compared the figures given by Mr. Wright in connection with the second quality of benzoin, he would find that there was a considerable difference in both specific gravity and extractive.

Mr. Watson Will said a good deal of the unpurified storax was used for making tincture. His experience was that the ratio of water in the crude storax ranged from 18 to 22 per cent.

Mr. Gadd said the explanation he had given as to the reason for the Irish authorities fixing a maximum of extractive was that given by Mr. J. C. Umney at Bloomsbury Square in November last. He had no intention of referring to the drugs supplied by the pharmacists in Ireland.

Mr. Boorne said with regard to the use of Sumatra and Siam benzoin, he thought the Sumatra was preferred on account of its possessing an aroma that the Siam variety did not possess. He knew of a case where some tincture made with Siam benzoin was returned by a retailer because he said it was not the genuine article. He said he wanted the tinct. benz. co. of the B.P., and he was quite certain that the article in question was not what he wanted. On analysis, the tincture was found to be quite up to the standard, but it was made with Siam instead of Sumatra benzoin.

Mr. Wright, replying generally to the various speakers, said he thought the fault lay in not properly making the tincture. It ought to be frequently agitated during the process of making, otherwise some of the drug would stick to the bottom of the vessel and would not dissolve. With regard to the medicinal value of Siam and Sumatra benzoins, he could not make any observations, as he had not tried to ascertain that; he only knew by experience that people rejected the tincture made with the Siam benzoin. The only explanation he could give for that fact was that he found the Sumatra benzoin had a distinctly more aromatic flavour than the Siam, but whether it was more efficacious he could not say. He found on preparing the tinctures that there was a considerable amount of volatile matter driven off. In reply to Mr. Bird as to whether he had estimated the alcoholic strength of the tincture, he wished to say that he had not tried to determine that. He was very pleased to hear the remarks of Mr. Boorne and Mr. Merson.

Mr. Boorne said he thought the explanation why tincture made with Sumatra benzoin was preferred was, perhaps, that the Siam benzoin has a distinct vanilla flavour.

The thanks of the Conference were then accorded to Mr. Wright for his paper.

Mr. Leo Atkinson read a paper on

The Future of Pharmacy.

Perhaps in the near future, when the commercialisation of pharmacy has been entirely accomplished, and the individual pharmacist has become practically extinct, there may be a return to the condition of things which led up to the Pharmacy Act of 1868, *i.e.*, a public danger necessitating prompt legislative reform. As an initial requirement to meet such a contingency, Mr. Atkinson suggests the formation of a Guild of Pharmacy, to make disciplinary regulations, to maintain and control internal integrity.

Mr. E. Saville Peck (Cambridge) said he considered the thanks of the Conference were due to Mr. Atkinson for his very able paper. It appeared to be full of truths, and was bristling with suggestions, the value of which was incalculable. He approved of the idea of a Guild of Pharmacy, but did not think the Conference was the proper body to form the Guild.

Mr. Harry Kemp (Manchester) pointed out that the associations mentioned by Mr. Atkinson had not succeeded in protecting their members from the unqualified practitioners any more than pharmacists were protected. If a Guild of Pharmacy was established he warned pharmacists against expecting to get much out of it. He thought the subject would have been more suitable for discussion by the Federation, rather than the Conference.

Mr. Druce thought there was danger in multiplying the number of societies. He would rather use the Society already existing by making it do its duty. But individual chemists must also do their duty. It was appalling how little unanimity could be obtained on questions of vital importance, as, for instance, in the matter of the recent decision of the Board of Inland Revenue, to recognise the professional status of chemists. That recognition seemed in danger of being lost, because a few chemists were foolish enough to care more for a few paltry side lines. Then, again, in regard to pharmaceutical legislation, chemists must not try to get too much—they ought to be content if the present Pharmacy Bill secured for them the protection of titles.

Mr. Hill said the Pharmaceutical Society had always seemed to him to be the best possible Guild that could be conceived. The Society possessed all the advantages of the old Guilds without their defects.

Mr. S. R. Atkins said he spoke that morning with a new sense of responsibility, and he was sure that whatever he might say, he should find somebody did not agree with him. Since becoming President of the Pharmaceutical Society he had received shoals of letters—they had even followed him to Bristol—which told him that pharmacy was passing through difficult and troublesome times, and the Council was very roughly handled by some of his correspondents. He wished to thank Mr. Atkinson for his masterly paper. Mr. Atkinson was a strong man, having strong convictions, and he had strongly expressed them—he was one of the many men who were in pharmacy and were also accurate scientists. He (Mr. Atkins) could not help wondering what would have happened if the paper they had listened to that morning had been presented to the Conference some years ago. He recalled the meeting at Exeter, when the late Daniel Hanbury presided, and a paper was submitted on "Pharmaceutical Ethics" by his friend, Mr. T. B. Groves. There was then a very solemn conclave as to whether such a dangerous paper ought to be read and discussed by the British Pharmaceutical Conference. What would have happened if Mr. Atkinson's paper had been submitted at that time he left to his friends to say. Mr. Atkinson had very justly and accurately described the disease, and it now remained to find the remedy. Mr. Atkinson had made only one really practical suggestion—viz., the formation of a Guild of Pharmacy on the lines of the ancient Guilds which maintained a sense and code of honour and a code of ethical instruction. But he did not think Mr. Atkinson would be wise to press for that. He thought it would be better to press upon the Council of the Pharmaceutical Society what had been said in the paper, and he could assure Mr. Atkinson that it would be most anxiously discussed and considered. He agreed with Mr. Kemp that other professions suffered quite as much as pharmacists from unqualified practice, and even in such trades as grocery he was informed by a friend that it was difficult to make 10 per cent. He was strongly convinced that the future of pharmacy lay in the evolution of the thoughtful, cultured, scientific side.

Mr. G. T. W. Newsholme said Mr. Atkinson had given them some uncomfortable and unpalatable truths to consider. What registered chemists most needed at the present time was a strict code of honour, which would, if adhered to, do away with the curse of the bogus companies. Mr. Kemp had very forcibly and very properly reminded the meeting that the dental and other professions which did possess organisations for their protection, as well as pharmacists, had not altogether succeeded simply because certain members of those professions did not observe a strict code of honour towards their professional brethren.

Mr. G. D. Beggs, President of the Pharmaceutical Society of Ireland, said one of the great causes of the present state of things in pharmacy was that chemists did not support the parent body as they ought. They in Ireland had not quite the same state of affairs to contend with as chemists in England had, but they found that the young men, after passing the qualifying examination, lost all interest in the Society, and failed to support it. What chemists seemed to lack was backbone. He had been greatly interested in watching the progress of the Pharmacy Bill now before Parliament, but unless the Bill was properly supported he was afraid it would have a very rough time. In regard to the suggested Guild, he thought the Pharmaceutical Society was the most fitting Guild, if only the members would loyally support it.

Mr. A. Wright (Yeovil) asked Mr. Atkinson if he had any proof that the Pharmaceutical Society had educated students at the School, and given them all its educational advantages, and then passed them on to the drug companies. He did not think that was the case. He knew that the most promising students entered the employment of the wholesale houses and manufacturers, but he did not believe they went over to the drug companies. Neither did he think that Mr. Atkinson was right when he said that the business of a chemist and druggist had passed away to the extent that pharmacy had become a sort of "side show," and the main trade consisted of other things. He thought that was a libel on chemists generally.

Dr. Symes said it was quite true that a good many of the "racehorses" of pharmacy did not continue in the retail trade because they found their facilities were such that they could get into better employment, and it was quite proper that the "Square" should continue to educate men for that purpose. Pharmacy had always been a starting-point for a certain number of men to enter other professions. Many had passed on to the medical profession, and those present knew very well that the best prescriptions they had to deal with came from medical men who had started as pharmacists. When Mr. Atkinson said that the men who gave their services to the drug companies were the weaklings of pharmacy, and afterwards suggested that the Society educated the best men for the service of the drug companies, he could not reconcile the two statements. With reference to the remarks of Mr. Atkins that chemists should leave matters in the hands of the Council, he would rather that chemists joined the Society and became active members, and when the Council was considered to be not sufficiently active, to push it on.

Sir Thomas Robinson (Dublin), who spoke at considerable length and with great vigour, said he thought that the members of the Pharmaceutical Council had allowed themselves to drift into a very pessimistic state of mind. He felt that chemists had the future in their own hands. The present state of affairs reminded him of the condition of things which existed when the old apothecaries were viewing with such great concern the proceedings of those who at that time sold Cockle's Pills and similar preparations. Now he found that the Pharmaceutical Society of Ireland was looking with the same horror and disgust on companies as the apothecaries looked upon druggists a few years ago. He could not help feeling that to sneer at the men who gave their services to the companies was not the best way to conciliate them and bring them back to pharmacy. Referring to the business of a chemist and druggist, he said, in his opinion, it was a dangerous thing to lose sight of the business side of pharmacy, just as it was to lose sight of the professional side. Mention had been made of the Pharmacy Bill, and the difficulty of getting legislation. As one who had some experience of Parliamentary practice, he said emphatically that it was not a difficult thing to get legislation, but it was difficult to get an unreasonable Bill through Parliament. He believed that the present deterioration in pharmacy was due to the introduction into medicine of so many nostrums. So far as the limited company with which he was connected was concerned, he might say that no one could hold a share or be a director of the company unless he was a registered chemist.

Mr. Atkinson briefly replied, and a vote of thanks was accorded to him for his paper.

Mr. J. W. White, F.L.S., Chairman of the Local Committee of the Conference, read a paper on

Balearic Botany.

A large number of medicinal and other plants collected or seen during a visit to the Balearic Isles in the spring are described. The kindliness shown by the inhabitants is spoken of in terms of the highest appreciation.

Mr. E. M. Holmes said that it was much to be regretted that time did not allow the reading of the whole of Mr. J. W. White's valuable paper, which had evidently been prepared with great care, so as to render a subject usually considered to be dry, as interesting as possible. Mr. White had a wide reputation on the Continent as a careful and accurate botanist, and his exquisitely prepared herbarium specimens were eagerly sought after for University herbaria. His important contribution to our knowledge of the botany of these little-visited islands would be read by botanists throughout the kingdom with great interest, and it would, Mr. Holmes felt sure, be greatly appreciated by a much larger audience even than that of the British Pharmaceutical Conference.

The session then adjourned for luncheon, and on resuming, Mr. F. H. Alcock, F.I.C., contributed a brief note on

Crystals in Extracts.

Crystals of potassium chloride, potassium nitrate, calcium oxalate, potassium dihydrogen phosphate, and calcium tetrahydrogen phosphate, have all been found in various extracts. It is therefore not safe to conclude that all such extract crystals are the same substance.

The President said this was a most interesting paper. He had always thought that crystals would be found in extract of meat, and that they would be found to be potassium acid phosphate.

Mr. Ransom said his firm had frequently noticed crystals in extract of henbane, which it was thought might be potassium nitrate, but on examination they were found to be calcium chloride.

Mr. Wright (Yeovil) said he had examined some crystals found in extract of aconite, and they proved to be crystals of potassium chloride.

Mr. Betty asked how the crystals were formed in the extracts.

Mr. Alcock said the last question was one that Mr. Ransom could probably answer better than he could.

A vote of thanks was accorded to Mr. Alcock.

Mr. F. Ransom, F.C.S., senior Hon. Secretary of the Conference, read a paper by himself and Mr. H. J. Henderson, entitled a

Note on Hyoscyamus Muticus.

0·9 per cent. of hyoscyamine was found in the dried leaf, and a smaller percentage in the stalk and seed capsule. A favourable report has been received on the therapeutic value of a tincture prepared from the plant. The authors suggest that a standardised tincture, subject to confirmation of the therapeutic value of *Hyoscyamus muticus*, might be included in the next edition of the British Pharmacopœia. The plant grows wild all over Egypt.

Mr. Gerrard said when the drug under discussion was first introduced, he was surprised at the large amount of hyoscyamine Dr. Gadamer obtained from it, and had a suspicion the figures were too high, and the present authors' results confirm his suspicion. A specimen of the plant obtained from Kew Gardens and examined by himself gave about 0·6 per cent. of the alkaloid. One would naturally expect that, as this plant gave such an abundant yield of active principle, that its price would be much reduced, but such had not been the case. On the therapeutic side of the paper, it might be remarked that therapeutists considered belladonna capable of giving all the effects of henbane. Mr. Gerrard said the sample of tincture shown was an elegant preparation of standard power, and he would have no hesitation, if henbane is to be retained in the Pharmacopœia, to recommend the *muticus* variety in place of the inelegant and nasty official variety.

Mr. Betty said this tincture sometimes caused a dryness in the throat.

The President said Mr. Ransom had made this subject peculiarly his own.

Mr. Ransom said, in reply to Mr. Gerrard, that in regard to the estimation of the drug, he thought the method proposed by Mr. Dunstan was very likely to be correct. He could not account for the dryness of the throat referred to by Mr. Betty. The medical men to whom samples had been submitted had not experienced that difficulty.

The thanks of the Conference were accorded to Mr. Ransom.

The next paper, by Mr. E. F. Harrison, B.Sc., and Mr. D. Gair, dealt with the

Quantitative Separation of Strychnine from Quinine.

The methods previously in use for determining the strychnine in such preparations as Easton's Syrup not having proved satisfactory, the authors have devised a method in which quinine in the state of acid sulphate is treated with sodium potassium tartrate, and separated as tartrate. The filtrate is treated with ammonia and chloroform, and the strychnine determined in the usual way.

The President said this was the kind of paper the Conference desired to have, giving a certainty of results in pharmaceutical preparations.

Mr. F. C. J. Bird said that when the list of Conference papers appeared he had been very pleased to notice that Messrs. Harrison and Gair were to attempt the solution of this analytical problem. Easton's Syrup was now being very generally examined throughout the country, but the divergence of the analytical results made it very evident that a reliable process was not being used. He had worked himself some time ago on the separation of those alkaloids by solvents such as petroleum ether, but the experiments had been so discouraging that they were not continued. There was no difficulty whatever in ensuring the exact proportion of strychnine in Easton's Syrup; you simply had to weigh up the alkaloid and dissolve it. Samples which he had every reason to believe were absolutely correct in strength had been returned on analysis as containing 20 per cent. too much strychnine down to 75 per cent. too little. The question which naturally arose was, what method of analysis was employed? A process had been recommended about a year ago which he believed was very extensively used. It had not been alluded to in Messrs. Harrison and Gair's paper, but it consisted in determining the amount of total alkaloid in the syrup, and also the amount of sulphate present. The equivalent quantity of alkaloid corresponding to the sulphate was then calculated, and the difference taken as strychnine. This was stated to be quite satisfactory, but, to his mind, it was a faulty method, and would not compare with the process given by the authors. On looking at the figures given in the paper, the greatest error appeared to amount to but 0·003 or 0·0036 Gm., which was quite small. He heartily congratulated the authors on having successfully worked out a satisfactory method of effecting a difficult analytical separation.

Mr. Tyrer endorsed Mr. Bird's remarks. He had not gone quite so far as Mr. Bird in the determination of strychnine in the complicated extracts; but he was correct in saying that many of the methods employed were unsatisfactory. It had never occurred to him that the advantage of the solubility of tartrates was the way out of the difficulty, as had been shown by the authors of the paper. He should like to emphasise the immense value of having reprints of the papers put before members of the Conference, so that those who were interested in any particular subject might see beforehand whether there was anything which they could contribute to or confirm. He thought the new move was worthy of commendation. Before sitting down he might refer to the growing value of saturated solutions of various salts.

Mr. Harrison said, in reply, that the method referred to by Mr. Bird of weighing the total alkaloid before and after sulphating was one in which error of working was much magnified. He wished to emphasise the necessity for adding alcohol to the residue, as otherwise the strychnine retained from 3 to 5 per cent. of chloroform, even after an hour's drying in the water oven.

Mr. E. F. Harrison, B.Sc., also read a short note on the

Volumetric Use of Fehling's Solution.

To indicate the end reaction, use has been made of the action of cupric salts in liberating iodine from iodides. The indicator is prepared by boiling starch with a few C.c. of water, adding potassium iodide and diluting. As long as unreduced copper is present, a red or blue colour is produced. The production of no colour marks the end of the reaction.

Mr. Tyrer said it was interesting to find that the processes adopted by independent workers for the purposes of their private or business work should so often coincide, and when he read the paper by Mr. Harrison he found that the method there referred to was in all essential respects like one that had been used for the last three or four years in his laboratories without any communication with Mr. Harrison. The process was worthy of all that had been claimed for it.

Mr. Gerrard said he meant to give this test a trial when he got back to his laboratory, and he hoped it would turn out as well as the author said it would, because, if so, if would be better than the test he (Mr. Gerrard) made. But both processes had something of a defect about them. It was a defect of his own process that it was necessary to prepare the potassium cyanide solution each time a test was made, and it would be an advantage if the solution could be kept ready for use. If Mr. Harrison's method was subject to the same defect he should be sorry. He should like to ask if Mr. Harrison had much experience of the urines which gave a very fine cloudy precipitate, because it was rather difficult to see when the end reaction takes place.

Mr. **Alcock** was glad that Mr. Harrison emphasised the fact that the weak solutions of starch were more effective in detecting iodine than the strong solutions usually used

Mr. **Harrison** said, in reply, that he thought an objection to Mr. Gerrard's cyanide method was the liability to atmospheric oxidation when the copper was in solution. The difficulty in the case of non-coagulation of the cuprous oxide did not occur with the proposed indicator, suspended copper oxide not at all interfering with the production of the colour.

The thanks of the Conference were accorded to Mr. Harrison.

Mr. **Harold E. Matthews**, Hon. Treasurer of the Local Committee of the Conference, read a paper entitled,

A Comparison of Dieterich's Process for the Determination of Morphine in Opium with that of the British Pharmacopœia.

Dieterich's process consists essentially in the removal of most of the narcotine by quick precipitation with ammonia in aqueous solution, and subsequent precipitation of the morphine by excess of ammonia in presence of ethyl acetate. Though not so exact as the B.P. process, Dieterich's method is more expeditious, and involves less waste of opium.

There was no discussion on this paper, but the **President** thanked Mr. Matthews for bringing it before the Conference.

Mr. **Wm. W. S. Nicholls**, B.Sc., read a paper on

A Proposed New Method for Standardising Ferri Arsenas, B.P.

The object of the investigation was to determine the arsenic in the salt, and the method adopted was an application of one originated in 1867. A weighed quantity of the salt is placed in a distilling flask, a solution of ferric chloride in hydrochloric acid is added, and the arsenic trichloride is distilled over. The distillate, after three distillations, is neutralised with a strong solution of caustic soda, an excess of sodium bicarbonate is added, and titration with standard iodine solution is proceeded with. The results show that there are on the market two principal kinds of "ferri arsenas," the one containing approximately 30 per cent., the other 27 per cent., of arsenic. A large proportion of the samples fell below the B.P. standard, and the author agrees that this should be abolished in favour of the arsenic content.

Mr. **Nicholls**, while communicating this paper, referred to some diagrams on the walls which were used by Professor Young the previous day, and, pointing to a diagram of a condenser, advised those present not to use a condenser such as that shown by Professor Young if they wished to get good results.

Mr. **J. T. Davies** (Bristol) protested very strongly against the remarks made by Mr. Nicholls in regard to Professor Young's paper the previous day. Those who heard the paper would agree that it was one of the best papers that had been placed before the Conference, and he considered it was very much out of place for Mr. Nicholls to go out of his way to pass remarks about that paper. If he had wished to criticise Professor Young, he should have been present when he gave the demonstration, and if he had been present Mr. Nicholls would have known that the diagram to which he had taken exception was not mentioned by Professor Young. As one of Professor Young's old students, he felt that he could not allow Mr. Nicholls' remarks to pass without comment.

Mr. **Tyrer** said he was pleased to see that the spirit that was shown by students in the days of Hoffmann was still alive. He had no doubt that Mr. Nicholls had been carried away with enthusiasm for his subject, otherwise he would not have made the remarks to which exception had been taken. Mr. Nicholls had laid great stress on accuracy in the determination of such substances as arsenic, and the very simple and ordinary condenser which he had referred to in connection with his own paper, and of which he had given such an ideal *(sic)* sketch on the board, was, at any rate, one of those which were in very common use indeed. In a busy laboratory they could not afford to have a long condenser, and the condenser to which Mr. Nicholls referred in his haste was not one of those to which Dr. Young made the slightest reference. He agreed with some of Mr. Nicholls' statements, to the effect that manufacturers should not be careless enough to have such wide differences as he had indicated. As a manufacturer, he might say that since the arsenic scare they had not got rid of the old tests. In regard to Marsh's test, what they had done was to regulate and synchronise it so as to make it capable of determining with some degree of certainty whether arsenic was present or not. It used to be thought that if a substance contained no more than 1 part of arsenic in 100,000 no harm could be done; now, if they got articles containing 1 part in 1,000,000 they were aghast. It was, however, perfectly true that there were at present on the market ferric chloride and other drugs sold at commercial prices which did not contain one part of arsenic in a million parts.

Mr. **Alcock** also made some remarks concerning Mr. Nicholls' paper, but owing to the bad acoustic properties of the hall it was almost impossible to report the technical points of his remarks correctly. He was surprised that the author had not been able to obtain hydrochloric acid free from arsenic.

Mr. **Harrison** pointed out that Mr. Nicholls had not given any control figures, and until they had those control figures he was afraid they could not take his figures as proved.

Mr. **Nicholls**, in replying, wished to apologise, and withdrew the remarks he made concerning the diagram shown by Professor Young. As Mr. Tyrer had said, he was carried away with the enthusiasm of his subject. In regard to hydrochloric acid, he had examined thirteen samples supposed to be free, but not one of them was arsenic-free. Mr. Harrison had referred to control figures. Personally, he did not attach much importance to them, because it was possible to find anything if it were known to be there. They did make some control tests, however, and the arsenic came out quantitatively.

Mr. **Harrison**: What method did Mr. Nicholls use in determining arsenic?

Mr. **Nicholls**: The tests were done electrolytically.

The author was thanked for his paper.

Mr. **H. Wippell Gadd**, F.C.S., suggested in a short paper that

A Concurrent Curriculum

should be taken by pharmaceutical apprentices. Apprenticeship should not be considered a full-time occupation, and a course of study of ten hours a week, extending over the three years of apprenticeship, is suggested. "Concentrated education is as delusive as concentrated food."

Mr. **Newsholme** pointed out that a similar curriculum to that mentioned by Mr. Gadd had already been laid down at Nottingham and Sheffield.

Mr. **Gadd** said the cuuriculums in force at Nottingham and Sheffield were recognised in the paper, but owing to the late hour he had omitted reference to them.

Mr. Gadd was thanked by the President for his paper.

The **President** then announced that the following five papers, abstracts of which are given, would be taken as read, and he hoped that they would be read and afterwards discussed in the pharmaceutical press.

Mr. R. Wright, F.C.S., in one of those papers, made suggestions for the improvement of the

Chloroforms of Belladonna and Aconite

of the Conference Formulary. After numerous experiments, he states that chloroform alone is not a good solvent for the alkaloids of belladonna in their natural state of combination in the drug. It is better adapted for the extraction of the aconite alkaloids. The best result, based on the proportion of alkaloids present, is obtained by the addition of a small proportion of ammoniated alcohol to the chloroform used for extraction. The author suggests an improved formula founded on this hypothesis.

Mr. Ernest J. Parry, B.Sc., communicated a paper on the

Refractive Index of Essential Oils.

Though this has rightly been rejected as comparatively valueless in the examination of many oils, notably those of the citrus family, the refractive index after fractionation of other oils, including otto of rose, peppermint oil, etc., is a useful factor in the determination of purity.

Mr. E. M. Holmes, F.L.S., contributed a paper on

Agricultural and Horticultural Poisons and Fungicides.

One of the chief objects of the paper is to direct the attention of chemists and druggists to the substances used as weed-killers and insecticides in agriculture and horticulture. Pharmacists should aid the Government in its endeavours to reduce the death-rate resulting from the use of poisons, not only by insisting on the restriction in the sale of poisons to persons educated in their properties, but also by making researches which will extend the list of non-poisonous substances to replace the poisonous compounds now used.

In the next paper Messrs. J. O. Braithwaite and H. E. Stevenson dealt with

The Non-Existence of Mydriatic Alkaloid in Lactuca Virosa

Some years ago Dymond announced, with much circumstance, the isolation of hyoscyamine from this plant. After maceration of the fresh flowering herb with hydrochloric acid, shaking out with ether in the usual manner, and again shaking out with an acid aqueous solution, no trace of mydriatic action was observable by the authors, in spite of the delicacy of the physiological test. They deduce that the alleged presence of the alkaloid in wild *Lactuca virosa* is mythical.

Dr. J. C. McWalter, M.A., M.D., D.P.H., communicated a paper dealing with the

Pharmacology of the Supra-Renal Glands.

The method adopted to prepare a galenical solution is to macerate the finely-comminuted fresh glands of a sheep or of a heifer with an acidulated solution containing 20 per cent. of glycerin and 20 per cent. of alcohol.

Thanks to the authors were accorded.

Presentation from the Bell and Hills Fund.

The President then presented the following books from the Bell and Hills Fund to the Bristol Pharmaceutical Association:—White and Humphrey's 'Pharmacopedia,' Mendeleeff's 'Chemistry,' Greenish's 'Mat. Medica,' Tuson's 'Vet. Pharmacopœia,' Quain's 'Dictionary of Medicine,' Squire's 'London Hospitals' Pharmacopœia,' Bentham's 'Organic Chemistry,' Green's 'Botany,' Green's 'Introduction to Vegetable Physiology.'

Mr. J. W. White, President of the Bristol Pharmaceutical Association, thanked the Conference for the books, and said the books received on the occasion of the previous visit of the Conference to Bristol had been well thumbed, and he had no doubt that these books would also be made good use of.

Election of the Formulary Committee.

On the motion of Mr. J. Rutherford Hill, seconded by Mr. Gerrard, the following were elected on the Formulary Committee:—Messrs. A. C. Abraham, W. A. H. Naylor, F. C. J. Bird, Peter Boa, Dr. C. Symes, F. Ransom, W. F. Wells, J. C. Umney, H. Wilson, and R. Wright.

It was mentioned that Mr. Naylor had resigned his secretarial duties in connection with the Formulary Committee, and that Mr. Bird would succeed him.

Place of Meeting for 1904.

Mr. Newsholme (Sheffield), on behalf of the pharmacists of Sheffield, cordially invited the Conference to hold its meetings for 1904 at Sheffield.

Councillor Fox and Mr. George Squire supported the invitation, and, on the motion of Mr. G. D. Beggs (Dublin), seconded by Mr. Edward Evans, jun. (Liverpool), the invitation was accepted.

Resignation of Mr. Ransom.

Mr. Naylor said a resolution had been placed into his hands that he had very much pleasure in moving. He regretted that the time had passed so rapidly that it would scarcely be possible to do justice to it; but this was one of those occasions when one realised what a very poor vehicle language was for the expressions of one's deepest feelings, and especially when one was required and desired to express the sentiment of gratitude. He was sure they all learned with the deepest regret that the senior Hon. General Secretary of the Conference had felt it incumbent upon him to tender his resignation. He had held that position for the past thirteen years. He had not only held that position, but he had filled it with the greatest possible advantage of the Conference. He felt somewhat embarrassed speaking in the presence of his old colleague, but he wished to say one or two words as to the character of the man of whom he was speaking and of his work. They all knew how he had laboured for the good of the Conference during the past thirteen years; his labour had been unstinted. Years ago he sought to know the need of the Conference, and then he resolutely set himself and applied himself most assiduously to meet that need, and he (Mr. Naylor) was bound to say that during that period the Executive Committee had found in Mr. Ransom a man wise in council, a man of great industry, indefatigable zeal, and a man of one consuming desire, viz., to further the interests of the British Pharmaceutical Conference, and in that work he had admirably succeeded. There was only one regret he (Mr. Naylor) felt, and that was that the President of the Conference had not such patronage that he could bestow upon Mr. Ransom some distinction—a distinguished service order. But that he believed the members of the Conference were prepared to do, and would do that day that which they could do, viz., to elevate him to the position of one of the Vice-Presidents of the Conference. He hoped he might also be allowed to refer to Mrs. Ransom. All public men knew that their wives were called upon very often to exercise a very great deal of self-denial, and he knew that Mrs. Ransom had admirably seconded Mr. Ransom in his work in connection with the Conference, and the members of the Conference would look forward for years for their presence and help. The resolution he had to move was:—

> That the British Pharmaceutical Conference regrets that Mr. Ransom has felt it obligatory to tender his resignation as senior Honorary Secretary of the Conference, and the members offer their sincere and heartiest thanks for his long and valuable services.

Dr. Symes, in an eulogistic speech, seconded the motion, which was supported by the President, and carried with great enthusiasm.

Mr. Ransom replied, acknowledging the help he had received from his colleagues.

Election of Officers.

On the motion of Mr. Atkins, seconded by Mr. Druce, the following officers were elected, the President expressing his satisfaction that Mr. Ransom would be succeeded as Secretary by such a very excellent pharmacist as Mr. Edmund White :—

President, T. H. W. Idris, L.C.C., J.P., F.C.S., London; Vice-Presidents, G. T. W. Newsholme, F.C.S., Sheffield; G. D. Beggs, M.P.S.I., Dalkey, Co. Dublin; D. B. Dott, Edinburgh; F. Ransom, Hitchin; W. A. H. Naylor, F.I.C., F.C.S., London; Honorary Treasurer, J. C. Umney, F.C.S., London; Honorary General Secretaries, E. Saville Peck, M.A., Cambridge; Edmund White, B.Sc., Lond.; Honorary Local Secretary, H. Antcliffe, Sheffield; Assistant Secretary, John Hearn. Other Members of the Executive Committee:—F. C. J. Bird, London; H. E. Boorne, Bristol; H. W. Gadd, Exeter; W. Garsed, London; Professor Greenish, F.I.C., F.L.S., London; H. E. Matthews, Bristol: C. T. Tyrer, London; R. Wright, Buxton; G. Squire, Sheffield. Auditors, J. W. Bowen, London, and W. P. Robinson, London. Editor of the 'Year-Book,' J. O. Braithwaite.

Votes of Thanks.

On the motion of Mr. Atkins, seconded by Mr. Charles Kerr, the following resolution was carried unanimously :—

> That the warmest thanks of the visiting members of the Conference be given to the Local Committee, to Mr. J. W. White (Chairman), Mr. H. E. Boorne (Hon. Secretary), Mr. H. E. Matthews (Treasurer), and Mr. G. T. Turner (Vice-President).

The gentlemen named each responded, and all expressed the satisfaction it had given them to work for the success of the Conference, and to know that their efforts had not been altogether in vain.

Dr. Power moved, and it was seconded by Sir T. Robinson, and carried, that the best thanks of the members of the Conference be accorded to Professor Lloyd Morgan for the very kind welcome he had given to the Conference.

Mr. Druce then moved, and Mr. Tyrer seconded, a vote of thanks to the President, Mr. Idris, for so ably conducting the business of the Conference.

This was carried by acclamation.

Mr. Idris replied, and moved that a vote of thanks be accorded to the Hon. General Secretaries for their services.

Mr. Maben seconded, and it was carried, Mr. E. Saville Peck replying.

The proceedings then terminated, and the members subsequently attended a garden party at the Zoological Gardens, Clifton, where high tea was served, and selections were rendered by the Zoo Band. In the evening a concert was given by the Society of Bristol Gleemen.

On the following day, Thursday, an excursion was made to the Forest of Dean.

Iodipalme.—This is a combination of iodine with a fixed oil containing either 10, 20, or 30 per cent. of iodine. The weakest iodopalme is the same colour as ordinary oil; that containing 20 per cent. of iodine is a little darker; 30 per cent. iodipalme is a brown liquid. It is quite free from any toxic action; 200 to 300 grains may be injected without causing any discomfort. When given by the mouth the dose is 1½ to 5 grains per diem; in that case it should be prescribed in gluten capsules, or mixed with cod liver oil, or suspended in an emulsion. It may be injected either directly into the rectum, or hypodermically into the gluteal region. In this way 1 C.c. of 10 per cent. iodipalme may be administered to young children, 2 C.c. to older children, and 5 to 10 C.c. to adults. It is indicated in scrofula, syphilis, asthma, and arterio-sclerosis. —*Répertoire* [3], **15**, 164.

PERSONAL VIEWS ON CURRENT TOPICS.

Prescribers and Dispensers.

BY A. W. BROMLEY.

Recognition for the Pharmacist.

It is curious to note how slowly a pleasing idea is discarded. A hundred years ago the medical man was perfectly justified in regarding himself as an unquestionable authority on materia medica and pharmacy. The medicine compounder, in nearly all cases, knew less of these subjects than the prescriber, though he might be more skilled in practical pharmacy. In 1841 a Society was formed, and in 1868 an Act of Parliament was passed, which together were destined to create an army of medicine compounders with a more complete knowledge of pharmacy than the physician is justified in acquiring. We may fairly claim that that object has been fully achieved, but how inadequately has the fact been recognised by the profession chiefly benefited. Indeed, I believe the average medical man is behind the intelligent layman in realising the existence of the trained and educated pharmacist. The general idea seems to be, "I can dispense; so can my coachman, so can the chemist. The last is a little more intelligent than the coachman and a little neater than either of us." There are many who do not even realise the existence of the art of pharmacy. "How did you make this ointment? We (himself and a medical-student dispenser) can't get it like yours," and the questioner wrote down the directions for mixing boric acid, zinc oxide, and vaseline as though they were a valuable "wrinkle" instead of an ordinary pharmaceutical process. To him dispensing was not a systematic and scientific art, but a collection of tricks for performing particular operations. Patients regard the doctor as an ultimate authority as to the appearance of medicines, and it is perhaps too much to expect him to decline the compliment. There is not much harm in this, though we occasionally have the most obvious facts contradicted because the doctor said otherwise. A patient once presented a prescription with the remark, "Mr. So-and-So made this up clear like water, and the doctor said it ought to be milky, with a white deposit, and he advised me to try another chemist." The scrip was for 2 drachms of salicin in 8 oz. of water.

His Province.

The profession are curiously ill informed as to the pharmacist's province, his duties, and the legal restrictions affecting his work. I have known a busy, middle-aged London practitioner astonished on learning that the chemist opposite him was in the habit of making suppositories and spreading plasters. He thought such things were only made by very clever people in the city, in laboratories fully equipped with all the latest and most improved machinery (as described in the said clever people's beautifully-illustrated advertisements). Then we have the gentleman who regards poisons with a contempt which we dare not assume. One such instructed working-class patients to send a child to the chemist's with a teacup for three-pennyworth of glycerin of belladonna. When remonstrated with he bought a stock and did the retailing himself. And another who prescribes, say, Fellows' Syrup in such a way as to make it legally necessary to place a stigma of quackery over the cork. Few prescribers seem to understand how and why dispensers check their prescriptions, and still fewer are aware of the often involved reasoning which is brought to bear upon ambiguous prescriptions. A young medical man once showed me a prescription for 30-grain doses of pot. iodid., which he had posted to a patient living in a small town. The latter had returned it as he could not get it dispensed, whereupon the doctor wrote a long letter to be shown to the chemist, explaining the case, accepting all responsibility for the large dose, and hinting that a chemist was scarcely justified in setting his opinion against that of a fully-qualified medical practitioner. He wished to know if the explanation would be sufficient for an average chemist, and was very interested to learn that a dispenser checks the quantities in a prescription, not to contrast his opinion with the writer's, but to be sure that the latter has written what he intended. Medical students might well be given at least a hazy knowledge of what true pharmacy is, and told that "dispensing" as they know it is not the dispensing of the shops. That they are not is proved by the fact that we occasionally have young students apply for part-time work, assuring us that they can dispense.

Proprietary Rights and Prescriptions.

Very surprised, and often very indignant, is the physician who discovers that trade-mark law and proprietary rights can interfere with, and even prevent, the intelligent dispensing of his prescriptions. The law often places a dispenser awkwardly between his duty to the patient and his duty to himself. A. B. and C. D. are different makers of the same article. Each covertly declares the other's preparation to be a spurious imitation, but unbiassed persons recognise no difference between the two. A provincial pharmacist receives a prescription for A. B.'s preparation, which he has not and cannot obtain quickly, nor can he communicate with the prescriber. Should he send C. D.'s, and risk prosecution for substitution? The best and most generous course is to take the risk, but the wisest, from a selfish point of view, is to obey the law and let the patient wait, suffer, die, if he will, while the "genuine" article is obtained. Thanks to persistent and ingenious advertising, medical men frequently use proprietary descriptions without being aware of it; indeed, we often have one firm's initials attached to another's trade mark (*e.g.*, Maltine, B. and W.; Tabloid, Cascara, A. and H.). I have also seen the following prescribed:—Taka diastase tabloids, antikamnia tabloids, Fellow's Syrup B.P.C., Eno's Fruit Salt (not the genuine), and Maltine (your own make). Doctors, again, are chiefly responsible for permanganate of potash being asked for as "Condy's Crystals." A gentleman who had prescribed "Nepenthe" for years was astonished to learn that there is a proprietary preparation bearing that name. He thought the word was a synonym for tinct. opii. When a prescripton bears a particular firm's initials, the conscientious pharmacist can do nothing under ordinary circumstances but dispense their preparation. Proprietors are fond of reminding us of this, but the medical profession are by no means as fully aware of it as we are. Some time ago I received a prescription for "Syr. tribus B. W. and Co." Finding no such preparation in B. W. and Co.'s most recent list, I communicated with the prescriber, and he replied, "They make a Three syrups tabloid, and I thought you would guess that I meant a syrup of that formula." Asked a few days later what he meant when he added a firm's initials to a prescription, he said, "I put them there for the dispenser's information, meaning that if he does not know the preparation he will find it in their list." He had no intention of insisting on their make provided an identical preparation was sent. The suggestion that it was legally impossible in such a case to dispense any preparation but that of the firm indicated, he greeted with surprise and ridicule. "If the dispenser does what he thinks right and the prescriber is satisfied, what right has anyone, even the patient, to interfere?" he asked. Similar ideas were held by the doctor who asked for McK. and R.'s Pil——, and when told they were not in stock, asked, "How long will it take you to make them?" A provincial doctor, when told by telephone that a certain proprietary pill was not obtainable in the town, said, "I'll give you the formula if you will take it down." Told that that could be obtained from the list without troubling him, he asked, "Then why on earth have you rung me up?"

Pharmacist versus Factory Hand.

Let us compare for a moment the respective claims of the extempore and the nostrum pharmacist. The latter's favourite argument seems to be that it is necessary to specify a good make in order to obtain a good preparation—an abominable and unjustifiable slur upon pharmacists as a whole. Advertisers are fond of referring to their reputation, some even venturing to declare that it is won by merit. There are two ways of securing a reputation—by deserving it and by blowing one's own trumpet. For rapidity and thoroughness, the trumpet method is far superior to the old-fashioned way. Indeed, the possibilities of securing a reputation by deserving it are distinctly limited. A genius may win a world-wide reputation and an honest tradesman may earn a local one, but I cannot imagine a vast commercial reputation won entirely or even largely by merit. As for advertisement, its possibilities are unlimited; the acceptance of a statement depends not on its truth, but on the persistence with which it is repeated. The advertiser silences censure, and makes a fair estimate of his goods impossible. The only loud critic (the public press) is silenced by self-interest, and all feebler voices are drowned in the ceaseless roar of self-praise. The greatest scoundrel unhung may be glorified as a saint if he will but learn the art of advertising. The advertiser's reputation then conveys no guarantee. Let us now examine the retailer's guarantee. His reputation is local and his scope limited; if he fails to secure the confidence of his immediate neighbours he can do nothing. Self-interest then impels him to maintain a high standard. Excellence is the breath of his nostrils. The retailer, we are told, cannot test his stock; he hasn't time. Possibly, but he buys from a wholesaler who, like himself, depends upon the quality of his goods for existence. If a first-class wholesale druggist by mistake passes an inferior drug into stock, trouble almost inevitably follows. It will be criticised in half the pharmacies it finds its way into, and every assistant will fling a stone at the offending house—"You should deal with So-and-So, sir; they don't send out stuff like this." So also with the retailer. Whisper that his drugs are inferior and you ruin him. When I read some of the wholesale slanders with which certain advertisers seek to entertain the public I thank Heaven that there is a law of libel, and the venom scattered broadcast may not be directed against an individual. What happens if an advertiser sends out goods not up to the mark? Nothing much, probably nothing at all. Merely through self-interest the pharmacist is a better public servant than the advertiser. The former relies upon merit, the latter on advertisement. What would become of all these wonderful preparations if the advertisements were withdrawn? Would merit keep them going? Which would most injure the sale of "the best" extract of malt, to reduce the advertisements 25 per cent. or to reduce the cost of production 25 per cent?

The Master Braggart.

"Ours is the best, and there is nothing quite so good as the best," is a sentence the medical profession are becoming used to. Do they realise what an insult it is to assume that they believe it? This arrogant advertiser practically declares that only himself can perform a simple pharmaceutical operation properly, which is about as reasonable as it would be to suggest that only one man on earth can recognise a case of measles. Medical practice develops instead of destroying the intelligence, and doctors are not, as this advertiser assumes, the greatest fools on earth, but men of considerably above the average intelligence. To compare legitimate and nostrum pharmacy on other points, while the latter is more convenient to the prescriber, official preparations are more easily obtained and cheaper for the patient. I have known a wealthy, but mean, patient work herself into a state of nervous irritability while her doctor tried one expensive nostrum after another. It was like drinking gold, she declared, and eventually she left him. Again, as has often been pointed out, the prescribing of nostrums encourages the undesirable practice of self-medication. A man may hesitate to repeat a prescription too often, but when he finds, as he inevitably does, that the medicine is obtainable with printed directions, he feels safe in using it *ad libitum* himself and in prescribing it for his friends. Lastly, the official and semi-official galenicals are the best. The General Medical Council and certain other persons, who have no axe to grind in puffing one drug over another, carefully examine all remedial agents and assign to each its proper place. If the value of their work were properly recognised nineteen out of twenty prescriptions would contain nothing not mentioned in the Pharmacopœia.

The Eclectic.

There is a man who makes full use of the pharmacist. He is alert and acquisitive, eagerly seizing everything that is likely to prove useful—the new idea, the new method, the new drug, the new food, and, it must be added, the new humbug. He seizes, examines, and retains or rejects. He asks his colleagues' opinions of the new remedy, but he goes to the chemist for information as to its pharmacy and its popularity. He writes on paper bearing his address, consultation hours, and telephone number. This is for the patient, not for us, but we are more grateful than the patient; it establishes at once the authenticity of the prescription, and makes it possible to consult the writer without alarming the patient by asking questions. He does not order "messy" mixtures; when in doubt he asks the chemist. One day he is told that glycerin of tragacanth is not the right excipient for potassium permanganate pills. He asks why, and finds that the art of pill-making is not within his province. From that day he writes pill formulæ without indicating the excipient.

The Mutual Grievance.

The prescribing of medicines, and the preparation of them, are each sufficiently important to be kept apart from the other. There are many patients, however, whose circumstances do not admit of their paying two fees, and it becomes necessary for either physician or pharmacist to do the work of both. I think the reasons against doctors dispensing are as good and no better than those against chemists prescribing. The chief objection to an inefficient physician is that he may form an opinion very wide of the mark, but so also may a rapid or careless one. A youth with a very red face who complained of "pains and flutterings just here" (region of heart), tried half a dozen cheap doctors, each of whom gave him some kind of indigestion mixture. Then he visited a half-guinea practitioner, from whom he received a prescription for a heart tonic, which he took for some time with good results. Probably the mutual grievance will always exist, but it can be made as small as possible if both physician and pharmacist decline to go out of their legitimate province, except to oblige those who cannot afford to pay both.

THE SALE OF POISONS.

The following reasons for disagreeing with the majority report of the Privy Council Poisons Committee have been issued in pamphlet form by the Pharmaceutical Society of Great Britain, for the information and guidance of chemists and druggists. Copies of the pamphlet will be supplied by the Secretary of the Society on application.

The Principle.

It is inaccurate to state that the use of sheep dips and similar preparations was rarely practised thirty-five years ago, and equally untrue that the Legislature in 1868 was unaware of the technical uses of the articles then placed on the Schedule. The Committee took no evidence on the first point, though it was readily available, and altogether ignored the events connected with the passing of the Pharmacy Act. So much misconception exists as to the relationships between the Pharmaceutical Society and the Pharmacy Act, 1868, that it is necessary to explain the exact facts. Some years prior to 1868 cases of poisoning arising from the indiscriminate sale of poison became so frequent that the necessity for legislation on the subject forced itself upon Parliament—not the Pharmaceutical Society. Several attempts were made to regulate the sale, but nothing came of them. In 1863 a Committee of the Privy Council sat to inquire into the subject, and reported that the sale of poisons would not be put on a proper basis unless carried on by proper and competent persons. This principle was definitely enunciated after consideration of arguments almost identical with those urged by Mr. Alexander Cross, M.P., in his supplementary report. It was confirmed by the evidence taken by a Select Committee of the House of Commons in 1865. The Pharmacy Bill, which was introduced to give effect to the Committee's report, did, however, exempt poisons used in manufactures for technical purposes, and, moreover, omitted opium from the Schedule, but the House of Commons, on the ground of public policy, refused, by a majority of nearly two to one, to sanction any such exemption, and struck out the saving clause. The restrictions of the present Statute are, therefore, not the result, as is so often said, of rapacious tactics on the part of the Society, but of Parliament's own conviction of the necessity for such restrictions. These are facts which are recorded in "Hansard," and may be verified by members of Parliament.

It may safely be contended that the conditions which in 1868 made it expedient to place the retailing of certain poisonous preparations in the hands of technically trained and examined persons exist at the present time; indeed, they have become more accentuated by the enormous development of the popular practice of self-drugging. The late Dr. Hubbard some years ago called public attention to the grave dangers, more especially to infant life, attending the free sale of proprietary preparations containing poison—"concealed poisons," as he called them—and pressure was brought upon the Society by the British Medical Association, among other bodies, to take proceedings against the unqualified sellers of these nostrums.

Proceedings were eventually taken and convictions obtained; one of the results being the formation of a Patent Medicine Vendors' Protection Society, which takes an energetic part in the present agitation for a relaxation of the law, and secured a hearing before the Privy Council Committee. The opinion of coroners (shown in the appendix to this pamphlet) goes strongly in the direction of increased restriction rather than towards a weakening of the principle upon which the Act of 1868 was based. That opinion should have weight, having regard to the experience of these public officers, and to the fact that some of them are medical men. Dr. Wynn Westcott, the coroner for North-East London, in his evidence before the Committee, gave testimony on the efficacy of placing carbolic acid on the Schedule, and, if other coroners were asked, it would be found that they could similarly bear witness to the fact of the Schedule being a real protection against accidental or criminal poisoning.

Administration.

The "irregularity and uncertainty" alluded to in the report is more apparent than real. The Society did not seek the duty of prosecution, and has suffered considerable odium and financial loss in carrying out its Statute-imposed obligations. Actual uniformity in administering the penal clauses of the Act is a practical impossibility, seeing that apparently identical cases often involve totally dissimilar principles; but the Society has consistently performed its public work from a public, as opposed to a trading, point of view. Where danger to the community has been in question, action has followed, but in other cases a very broad interpretation of the exemption in favour of wholesale trading has been taken. Both the general public and the trading community ought to be grateful rather than otherwise for any inequality arising from so equitable a policy, and it is doubtful if any Department of the State could have administered the Act as fairly and as well as the Society has done for the past thirty-five years. There is the question of cost, too. What would it cost the country if the Treasury took over the duties? At present an average of 300 or 400 cases are dealt with annually, and the public contributes nothing; but if the State had to create machinery to investigate even this number of infringements the Estimates would have a large additional item.

Inconvenience to Farmers, etc.

The Committee accepted the suggestion of inconveniences solely on the representation of interested parties. No farmer was called to support the suggestion, and only one florist—who, however, admitted that in his legitimate business he had experienced no difficulty in getting the preparations he required. From the minutes of evidence it appears that the only source of complaint is the Scottish Chamber of Agriculture (see evidence of Mr. Crawford, of the Board of Agriculture). Sir Herbert Maxwell, the Chairman of the Poisons Committee, is now Chairman of that Chamber. Mr. Alexander Cross, M.P., who is a manufacturer of agricultural preparations, has been actively occupied in keeping the question of the sale of poisons before the Chamber for the past eight years, and an example of his methods may be found in a speech delivered on October 19, 1898 (printed and issued in a Board of Agriculture report). It is clear from the published evidence that the Scottish Chamber was the only agricultural body to discover that farmers were suffering grave inconvenience. The Chairman of the Committee, in a (No. 888) question to the Board of Agriculture representative, confirms the view that there is no real hardship to agriculture in the ordinary operation of the Pharmacy Act, and not one of the witnesses called could substantiate the charge of oppressive incidence conveyed in the majority report.

In regard to the statement that there are agricultural districts in Great Britain upwards of fifty miles from a chemist, careful investigation of a map charted for the purpose reveals the fact that there is no cultivated portion of the kingdom anything like the distance from a registered man. But, if there were, it is monstrous to suggest that the sale of poisons in large centres of population like London should be dealt with on the basis of such exceptional and rapidly disappearing circumstances. Moreover, such remote places would not be likely to possess any kind of shop-keeper. Distance from a licensed house does not entitle a farmer to distil his own spirit or to ask for a repeal of the licensing laws; nor should an isolated situation be accepted as an adequate reason for knocking the bottom out of the law relating to retailing poisons. In outlying districts the general practice is either direct dealing with the manufacturer or periodical visits to the nearest market town. The farmer who would willingly forego his trip to his market town has yet to be discovered!

Third Schedule.

A third Schedule of poisonous articles to be sold by others than trained persons would be a retrogression. No mechanical devices of labelling can be an efficient substitute for the technical competence of the vendor, and there is a grave danger in now undoing the education of the public, in regard to the purchase of poison, which has been slowly going on for thirty-five years. The minority report states that a third Schedule is unnecessary, impolitic, and impracticable, and the force of the description should be pointed out to members of Parliament and the public. What is an "agricultural purpose," and if it is to be deemed safe to allow an unqualified man to sell one pound of arsenic in a packet, why should it be deemed an offence if he sold half an ounce? The anomalies that would arise from the adoption of a third Schedule would have the effect of rendering the other two Schedules practically valueless.

General Misconceptions.

In the course of the Privy Council inquiry, witnesses, and, indeed, members of the Committee themselves, continually referred to the restrictions of the Pharmacy Act as though the sale of every poisonous substance capable of being used in agriculture were confined to chemists. This inaccurate assumption should be dispelled. Only the articles mentioned in the Schedule are subject to restriction, and even those only when they are retailed. A glance at the Schedule (copy of which is printed in the appendix hereto) will show how very slight an interference with the agricultural industry is possible. What there is is justified by reasons of public policy. Another misrepresentation is that chemists are incompetent to give advice in regard to the use of agricultural preparations as a seedsman culd. Such a statement is simply absurd, having regard to the fact that every chemist has to pass a stringent examination in the subject of botany, and in many purely agricultural districts the chemist is the local scientific adviser on agricultural matters.

It is, moreover, not generally recognised that the chemist is the only keeper of an open shop who, in the exercise of his trained judgment, constantly has to refuse to supply the very goods—to wit, poison—from which he hopes to get a living. Refusal to hand over a dangerous article to a suspicious person, or to supply an excessive quantity of a potent agent is an experience of every-day occurrence to the pharmacist, and there is no means of computing the value of the service thus rendered to the community. The question is not one involving considerations of £ s. d. so far as pharmacy is concerned, but it is indisputably one of principle on the public side.

The Evidence Against Relaxation of the Law.

Much valuable evidence was given, entirely disproving all the assumptions of the Committee. Special mention may be made of the evidence given before the Committee by Dr. Wynn Westcott, who was authorised to speak on behalf of the Coroners' Society. His evidence, with much else that was material, was almost wholly disregarded in the majority report.

Dr. Westcott recommended that "the restrictions affecting the retail sale of poisons and poisonous substances should be increased rather than diminished." He further said that the fact of scheduling a poison certainly diminished the number of suicides with that drug. Since the publication of the report, the Birmingham Coroner has said that the general tendency of opinion among those having to deal with the question in the public interest was rather in the direction of further restriction than of relaxation. "I think," he added, "it is only fair to say that my experience shows that chemists are very careful in the sale of poisons, and that they constantly do more than they are required to do by law with a view to the safety of the public." Other coroners have spoken in similar terms. Captain the Hon. G. A. Anson, Chief Constable of Stafford, states that, as regards accidental poisoning, the easier the sale of sheep-dips, etc., the more risk there is of accidents. "So long as the trade is conducted under restrictions and only through chemists and druggists, I think people are likely to realise the necessity of treating the dips as dangerous, but if they could buy them anywhere familiarity might breed contempt." The head gardener to the late Right Hon. R. W. Hanbury, M.P., states that, in his opinion, the restrictions on the sale of poisonous weed-killers should remain exactly as at present. No difficulty is experienced in obtaining such preparations from chemists, whom he considers the most suitable persons to effect the sale.

The Petitions from some Chambers of Commerce, etc.

The advocates of a freer sale of poison have been successful in persuading a few horticultural societies, farmers' clubs, and Chambers of Commerce to pass resolutions in favour of the proposed relaxation of restrictions. It may be noted, however, that various branches of the Sociey of Chemical Industry, and several of the more important Chambers of Commerce—which have heard both sides of the question—have refused to take any such action, to which, in fact, they are strongly opposed.

The Future Effect of Legislation on the Lines of the Report.

If, as suggested, licences are to be given for the sale of poisons to unqualified persons, they must be given either to all and sundry applying, or by arbitrary selection; if the former method be adopted, it means a return to the evils for which Parliament was forced to find a remedy in 1868, and, if the latter, it would certainly be felt to be a more irritating restraint of trade than the present arrangement, which has this merit, at least, that it is based on a definite and intelligible principle. Should this new method, whether free or restricted, be adopted, there would certainly follow in its wake a recrudescence of the evils formerly experienced; and, if proof be asked that this will be so, it is only necessary to point to the effects produced from the unrestricted sale of carbolic acid. Before it was scheduled the number of accidental deaths and suicides for which such unrestricted sale was responsible amounted to nothing short of a scandal.

Several of the interested witnesses suggested hat ironmongers were suitable agents for such preparations as arsenical sheep dips. The idea does not seem to commend itself to the representative organ of the trade, the *Ironmonger*, which in its issue of February 7, 1903, strongly deprecates the idea of the hardware trade handling trade poisons. It evidently regards that, to be the effect of the Committee's report, for in a subsequent article it states that "If the recommendations of the Committee are carried out, the sale of such preparations will therefore be thrown open to ironmongers, among others, and it is probable that many hardwaremen will avail themselves of the opportunity of adding a new department to their business."

The Chemist's Discretion.

It is a fact which has been fully proved in evidence, emphasised by coroners and corroborated in the press, that chemists and druggists do surround the sale of poisons with even more than the necessary formalities; they try to sell as small a quantity as possible, rather than as large a quantity, so that none may be left "lying about." From their education and knowledge of poisons they are able to exercise a trained and valuable discretion. No chemist, for example, would ever make or sell such a preparation as "Alexander Cross and Sons' Ballikinrain Ant Destroyer," a sweet and seductive mixture of arsenic and syrup, the former being in quantity sufficient in each bottle to kill 200 adults. This preparation is put up for sale in a plain bottle, costs the makers 2½d., and has been sold for 2s. 6d. by seedsmen without formalities of any kind. The chemist, again, is in a position to recommend and supply suitable antidotes in cases of poisoning; this a seedsman or ironmonger could never do.

PHARMACY ACTS AMENDMENT BILL, 1903.

The provisions of the Pharmacy Bill now before Parliament have been explained in a circular issued by the Pharmaceutica Society, wherein it is pointed out that:—

1. The promoters of this Bill are the Pharmaceutical Society of Great Britain, established in 1841, and incorporated by Royal Charter in 1843, and having a voluntary membership of 5,800.

2. By the Pharmacy Act of 1868 the Society is entrusted with the administration of the Poison Laws of Great Britain.

3. Sections I. and XV. of that Act enact that only persons qualified by examination as Chemists and Druggists or as Pharmaceutical Chemists may:

(*a*) Sell poisons; that is, carry out the actual sale.
(*b*) Keep open shop for the sale of poisons.
(*c*) Take the title of "Chemist and Druggist" or "Pharmaceutical Chemist."

4. These Sections also compel "persons":

(1) To conform to the Regulations provided by the Act for keeping, dispensing, and selling poisons.
(2) To compound Pharmacopœia medicines according to the Pharmacopœia.

5. By a decision of the House of Lords the foregoing sections do not apply to limited liability companies.

6. A person who fails to pass the qualifying examination may convert himself into a company—often a so-called "one-man" company. As a company he can do all those things which as an individual he could not; and he is not amenable to the Regulations for storing, dispensing, and selling poisons, or to the Pharmacy Act provisions for correctly dispensing.

7. Whilst the Society does not seek to prohibit companies keeping open shop for the sale of poisons, the Bill would, as far as it is possible, place them in the same position as individuals, so far as the poison laws are concerned.

8. When a poison is sold by an unqualified assistant the employer, whether a person or a company, is not penalised. Civil proceedings for the recovery of the penalty (£5) can only be taken against the assistant. The assistant often pleads he has no means, and, though the Society obtains judgment, no penalty is paid, and the assistant goes on breaking the law with impunity.

9. The Bill seeks to make the employer, whether an individual or a company, liable for the penalty, and thus would prevent poisons being sold and dispensed at branch shops by unqualified assistants, whether such shops are owned by individuals or companies.

10. There is at present no means of knowing (1) where poisons are retailed; or (2) who is in charge of shops where poisons are stored and retailed.

11. The Bill provides for proper registration of such shops and the managers thereof.

12. The Bill removes any doubt as to whether poisons sold by hawkers, and in public market places, are within the present regulations relating to the retailing of poison.

Sixty Years Ago.

From the PHARMACEUTICAL JOURNAL, August, 1843.

NOTICES OF SPECIMENS IN THE MUSEUM OF THE PHARMACEUTICAL SOCIETY.

BY MR. THEOPHILUS REDWOOD, CURATOR.

Aloes Wood.

This is an obsolete article of the materia medica, which was once held in very high repute. Pomet, chief druggist to Louis XIV., in his 'Histoire des Drogues,' says:—"Of all the woods sold in the shops, we have none more precious, more valuable, and rare than the *true wood of aloes.*" This is the substance alluded to in Scripture where aloes is mentioned. It is described by Dioscorides, Avicenna, and other ancient writers as a fragrant and aromatic wood. Much difference of opinion has existed as to the tree which affords the true aloes wood. It has been ascribed to the *Excœcaria agallocha*, a tree belonging to the natural order Euphorbiaceæ, the juice of which is so acrid as to cause blindness when allowed to touch the eyes; and hence the name from "excæcare," to blind; and also, probably more correctly, to the *Aquilaria agallocha* and *Aquilaria ovata*, belonging to the natural order Amygdaleæ. Pomet says there are several sorts of aloes wood, but that the best is the Agallochum of India, which comes from Calicut. "The finest," he says, "is the black kind, of a changeable colour, full, heavy, solid and thick, which cannot be whitened, and is difficult to set on fire. Some persons pretend to affirm that we cannot have the true wood of aloes, and that it grows not in this terrestrial paradise, it having been swept away by the deluge; and others will not allow it us because it is not produced among us, except in deserts and upon inaccessible mountains, not only from their height, but because of the wild beasts which inhabit among them; to confute all which I shall only state that the ambassadors from the Kingdom of Siam brought of this true wood, to present to the King of France, now reigning, a basin, with its salver, proper to wash hands in, made at Siam, after the mode of that country. This basin, though of wood, is more esteemed than if it had been of massy gold, because made of the true aloes wood, growing at Bantam, and in China, and which is of the size and shape of the olive tree, having leaves something after the same sort; after which grows a little round fruit, like our cherry.

"The chief sign of the goodness of aloes wood is, that the chips being put into water will swim, and when burning on firecoals, they will sweat or fry, afford a sweet scent, and leave bubbles behind them not easily vanishing. It is hot and dry, cephalic, neurotic, stomachic, cardiac, alexipharmic; strengthens the brain, heart, nerves, spirits, and whole body; is excellent against faintings and swoonings, and kills worms by its bitterness. Dose, in powder, half a drachm to a drachm."

The specimen in the Museum was presented by Messrs. Winstanley and Son.

REVIEWS AND NOTICES OF BOOKS.

'Photography with Roll Films: The Primus Handbook.' By John McIntosh. Pp. 196. Price 1s. nett. London: W. Butcher and Sons, Camera House, E.C.

During the past two or three years there has been a large increase in the number of roll film cameras upon the market, the result being that they are now extensively employed by amateur photographers, and while the general principles of photography hold good in the case of roll films, there are certain differences in manipulation, as compared with glass plates, which render a text-book devoted more particularly to roll film photography a great convenience, if not an actual necessity. The book just issued by Messrs. Butcher and Sons is well written in such a manner that the beginner should have no difficulty in following the various processes explained, and even those amateurs who have been dabbling in photography for years may pick up some useful hints. The author in the course of thirteen chapters covers the usual ground, beginning with an introductory note and the selection of the camera and ending with a chapter on "Optical matters, lantern slide making, and enlarging."

'The Photo. Miniature,' Vol. V., No. 49, April, 1903—Dark-Room Dodges. Pp. 1-48. Price 6d. London: Dawbarn and Ward, Limited. 1903.

The first number of Vol. V. of the *Photo. Miniature*, No. 49 of the complete series, is devoted to a monograph on "Dark-Room Dodges," by Mr. F. C. Lambert. The object of the author has been to gather together for ready reference a few dodges for the dark-room worker; home-made contrivances or "tips," which may serve in an emergency to take the place of more elaborate conveniences. He has succeeded in compiling a most interesting and useful collection of "dodges," each of which photographers will be able to appreciate.

'A Handbook of Physics and Chemistry.' By H. E. Corbin, B.Sc., Lond., and A. M. Stewart, B.Sc., Lond. Second edition. Pp. 438. Price 6s. 6d. London: J. and A. Churchill, 7, Great Marlborough Street, W. 1903.

This handbook is especially designed to enable students to meet the requirements of the first examination of the conjoint examining Board of the Royal Colleges of Physicians and Surgeons. It should also prove helpful to pharmaceutical students, though the chemistry is not treated in such detail as is necessary for the Minor Examination. That part of the book which deals with physics, covers, however, the greater part of the "Minor" syllabus in that subject.

'The Testing of Chemical Reagents for Purity.' By Dr. C. Krauch. Third edition. Translated into English by J. A. Williamson and L. W. Dupré. Pp. 350. Price 12s. 6d. net. London: Maclaren and Sons, 37 and 38, Shoe Lane. 1902.

This is the first English presentation of Dr. Krauch's work, which has been through three editions in Germany. The author is chemist to the firm of E. Merck, Darmstadt. The translators, who, it may be mentioned, seem to have succeeded in rendering the descriptions in clear and readable English, have endeavoured to enhance the value of the book by referring wherever possible to English text-books and to English abstracts of German literary contributions. Rigid adherence is urged throughout to the degree of concentration, the amount of reagent used, and the manner in which each particular test is to be performed. The necessity of having all chemical reagents thoroughly pure should create a demand for this thoroughly practical treatise.

VETERINARY NOTES.

BY "CENTAUR."

Anti-Foot-and-Mouth Disease Serum.

Professor Nocard, colloborating with Dr. Roux, has produced a serum for the prevention of the spread of foot-and-mouth disease, but there are two such serious drawbacks to it that British stock-keepers, in their fortunate position of isolation, will not be likely to employ it. A dose of 800 C.c. has to be hypodermically injected, and affords protection for only fifteen days. This poor result is, however, of more value in France than might be supposed, since, despite the most careful sanitation, inspection, and good management at shows in that country, they are invariably followed by the spread of the malady, and a protection of only a week or two may considerably reduce the risk.

Distemper—Canine Pasteurollosis.

From Germany comes a new treatment for this hitherto troublesome malady among dogs and cats—subcutaneous injections of a 7 per cent. solution of chloride of sodium and hydrochloride of quinine. The author states that nutrient suppositories are a failure, and (*sic*) says "the subcutaneous injection of milk or blood serum is the best way to give a nutrient when the stomach cannot support nutriment." The latter strikes the every-day practitioner (always confronted with the question of expense and practicability) as distinctly difficult, as one could not puncture a patient all over to give frequent small subcutaneous "meals," even supposing the milk were sterilised and the instrument absolutely aseptic. The probable result would be a number of abscesses, if the unfortunate subject of the experiment lived long enough to develop them.

Vaccines and Distemper.

Reference was recently made to the formation of a committee of veterinary surgeons and medical men to put to the test some of the so-called "vaccines" now before the world as preventatives of distemper in the dog. Some thirty-five suitable puppies were obtained, and these had been placed in custody of a veterinary surgeon on premises where no distemper case had ever been known. Unfortunately, when the time came for inoculation, one of the puppies was found to have developed the malady, and the whole number of innocents will have to go into the lethal chamber, and the experiment commence again *de novo*, and on other premises. Considering the very large number of dogs which pass through distemper, even when born and brought up in isolation, as on mountain sides and among shepherds, there is nothing surprising in one out of thirty-five bringing the contagion with him to a building in which thirty-four others are confined. It is not, of course, any proof of spontaneous origin, although some old-fashioned folks will be inclined to repeat their theory that the pups "breed it themselves." It is most desirable that proof should be forthcoming as to the identity of the distemper bacillus and the possibility of obtaining immunity, or partial resistance, to a disease which has more than decimated young dogs for so long. Persons familiar with railway methods will be surprised if another thirty-five pups can be brought together without risk of infection in transit. Fresh premises are being taken, and the committee will be glad of more puppies between six and sixteen weeks, for which they will pay five shillings each and carriage. Readers interested will kindly communicate with the Hon. Secretary, 20, Fulham Road, S.W.

PATENTS AND TRADE MARKS.*

New Patent Applications.

PROCESS FOR THE PREPARATION OF OXALATES FROM FORMATES (No. 14,034, of 1902).—W. E. Evans, 27, Chancery Lane, W.C. (Communicated by Electrochemische Werke, G. m. b. H. of Bitterfeld, Germany.) Consists in mixing with 4 parts of formate, 1 part of previously prepared oxalate—for instance, sodium oxalate—and heating the mixture to from 360° to 410° C. The sodium oxalate is used instead of soda, and is found to be very much cheaper.

PROCESS FOR REMOVING ALBUMEN FROM BACTERIAL AND ANIMAL ANTITOXINS AND TOXINS (No. 18,340, of 1902).—O. Imray, Birkbeck Bank Chambers, Southampton Buildings, W.C. (Communicated by Farbwerke vormals Meister Lucius and Bruning, of Hoechst o/Main, Germany.) Consists in digesting the albumen contained in the above-mentioned antitoxins and toxins by the action of a ferment under suitable conditions, then separating the effective antitoxin or toxin from the products of digestion by precipitating with ammonium sulphate, and finally purifying by dialysis.

DEPILATORIES FOR REMOVING HAIR FROM SKINS AND HIDES (No. 11,320, of 1903).—A. J. Boult, 111, Hatton Garden, E.C. (Communicated by A. H. Stone, Boston, Suffolk, U.S.A.) Consists of 600 parts by weight of quick-lime and 5,500 parts by weight of a solution of pure sodium sulphide, containing 20 per cent., more or less, of sodium sulphide. To produce a heat in excess of that liberated by the slaking of the lime, the above-mentioned solution of sodium sulphide is heated before being brought into contact with the quick-lime, or the above materials may be mixed together and heat applied externally during the slaking process.

APPARATUS FOR USE IN MASSAGING AND THE LIKE (No. 11,541, of 1903).—Mrs. F. Rittmann, 72, Guterstrasse, Basel, Switzerland. Consists of an apparatus for the above purpose, comprising one or more toothed rollers revolubly arranged on one or more pins mounted in a fork provided with a handle, in such a way that when the apparatus is used the rollers travel on the part of the body to be massaged, the teeth of the rollers assisting in the massaging action.

Note.—Opposition to the grant of any of the above-mentioned Patents must be filed at the Patent Office on or before September 1, 1903.

New Trade Mark Applications.

SAVOMOR, for chemical substances included in Class 1 (255,289); disinfecting soap (255,290); medicated soap (255,291); and perfumed soap (255,293). "Savo" disclaimed. Fiske Bros. Refining Co., 59, Water Street, New York, U.S.A.

P.P., or "**POLIPEL,**" for photographic goods and preparations included in Class 1, by J. T. Sandell, 44, Denmark Road, Woodside, S.E. 253,284.

FECULOSE, for chemical substances used in manufactures, by W. Wotherspoon, Glenfield Starch Works, Paisley. 255,638.

DEVICE OF TWO EYES, for chemical substances used for agricultural, etc., purposes, by The Chemical Union, Limited, Wherstead Road, Ipswich. 254,097.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and 'Patent Notes for Inventors' free on application.

STORNCO label for phosphate powder, by Storr and Co., Canal Wharf, Maidstone. 255,497.

BANDIT, for chemical substances used for agricultural, etc., purposes; chemical substances prepared for use in medicine and pharmacy; and perfumery, etc., by John Knight and Sons, Limited, Silvertown Soap Works, Victoria Docks, Essex. 255,740-42.

SHIELD AND DAGGER label, for a medicine for human use, by C. de Koning Tilly, Achterstraat, 13, Haarlem, Holland. 252,062.

VENTILO, for surgical plasters (for man), by William Mather, Limited, Dyer Street, Chester Road, Hulme, Manchester. 255,348.

CARDEAN WATER label for a medicated water for human use, for curative purposes, by R. McIntosh Lindsay, 140, Albert Street, Dundee. 254,574.

BIBEVO, for chemical substances prepared for use in medicine and pharmacy, by T. Kerfoot and Co., Bardsley Vale Mills, Ashton-under-Lyne. 255,558.

BLOSTA, for philosophical instruments, scientific instruments, etc., by C. Blombach, Franzstrasse 3, Ronsdorf, Germany. 254,602.

HERNICURA, for surgical and medical bandages, etc., by T. C. Davis, 89, Bishopsgate Street Without, E.C. 254,807.

PRESERVIDE (Preserve disclaimed), for food preservatives, by Joseph Townsend, Limited, 19, Crawford Street, Port Dundas, Glasgow. 254,706.

SWAN AND DEVICE, for perfumed soap, by Lever Bros., Limited, Port Sunlight, Cheshire. 254,770.

ALBACINE ("Alba" disclaimed), for perfumery, etc., by The Bradford Detergent Fluid Co., Limited, 814, Salisbury House, London Wall, E.C. 255,102.

Note.—Opposition to the registration of any of the above-mentioned Trade Marks must be filed at the Patent Office on or before September 1 1903.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London, Thursday Morning, July 30, 1903.

Few changes of much consequence have occurred during the week. Business has been extremely quiet, and there seems but little prospect of increased activity, at any rate, for the present. The holiday season may in some measure account for the state of stagnation which exists, and the dull weather does not help to dispel the gloomy appearance which things have assumed. At the time of writing, which is at an earlier hour than usual, by reason of going to press nearly a day sooner, there are practically no alterations of note to record. Menthol is, if anything, a trifle weaker, though it cannot yet be said that the market in this drug shows any definite signs of breaking up. It is, however, still reported that bear sales for arrival continue to be made at considerably reduced rates. The advanced price of Opium is still retained, and sales of Salonica have been made at rates detailed below; the Alkaloids of Opium have not as yet been raised in price. Codeine and Hydrochloride of Morphine, of course, still remain very firm. For the latter, in quantities below 1,000 oz., it is possible that 4s. 6d. per oz. would not be accepted. Quinine is to all intents and purposes *in statu quo antea*, and only a limited business has passed in this article; the rate in the speculative market still rules below makers' prices. The sales of Oil of Peppermint H.G.H., which were made without reserve at last week's drug auctions, have had the effect of reducing the price, and Peppermint Oil can therefore be said to be lower, although higher than that obtained at the said auctions. Cascara continues to be watched with interest, and no offers are forthcoming. With regard to Senega, which is advancing, and is likely to persist in so doing, advice has been received from the other side that the receipts up to the present time have not been large. The labourers who have been engaged in digging the roots will presently turn their attention to the harvest fields, which is not to be wondered at, since higher wages are obtainable in this sphere of action. The time left for collection is therefore short. The quotations given below are the current prices for large quantities:—

ARROWROOT.—620 packages St. Vincent offered and 60 tons "Excellent" sold at 3¼d., the remainder bought in at 2½d. to 4½d.; of 29 half-barrels Bermuda offered only 6 sold at 1s. 5d.

ALUM.—Lump, £5 12s. 6d.; powdered, £6.

BISMUTH CARBONATE.—8s. per lb.; Sub-Nitrate, 7s. 3d.

BORACIC ACID.—24s. for Powder, and 22s. for Crystals.

BORAX.—Crystals, 13s; Powder, 14s. to 14s. 6d.

BROMIDES—Unaltered. Potassium, 1s. 11½d. Sodium, 2s. 2½d. Ammonium, 2s. 3d.

CAFFEINE.—10s. to 10s. 9d. per lb.

CAMPHOR.—The lower rate quoted for the crude has not affected the price of the refined. The following are the prices of the various varieties:—Bells, 2s. 2d. to 2s. 3d.; Blocks, 1, ½, ¼ lbs. in 7-28 lb. boxes, 2s. 3d.; 1 oz. in 7 lb. wooden boxes, 2s. 4d.; 2 oz. in 6 lb. wooden boxes, 2s. 4d.; 1 and 2 oz. in 1 lb. tin boxes, 2s 4¼d. to 2s. 5¼d.; ½, ⅓, ¼ oz. in 7, 14, 28 lb. boxes, 2s. 4½d. Camphor Flowers, in 5 or 10 lb. boxes, 2s. 1½d.

CARBOLIC ACID—The market is quiet. 34° to 35° C., 5d. per lb.; 39° to 40° C., 5¼d.; Crude, 60° F., 1s. 6½d.

CASCARA—Is very much firmer, owing to advices from New York that no offers can be made at all.

CASTOR OIL.—Belgium firsts for August to December delivery, £19 10s.

CINNAMON.—A number of bales (China) were sold by auction, without reserve, at 18s. These were fair twigs.

CITRIC ACID—1s. 1d.

COCAINE—Is unaltered, 17s. 6d. per oz.

COCOANUT OIL.—Ceylon spot, £25; Cochin, £32.

CODEINE—Has not yet been advanced in price, and remains at 10s. per oz.

COTTON OIL.—Refined spot, £24.

CREAM OF TARTAR—Is unchanged. 98 per cent. Foreign Powder, 91s.; 95 per cent., 88s.; First White Crystals on spot, 87s.; Powder, 89s.

GINGER.—Of Cochin small supplies only were offered at auction. Of the 264 packages catalogued, 20 sold, but the price was not mentioned; fair plump was held at 34s. to 35s.; fair bold was bought in at 75s.; medium to small ditto, at 55s. Of Jamaica, 220 packages were offered, and 10 sold; ordinary quality was a trifle lower, at 37s. to 39s.

GLYCERIN.—For ton lots 67s. 6d., and 68s. per cwt. for half ton lots.

IODIDES—No alteration. Potassium, 8s. 9d.; Sodium, 9s. 10d.; Iodoform, 11s. 8d.; Resublimed, 10s.

IPECACUANHA.—A good quantity of Rio has been sold since the Drug Auctions at last sale rates.

LINSEED OIL—Is quiet. London spot pipes, £20 2s. 6d.; barrels, £20 7s. 6d.

MENTHOL—Is, if anything, a trifle weaker. Spot price for Kobayashi is 23s. 6d. per lb., and for Yazawa 22s. 6d.

MERCURIALS—There is no alteration to record. Calomel, 3s. 0½d.; Corrosive Sublimate, 2s. 8½d.; White Precipitate, 3s. 7d.; Red Precipitate, 3s. 4½d.

MORPHINE.—The lowest price for 1,000-oz. lots of the Hydrochloride is 4s. 6d. per oz., and for smaller quantities 4s. 8d.

NUTMEGS.—Over 150 packages were offered. These all sold; 68's, rather dark, at 1s. 6d., 80's at 1s. 5d., 90's at 1s. Of Penang, only 2 cases were sold. 69's, sound, were bought in at 2s. 3d.

OIL OF PEPPERMINT.—The result of the recent sales of H.G.H. "without reserve" at the auctions has had the effect of lowering the price asked by holders, and 12s. 3d. is now quoted; it might be possible, however, to buy at 12s.

OLIVE OIL.—Mogador, £32 10s.; Spanish, £32.

OPIUM.—For manufacturing Salonica 11s. 6d. has been paid. For druggists' quality 10s. to 10s. 6d. is quoted.

OTTO OF ROSES.—The prices for the new crop have been fixed, and, it is stated, are lower than those of last year. A report has been issued by Messrs. David Thom, Domeier, and Company, Limited, stating that Mr. H. A. Holstein (Kezanlik and Constantinople) estimates this year's crop of otto of roses at about 135,000oz. Turk., as against 75,000oz. Turk. in the previous year. The figures for previous years were as follows:—75,000oz. Turk. in 1902, 82,500oz. Turk. in 1901, 120,000oz. Turk. in 1900, 69,000oz. Turk. in 1899, 48,000oz. in 1898, 70,000oz. Turk. in 1897, 110,000oz. Turk. in 1896, 72,000oz. Turk. in 1895, 57,750oz. Turk. in 1894, 57,000oz. Turk. in 1893, 42,000oz. Turk. in 1892, 69,000oz. Turk. in 1891.

OXALIC ACID.—2¾d. delivered free London.

QUICKSILVER—Keeps firm at £8 12s. 6d. per bottle.

QUININE.—Slightly harder in the second-hand market. 11¼d. is asked for B&S and Brunswick Sulphate spot, and 11½d. for December delivery. Howard's Sulphate, in 1 oz. phials, 1s. 3d. to 1s. 4d. per oz.

SENEGA.—Business has been done at 2s. 6d., c.i.f., but 2s. 7d., c.i.f., is now asked. News has been received from New York that receipts on the other side have not been large, and as such a small quantity was carried over from last year, it is quite possible that prices may even go higher than they have been this year. Very little time is now left for collecting, as labour will shortly be required in the harvest fields. The labourers earn more money by harvesting than by digging Senega Root; it is, therefore, not surprising that they prefer the former occupation.

SENNA.—One or two sales have been made of second-hand good Tinnevelly at 4½d. to 5d. for bold green leaf. Leaves of good green colour are held for full prices.

SHELLAC.—The spot market is quiet, with only small sales, on a basis of 140s. to 141s. for fair TN. The market continues firm, and some business has been transacted in futures. For August delivery at 143s., September and October at 143s. 6d.

SODIUM BICARBONATE.—£7 5s. per ton landed. Howard's 45s. per cwt.

SULPHATE OF AMMONIA.—24-24½ per cent., London prompt, £12 9s. 6d.

TARTARIC ACID.—1s. 1½d. is the spot price for English, and 1s. 1¼d. is quoted for foreign.

TURPENTINE.—American spot, 39s. 2d.

Sir John T. Brunner, M.P., Chairman of Brunner, Mond, and Co., has intimated that his co-partner and himself will present to Northwich and the county of Chester a Secondary School equipped for the teaching of 200 scholars.

TRADE NOTES.

A. Berliner.—Attention is drawn to lints, bandages, and other surgical dressings supplied from 13, Worship Street, E.C. Fuller particulars will be found on reference to the advertisement pages of this issue, and chemists would do well to apply to the firm for terms.

Calder and Co., Limited, Bo'ness, N.B., are distillers of the finest quality grain spirit for manufacturing purposes, which is guaranteed to be free from deleterious matter. It is interesting to note that this firm distils over 30,000 gallons per week, and that no acid, molasses, or damaged grain are used.

The Banana Food Company, Limited, Alderman's House, Bishopsgate, E.C.—"Bananina" is the registered title of a food prepared from the banana. It is especially recommended for those suffering from gastritis and stomach troubles. For full information readers should consult the instructive little booklet issued by the above firm.

The Model Printing Press Company, Limited, whose premises are at 63, Farringdon Street, E.C., are drawing the attention of chemists to a complete printing outfit which can be supplied for £6. It is a handy and simple apparatus, and should prove of great service to those who issue cards or circulars. No knowledge of printing is required to use it. Illustrated catalogues can be had for 4d. post free.

A. Butterworth, 37, Wakefield Road, Bradford.—A preparation which has heen well noticed by the Press, and for which there is an increasing sale is an otto of rose cold cream, manufactured by Mr. Butterworth. An examination of a sample of this article proves that it is what it is claimed to be, a white, homogeneous, finely perfumed cold cream. It is supplied in bulk from the above address, and the maker will be pleased to supply samples.

W. Butcher and Sons, Camera House, Farringdon Avenue, E.C.—Among the various articles supplied by this well-known firm of dealers in photographic requisites is a preparation known as "Coxin." It is a developer the use of which dispenses with the dark room; it also has many other advantages, and simplifies photography generally. It is prepared for sale in 2s. 6d. and 3s. 6d. tins. Other accessories put on the market by Messrs. Butcher and Sons are too well known to need mention.

A. J. White, Limited, have issued a circular to the trade in Scotland to the effect that minimum wholesale and retail prices have been fixed for their proprietaries. The minimum retail prices are as follow:—Seigel's Syrup, 1s. 1½d. size, 1s. 1d.; 2s. 6d. size, 2s. 3d.; 4s. 6d. size, 4s. 3d. The 1s. 1½d. size pills plasters, ointment, Laxol, and Malt Cough Balsam cannot now be sold under 1s. The minimum wholesale price for 1s. 1½d. size Seigel's Syrup is 12s. per doz. net. These regulations come into force on August 1.

Thomas Kerfoot and Co., 189, Holloway Road, N.—As manufacturers of fragrant cachous and other forms of lozenge, there are, perhaps, few firms who can equal Messrs. Kerfoot. For the moment, however, it will suffice simply to mention this class of goods, which are already known to every chemist. A perfume however, with a name as attractive as its odour is delicate and fragrant is the "Briar-Violet" Bouquet, which has been appropriately styled "Queen of the fragrant glade," and it is to this production that the attention of readers is directed. Free samples will be forwarded on request, and prices will be found in the advertisement columns.

W. Mather, Limited, Dyer Street, Hulme, Manchester.—This firm, whose London and export agents are Messrs. Mace and Haldane, 94, Milton Street, E.C., are as well known for their chemical fly-papers as the are famous for plasters, of which they manufacture every description. An indication of the progress recently made may be obtained from the fact that they have been compelled to lay down new and additional machinery. This step has been rendered necessary by the large and increasing demand for rubber combination plasters, as well as for other varieties. The firm will be pleased to quote special prices and give other particulars on application.

Additions to the P.A.T.A. List.—The most recent additions to the above list are Fenning's preparations, including Fenning's Adult and Children's Cooling Powders, Lung Healers, and Fever Curer. The number of powders in the 1s. 1½d. and 2d. 9d. packets has been increased from twelve to sixteen, and from thirty-six to forty-eight respectively. The complete boxes must not now be retailed below 1s. and 2s. 6d. The Penn Perfumery Company, 345, City Road, E.C., have protected the price of a number of their preparations, comprising a large series of perfumes, hair restorer, catarrh smelling salts, and toilet articles generally.

George Houghton and Son, Limited, 88, High Holborn, London W.C., send a copy of the new edition of the 'Photographers' Peerless Note-Book,' published by them in conjunction with Messrs. C. Letts and Co. The information throughout has been entirely revised and brought up to date, and the leather binding and general get up of the book are, as hitherto, attractive and durable. Other special features are a £1,000 accident insurance policy, and a list of photographic dealers throughout the United Kingdom, with full information as to dark rooms, etc. This appendix should be invaluable to tourists and travellers generally. The price of the Note-Book remains 1s., and can be obtained of all photographic dealers.

Collins' Eucalypti Remedy Company, Limited, 31, Newington Causeway, London, S.E.—This well-known firm of distillers of eucalyptus oil was established about three years ago, and has since that time been rapidly increasing in importance. It is satisfactory to record that each season the turnover has been more than double that of the previous corresponding season, which seems to bear out the firm's motto, "While we live, we'll grow." According to information received the present profits are more than five times the amount necessary to pay the 7½ per cent. cumulative preference dividends on the amount which will be offered to customers and friends. For fuller particulars with regard to the firm's productions readers should refer to the advertisement pages of this issue.

The Crown Perfumery Co., 108, Fore Street, E.C.—The various high-class preparations for which this up-to-date firm is so justly noted scarcely need be mentioned here. At Homerton, where are situated the extensive factories and laboratories, toilet articles which it would be difficult to excel are manufactured and prepared, and those who have had an opportunity of visiting these works can form an idea of the vastness of the output. A preparation, which is perhaps more popular at this season of the year than at any other, is the Crown Bathodora, which is manufactured in three odours. In addition to acting as a water-softener, "Bathodora" gives a delicious perfume to the skin. The packages have an attractive appearance and a very large sale. Lavender salts are still among the leading lines, and are gaining in popularity each year. Perfumes in large variety and packed in an elegant and saleable fashion, together with numerous qualities and styles of toilet soaps, it is unnecessary to state, are among the chief productions at Homerton. Of soaps, the Crown violet oatmeal is a very suitable article for pharmacists to sell at 1s. per box of three tablets. Chemists would do well to obtain price-lists and full particulars.

John Bell and Co., 225, Oxford Street, and 4, Hills Place, London, W.—This firm, whose wholesale business in galenicals, drugs and chemicals has been rapidly developing during the last few years, has acquired an important position among manufacturing houses. Their laboratories, which are situated at 2-10, Hills Place, W., are equipped with an extensive manufacturing plant, consisting of the most up-to-date appliances for the manufacture of galenicals and of every class of pharmaceutical preparation. The warehouses, which a representative of this journal also recently had an opportunity of inspecting, are roomy, and exceedingly well adapted to a large wholesale druggist's requirements. A special room is reserved for poisons and articles of a toxic nature, which, by the way, is under the direct control of a qualified chemist. Everything which passes through this room is checked by him. Their monthly price list compares very favourably with those of their competitors, whilst the name of the firm is a sufficient guarantee of the high quality and reliability of the preparations quoted. Readers who are not already in communication with John Bell and Co. would be well advised to apply to the firm for further particulars as to terms and special quotations.

COMPANY INTELLIGENCE.

Texas Medicine Co., Ltd.—Capital, £1,500 in 1,250 preference shares of £1 each, and 5,000 deferred shares of 1s. each. Objects: To carry on the business of chemists, druggists, herbalists, etc. Registered office, 31, Museum Street, Bloomsbury, W.C.

Imperial Quinine Company, Limited.—Registered July 24, Capital, £50,000 in £1 shares. Object, to carry on the business of chemists, druggists, drysalters, importers and manufacturers of medicinal, chemical, pharmaceutical, and other preparations, etc., and to enter into an agreement with T. Ruth, G. Johnston, F. Simeons, and G. M. Beer.

Collins' Eucalypti Remedy Company, Limited.—Registered July 24.—Capital, £3,000 in £1 shares (2,000 preference and 1,000 founders). Object, to acquire the business carried on by A. F. Collins, at 31-33, Newington Causeway, S.E., and in Australia and America, and to carry on the business of distillers and manufacturers of eucalyptus and other essential oils, extracts, and essences, chemists, druggists, etc., etc. A. F. Collins is the permanent governing director.

Baird and Tatlock (London) Limited.—Registered July 23. Capital, £40,000 in £1 shares. Object, to adopt an agreement with H. H. Baird for the acquisition of the business of a laboratory furnisher, manufacturer of and dealer in chemicals, drugs and reagents, analytical chemist and scientific instrument maker, now carried on by him at 14, Cross Street, Hatton Garden, as Baird and Tatlock (London), and to carry on the same, and the business of chemists, druggists, etc., etc. H. H. Baird is governing director for life, with power to appoint other directors.

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

Arsenic in Beer.—According to a newspaper report, the danger of arsenical poisoning in beer is not yet ended, several suspicious cases having of late appeared in the Manchester district.

Dentists in Conference.—The annual Conference of the Western Counties Branch of the British Dental Association was held in the University College Buildings, Bristol, on Friday, July 24. In the evening of the same day the annual dinner of the Association was held.

St. Bartholomew's Hospital.—The report of the Mansion House Committee on this hospital was issued on Monday last. It pronounces strongly in favour of the maintenance of the hospital on its present site, and recommends the carrying out of certain necessary improvements and alterations by a gradual building scheme.

Saccharin Smuggling.—Amando Pietri, an Italian, thirty-three years old, was convicted at the Liverpool Police Court, on Monday, of smuggling a large quantity of saccharin, sent in a trunk from the Continent to Dover, and thence to Lime Street Station, Liverpool, and was fined £100, with the alternative of three months' imprisonment.

St. Andrew's University.—A start has now been made with the chemical research laboratory of this University, the money for which has been given by Professor Purdie and Mr. Andrew Carnegie, the Lord Rector. The building is to occupy a site to the north of the present chemical laboratory, and the north front of it is to be in front of the United College buildings.

Modern Advertising.—Mr. J. T. Butterworth, chemist and druggist, of Moss Lane West, Moss Side, Manchester, announces in big print in his window that he has bought for cash £500 worth of otto of rose soap, which he is selling at twopence per tablet, or four for sixpence, and he will give five pounds to anybody who can get the same tablets anywhere else for less than sixpence.

Sham Medicines.—A Reuter's telegram from Barcelona states the police have discovered a manufactory, conducted on a large scale, of spurious pharmaceutical products, made for the purpose of being put on the market under cover of different French trade-marks. A clue to the detection of the fraud was obtained from information supplied by the union of manufacturers of Paris.

Theft of Syphon Stoppers.—At Chester Police Court last week two men were charged with stealing twelve syphon stoppers, value 24s., the property of John William Normansell, pharmaceutical chemist, 59, Bridge Street. The prisoners had sold the stoppers to a tinsmith for 6d. per lb. Both men had been previously convicted, and they were sentenced to three months' hard labour.

Manchester Chamber of Commerce.—This Chamber has now decided, at the suggestion of the Traders in Poisons and Poisonous Compounds for Trade, etc., Purposes Protection Society, to send a recommendation to the Lord President of the Council supporting the recommendations of the Departmental Committee on Poisons with regard to the proposed third part to the Schedule of Poisons.

Mr. Jonathan Hutchinson, F.R.C.S., F.R.S., was the guest of the evening at a complimentary dinner given by various members of the medical profession, on Thursday, July 23, at the Trocadero Restaurant, London, in recognition of his seventy-fifth birthday and of his fifty-three years of professional work. Sir H. G. Howse presided, and referred to Mr. Hutchinson's recent journeys to South Africa and India in the cause of medical science.

Cattle Poisoned.—In the deer park adjoining Drummond Castle, Crieff, a large number of cattle belonging to the tenant farmers on the estate are annually grazed. The other day it was discovered that a number of the cattle were suffering from the effects of a virulent poison, and one of the animals has since died, and it is doubtful if some others will recover. As no analysis of the carcase has yet been made, it is not known what kind of poison the animals have suffered from.

Fires.—A fire broke out on the premises of Messrs. Hardman and Holden, manufacturing chemists, Manchester, on Saturday, but was extinguished before very serious damage was done. Another fire occurred last week at the Carlton Chemical Works, Stockton-on-Tees, Owing to the quantity of anthracene and naphthalene on the premises, the fire blazed furiously, but the firemen were able to prevent the flames spreading to the adjacent tar stills and other departments of the works.

Fluid Extracts for the French Codex.—It is announced that the official Commission charged with the revision of the French Codex has decided to introduce into the work a number of fluid extracts, including those of cascara, coca, condurango, grindelia, hamamelis, hydrastis, kola, sarsaparilla, and viburnum. The *American Druggist* considers this step to be due to the past work of the U.S.A. Pharmacopœia, and thinks it will tend to the unification of the pharmacopœias of the civilised nations of the world.

Poison in Chocolate.—A correspondent of the *Standard* reports that a rumour that two persons were going about distributing poisoned chocolate among children, several of whom were said to be dying in the hospitals, created an immense sensation in Rotterdam last Tuesday. Mobs ran through the streets seeking for the miscreants, and a number of quite innocent people were assaulted, among them being two Scottish tourists, who took refuge in the police office. The agitation lasted for hours, but it appears that the rumour was greatly exaggerated.

Quackery in Germany.—Regulations have been drawn up by the Federal Council in Berlin in regard to the sale of proprietary medicines in Germany, and the various German governments have been requested to issue orders on the basis of the Council's proposals, to come into force at the beginning of next year. The State of Hamburg has already acceded to this request, Prussia is on the point of doing so, and the other Federal States are likely to follow suit. Various well-known panaceas are specially mentioned in the Regulations among those which are to be prohibited.

Poisonous Artichokes.—From observations of the symptoms of poisoning after eating boiled artichokes, the *Family Doctor* states that German scientists have found that a poisonous bacillus vegetates on the artichoke, and this gives it the peculiar bluish colour. It is recommended that artichokes should be consumed immediately after being boiled, and no portion reserved for future consumption. Artichokes which have become quite blue should not be eaten at all. The symptoms produced by this poisonous bacillus is something in the nature of cramp or a choleraic attack, attended by violent retching.

A Manchester Drysalter's Liability.—At the Manchester County Court, on July 23, before his Honour Judge Parry, a long inquiry was conducted with regard to a claim under the Workmen's Compensation Act for £150 to the mother of a young man twenty years of age, named William Bunster, who had lost his life while in the service of Mr. Thomas Hassall, drysalter, Ducie Street, London Road, Manchester, in May last. It appeared that it was customary for empty salt bags to be washed in an arm of the Rochdale canal, which flowed past the defendant's warehouse, and Bunster, while preparing staging for the washing, fell into the canal and was drowned. No one witnessed the accident, and the defendant denied that Bunster had been instructed to wash any bags, or that he lost his life by any accident arising out of his employment. His Honour allowed the claim to the extent of £50, with costs.

Birmingham Drysalters Fined.—At the Cannock Police Court, on Monday last, Messrs. G. Turley and Son, drysalters, Edgbaston Street, Birmingham, were summoned for supplying a false warranty with respect to a certain quantity of camphorated oil sold to T. E. Fereday, at Bridgtown, Cannock. At a previous Court Mr. Fereday was ordered to pay the costs for selling camphorated oil which was 23 per cent. deficient in camphor. The firm had refunded the costs of the case. In the correspondence which ensued after samples were taken, a letter was sent from the vendors stating that the purchaser need not be anxious, as the camphorated oil was prepared according to the British Pharmacopœia. This was the warranty given with the goods. After the case referred to was settled, the inspector under the Sale of Food and Drugs Acts went to Fereday's and demanded another sample of the oil, which was supplied. The Bench fined Messrs. Turley and Son £10 and costs.

British Homœopathic Congress.—On Thursday, July 23, the annual British Homœopathic Congress was held at Oxford, Dr. Percy Wilde, of Bath, in the chair. In the course of his presidential address, Dr. Wilde said that the statement that a drug has an opposite action in large and small doses is endowing it with qualities which it is absolutely impossible it can possess, because the drug is a physical agent acting in obedience to physical laws, and, in whatever dose it is given, can only be compared with a force acting in a straight line. But the action of the drug sets up another action, which is a physiological action, and therefore governed by the physiological law of stimulation and exhaustion. This is the effect of the drug, not its action. The opposite effects which follow stimulation arise from the nature and structure of the vital element itself, and consequently there is no exception to this law. It is to therapeutics what the law of gravitation is to physics. Inaccuracy of language rather than any question of truth is at the basis of all the controversy which has occurred on these points. London was selected as the next place of meeting of the Congress, and Dr. Burford, of London, was elected president.

The "Mosquito Plant."—Some three months ago a correspondent of the *Times* referred to the alleged value of a basil (*Ocimum viride*) in driving away or killing mosquitoes, and some notes on this and other plants were published in the *Pharmaceutical Journal* of May 9 (see page 659). Sir W. T. Thiselton-Dyer now writes from Kew, enclosing a report by Dr. Prout, Principal Medical Officer of Sierra Leone, who has definitely proved that the plant has no such property as had been alleged As the result of a large number of experiments, the following facts may be regarded as conclusively established:—(1) Growing plants have little or no effect in driving away mosquitoes, and are not to be relied on as a substitute for the mosquito net. (2) Fresh basil leaves have no prejudicial effect on mosquitoes when placed in close contact with them. (3) The fumes of burnt basil leaves have a stupefying and eventually a destructive effect on mosquitoes, but to obtain this action a degree of saturation of the air is necessary which renders it impossible for the individual to remain in the room. It is probable, however, that cones made of powdered basil would, when burnt, have the effect of driving mosquitoes away, and to this extent might be found useful. In an editorial article on the subject the *Times* remarks that delusions about supposed remedies or prophylactics arise and take root in all countries; and there are many parts of England in which it is commonly believed that the fresh leaves of the ash tree are distasteful to gnats, and will exclude them from any bedroom in which a bough is suspended. "The destruction of idols is often painful to those who have trusted in them; but, in the present instance, it is clearly for the benefit of all inhabitants of malarious countries that they should be preserved from reliance upon a proceeding which has been clearly shown to be absolutely useless."

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. C. Edward Sage, F.C.S., analytical chemist, 2, Charterhouse Street, London, E.C., notifies that his telephone number is now 8651, Central.

Sir Thos. W. Robinson and **Sir E. M. Hodgson,** both prominent Irish pharmacists, were presented to the King at the Levee held in Dublin Castle on Wednesday, July 22, 1903.

Professor J. A. Ewing, F.R.S., LL.D., has been appointed a member of the Explosives Committee in the place of the late Sir W. C. Roberts Austen, K.C.B., F.R.S., D.C.L.

Mr. Eric Drabble, B.Sc., Demonstrator in Botany at the School of Pharmacy of the Pharmaceutical Society, has been awarded the degree of Doctor of Science at the University of London.

PUBLICATIONS RECEIVED.

The Photo-Miniature. A monthly magazine of Photographic Information. Vol. V., No. 50. May, 1903. Pp. 49-96. Price 6d. Studio construction. London: Dawbarn and Ward, Ltd., 6, Farringdon Avenue, E.C. From the Publishers.

Rural Handbook. By H. Francklin. No. 5. Utility Fowl Feeding and Management. Pp. 1-36. Price 6d. net. London: Dawbarn and Ward, Ltd., 6, Farringdon Avenue, E.C. From the Publishers.

Some Difficulties of Fire Insurance. By a Former Policy-holder of the Phœnix Fire Office. Third Edition, revised and enlarged. Pp. 32. London: W. H. Eady, M.A., Enfield. May, 1903. From the Author.

BANKRUPTCY INTELLIGENCE.

Re **Frank Booth,** described as a Druggist, late of Ossett.

A petition in bankruptcy has been filed at the Dewsbury County Court on behalf of a creditor against Frank Booth, formerly residing and carrying on business at North Bar Without, Beverley, and recently residing and carrying on business as a druggist at the Medical Hall, New Street, Ossett. Booth's present address is unknown. (The name of Frank Booth does not appear on the Register of Chemists and Druggists, 1903.)

WOLVERHAMPTON AND DISTRICT CHEMISTS' ASSOCIATION.

ANNUAL EXCURSION.

Thursday, July 23, 1903. The venue this year was Hawkestone Park. Thirty members and friends proceeded by train to Hodnet Station, where carriages were waiting, and then drove through three and a-half miles of lovely country, including Hawkestone Park, where thousands of black rabbits and some wild geese were seen. The hotel reached, the party dismounted and under the care of guides started off to explore the wonders of the Park, when the rain came pouring down, so a rush was made to the caverns, which are cut out of solid rock of about a mile in length. Upon emerging, as the rain was still coming down, the party curtailed the exploration of the park, and made with all haste to the hotel, where tea was waiting.—Mr. G. E. Perry proposed in a humorous speech the health of the President (Mr. F. A. Willcock), which was heartily drunk, and Mr. Willcock briefly responded.—Mr. A. C. Weaver proposed the health of "The Ladies," which was most enthusiastically received.—Mr. H. E. Cullwick responded.—Mr. Gibson proposed the toast of "The Secretary" (Mr. J. H. Coleman), who briefly responded. Home was reached at 9.45 after a pleasant day, in spite of the bad weather.

LINCOLN AND DISTRICT CHEMISTS' ASSOCIATION

ORDINARY MEETING.

Thursday, July 23, 1903, at the Coffee Palace, Lincoln, the President, Mr. J. S. Battle, in the chair.

Mr. Battle gave a very interesting account of his visit to London on the occasion of the Pharmaceutical Society's annual dinner and meeting. The report which had been received from the Secretary of the Federation of Local Associations was read and approved. It was not found to be possible to send a delegate to the meeting to be held in Bristol on the 31st ult. as no one from Lincoln proposed going to the Conference. The Secretary read a short paper dealing with the events leading up to the present Medicine Stamp difficulty, and gave several illustrations of how preparations might be labelled with ailment names and still be free from duty. Labels were also presented to the meeting which had been sent both to Somerset House and to the Chemists' Defence Association. The members were in somewhat of a difficulty as to the best way to proceed. The idea of publishing the formula on the label was not thought expedient. After considerable discussion the meeting closed without passing a resolution, with the intention of meeting again shortly, when it is possible there may be something more definite to be guided by.

SCHOOL AND COLLEGE NEWS.

Leeds College of Pharmacy.—On Saturday last the students of the Leeds College of Pharmacy had the first botanical excursion of the term. The place selected was Arthington in the lovely valley of the Warfe. Leaving Leeds at noon the party first journeyed to Adel, where the woods proved to be of great interest, yielding a good supply of specimens to the vasculum, each being explained by the Principal, Mr. F. Pilkington Sargeant, F.C.S. Adel Church, one of the finest specimens of Norman architecture in the country, excited the admiration of all. A further walk of five miles and the party reached Arthington, a beautiful village on the banks of the Warfe. Tea was served at the Warfedale Hotel, and a most enjoyable day concluded with the journey home, which was relieved by the mellifluent outpourings of several enthusiastic songsters.

BIRTH.

Priestley.—On July 21, at 11, Cartergate, Newark, to Mr. and Mrs. L. Priestley, a daughter.

DEATHS.

Burnett.—On July 21, Robert Burnett, Pharmaceutical Chemist, Fraserburgh. Aged 75. Mr. Burnett, who had been a member of the Pharmaceutical Society since 1853, served his apprenticeship to Dr. Greive, of Fraserburgh, and after gaining experience in Aberdeen and London, he returned to Fraserburgh, where he established an extensive business as a chemist and dentist, which he conducted for over fifty years. Mr. Burnett was a director of the local gas company, and a member of the old Town Council. One of Mr. Burnett's old apprentices is Mr. George F. Merson, Secretary of the Federation of Local Pharmaceutical Associations.

De Bush.—On July 24, the result of an accident, William Ernest, Baron De Bush, of 6, Albert Hall Mansions, Kensington Gore, and of the firm of W. J. Bush and Co., Limited, manufacturing chemists, Ash Grove, Hackney, N.E. Aged 43 years.

Foster.—On July 28, at Collumpton, Devon, Joseph Foster, Chemist and Druggist, wine and spirit merchant. Aged 76. Mr. Foster was one of the first to start the Volunteer movement in Devon.

Lawton.—On July 22, Adam Lawton, Chemist and Druggist, Halesowen, Birmingham. Aged 67. Mr. Lawton was a member of the Pharmaceutical Society.

Paige.—On July 27, John Gillard Paige, Chemist and Druggist South Street, South Molton. Deceased was only taken ill on the Thursday previous, but died on Monday from blood poisioning. He had been superintendent of the Congregational Sunday Schools for many years past, and had filled several offices in the church, including that of deacon.

Sadler.—On July 27, at Evering Road, Upper Clapton, William Sadler, Pharmaceutical Chemist. Aged 81 years. Although not one of the founders, Mr. Sadler joined the Pharmaceutical Society soon after its formation. He was for many years in business at Norton Folgate, Bishopsgate, where his exceedingly kindly manners gained the affection and respect of all who came in contact with him. He retired to Clapton in 1881, where for some years he acted as Divisional Secretary to the Society.

REPLIES TO CORRESPONDENTS.

INFORMATION required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Sale of Entire Drugs (H. B.—92/17).—A grocer or other unlicensed person may sell an entire drug unstamped, unless it is mixed with any other drug or bears upon the label an expressed or implied recommendation.

Formulary (R. J. H.—92/21).—The matter is still under consideration, and we shall be glad to receive copies of suitable formulæ for approved popular remedies of every description. See this week's leading article on the subject.

Pneumatic Eye Appliance (T. R. P.—92/3).—We have not heard the results of any experiments, but presumably the invention would be tested before a patent was applied for. Doubtless the patentee could supply you with medical reports.

Stamp Duty (F. B.—92/20).—Undoubtedly the decision of the Board of Inland Revenue will hit all retailers of medicine, but the chief sufferers will be limited companies and unqualified persons, while registered chemists may expect to benefit ultimately.

Blister (G. W. I.—92/14).—As a result of the burn, some of the epidermis is destroyed, with consequent inflammation of the tissue beneath. There is an exudation from the vessels of the dermis, and the "water" which collects consists of serum and white blood-corpuscles.

Bacteriological Stains (J. B. S.—92/16).—Squire's 'Methods and Formulæ' (London: Churchill) contains a number of formulæ for stains used in bacteriological work. A larger book which may be recommended is Hewlett's 'Manual of Bacteriology.' (London: Churchill. 10s. 6d.)

Conjuring Trick (H. R. M.—92/15).—You might try the compressed tablets of magnesium flashlight mixture prepared by Mr. E. Merck, of Darmstadt, and supplied by Mr. F. Boehm, 16, Jewry Street, E.C. Magnesium is not so easily inflammable as sodium, but the effect is more startling.

Contra Accounts (J. R.—92/10).—Your question is difficult to answer without an intimate knowledge of Scottish legal procedure. In equity you should certainly be entitled to deduct the balance, but if the accountant insists on charging you with the amount, you should consult a solicitor.

Manager's Commission (W. W.—92/13).—The amount of commission is necessarily subject to considerable variation with circumstances, but in the case of a business which is expected to increase rapidly, 7½ or 10 per cent. on the increased profits, in addition to a living salary, should be satisfactory to all parties.

Cough Mixture (C. J. E.—92/19).—The fact that an unqualified person holds a medicine licence does not entitle him to sell a cough mixture, so labelled, unstamped, since the Board of Inland Revenue holds that such a designation implies a recommendation and renders the preparation liable to duty. The same rule applies to "antibilious pills," "liver pills," and "head and stomach pills."

Paris Pharmacies (H. J. S.—92/11).—There are several English pharmacies in Paris, employing from one to six English assistants. There are also quite a number of French pharmacies where English chemists are required. The best methods of procuring posts in Continental houses are by advertisements in the *P.J.* and through the wholesale houses. Messrs. Scott and Co., Rue Chauveau Lagarde, Paris, keep a list of vacancies.

Medicine Licence (B. K.—92/18).—It is quite possible for a registered chemist to carry on his business without taking out a medicine licence, provided he abstains from dealing in articles liable to stamp duty and from claiming any proprietary right or secret in preparations made and dispensed by himself. Read the paper read at the annual meeting of the Federation of Local Pharmaceutical Associations and published in this week's issue.

Identification of Plants (R. H. R.—92/12).—The plants sent are:—(1) *Origanum vulgare*; (2) *Teucrium scorodonia*; (3) *Silene inflata*; (4) *Galium aparine*; (5) *Reseda luteola*; (6) *Ononis campestris*; (7) *Lycopsis arvensis*; (8) *Artemisia vulgaris*; (9) *Galium cruciata*; (10) *Senecio sp.*, probably *S. jacobœa*; but that cannot be determined without the leaves. Specimens should be sent to the Curator of the Museums, not to the Editor (see notice on this page).

Glucose in Jam (J. B.—92/4).—It was decided on appeal in the High Court, in November, 1901, that a certain sample of marmalade "adulterated" with 13 per cent. of starch glucose had not been sold to the prejudice of the purchaser. The Lords Justices decided that the addition of glucose preserved the original condition of the marmalade, and was not injurious to health. They rejected the argument of the other side that the purchaser desired to buy a substance composed of oranges cooked or preserved with cane or beet sugar.

Hair Tonic (G. P. S.—91/32).—It is most difficult to state the composition, but the preparation appears to be coloured with saffron, scented with rosemary, and to contain acetic acid. Possibly there is a little cantharides in the preparation. You might try some such formula as this:—

Acetic acid	℥ss.
Vinegar of cantharides	ʒj.
Saffron	gr. j., or a sufficiency.
Spirit of rosemary	℥j.
Water to	℥viij.

Calendar for the Week (Aug. 2-8, 1903).

Days of M	Days of W	Events of the Week.	SUN Rises	SUN Sets.
2	S	**Eighth Sunday after Trinity.**	4.25	7.47
3	M	Bank Holiday.	4.26	7.46
4	TU		4.28	7.44
5	W	Pharmaceutical Society of Great Britain, 17, Bloomsbury Square, London, at 11 a.m. Meeting of the Council. Pharmaceutical Society of Ireland, 67, Lower Mount Street, Dublin, at 3 p.m.—Meeting of the Council.	4.31	7.41
6	TH		4.32	7.40
7	F	Society of Public Analysts founded by Redwood, 1874.	4.33	7.39
8	S	○Full Moon, 8.54 a.m. John Robbins died, 1902.	4.35	7.37

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Atkins, Bartlett, Bird, Birkbeck, Boot, Branson, Coleman, Crake, Dunlop, Edwards, Findlay, Foster, Frazer, Gadd, Grier, Henry, Hills, Hooper, Irving, Jackson, Male, Manning, Matthews, Nicholls, Perrédès, Pond, Priestley, Ransom, Rodwell, Rowell, Sage, Sanders, Sargeant, Smith, Summers, Swaffin, Tocher, Tweedy, Walsham, Walton, White, Woodward.

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Annual Subscription, 20s. Post Free; Single Copies, 4d. each, by Post, 4½d.

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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, August 6, 1903.

A Board of Reference should, in the opinion of the Council of the Pharmaceutical Society, be established, with a view to instituting presumptive standards under the Sale of Food and Drugs Acts (p. 240).

Mr. W. L. Currie was formally welcomed as a member of the Pharmaceutical Council on Wednesday of this week, and, in a brief but graceful speech, expressed his appreciation of the distinction conferred upon him by his election to a seat on the Council.

Division of the Minor Examination was incidentally referred to by Mr. W. S. Glyn-Jones at Wednesday's Council meeting, in the course of a speech wherein he raised an important issue with regard to the reports of the Society's Boards of Examiners (p. 241).

A Compendium of Medicines in general use, not included in the British Pharmacopœia, is to be published in January next by authority of the Council of the Pharmaceutical Society. The subject was introduced by Mr. Carteighe at Wednesday's meeting of the Council, and a report thereon is to be presented in October (p. 244).

In Bradford County Court on Tuesday, Judge Bompas, K.C., was unable, though strongly sympathising with the Pharmaceutical Society, to compel the Registrar of the Court to endorse a committal order for non-payment of penalties under the Pharmacy Act, 1868. The judge suggested that the Society should apply to the High Court for a mandamus.

Post-Graduate Lectures on the sciences included in the Minor Examination Syllabus have been suggested by Mr. Glyn-Jones, who is anxious that the Council of the Pharmaceutical Society should employ peripatetic lecturers on chemistry as applied to agriculture and horticulture, also on optics, photography, urine analysis, and other subjects of technical interest (p. 246.)

The Annual Meeting of the Federation of Local Pharmaceutical Associations was held on Friday, July 31. Territorial Representation and Liability to Medicine Stamp Duty were among the subjects considered. A number of motions were submitted from various associations, but in most cases were allowed to lie on the table. It was decided on the motion of Mr. Merson, that the annual meeting should in future be open to all members of the Conference.

The President of the Pharmaceutical Society and Mr. Newsholme referred, at Wednesday's Council Meeting, to the Bristol meeting of the British Pharmaceutical Conference, and spoke in the highest terms of the manner in which the members had been received and entertained. Mr. Atkins suggested, by the way, that if fewer papers were received by the Conference at each meeting, they might be read and discussed in a manner which would prove more satisfactory to the authors in particular and to the members generally.

Sweet Spirit of Nitre, by reason of its unstable properties, has, from time to time, been the source of much annoyance to retail chemists. The results of a number of experiments performed by Mr. G. E. Shaw, B.Sc., F.I.C., in the laboratory of Messrs. Howards and Sons, are therefore of particular value, and the article in which these experiments are enumerated will be read with interest. The contents of some bottles only one-sixth full were examined, because a prosecution had been based upon the results of an analysis of one-third of a 3-oz. sample which had been divided by an inspector into three portions, each of which was placed in a 6-oz. medicine bottle.

At To-Day's Drug Auctions the catalogues were not heavy, and only new goods were offered. Senna and cardamoms, of which good quantities were offered, sold well at full prices. Menthol has declined. Hotchkiss oil of peppermint, which was again offered without reserve, is still lower. A variety of Cape Aloes fetched an advanced price. In the general markets little business has passed and there are few changes. Quicksilver, however, is lower. The latest information concerning Senega and Cascara will be found in the Market Report. Opium is firm, quinine is unchanged, and cream of tartar a trifle easier.

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THE INCIDENCE OF MEDICINE STAMP DUTY.

It was intimated in the *Pharmaceutical Journal* of July 25 that inquiries had been addressed to the Board of Inland Revenue with the object of ascertaining how full the disclosure of the composition of compounded medicines need be, in order to meet the Board's requirements in respect of articles upon which the payment of stamp duty would not be enforced. The letter of inquiry was worded as follows:—

> In your letter of June 3, 1903 (23787/1903 S.), you stated that the Board of Inland Revenue has decided not to press for payment of Medicine Stamp Duty in cases where an article is sold by a duly qualified chemist or druggist under such a designation as "Cough Mixture," provided that the composition of the article is fully disclosed in the label. Some doubt exists, however, as to what the Board will regard as a full disclosure of the composition of the article. For example, in the case of "antibilious pills," would it be sufficient (1) to mention by name on the label the principal active ingredient, or (2) to state that the pills contain, say, aloes, gamboge, jalap, and colocynth, or (3) will it be necessary to specify the exact quantity present of each ingredient? I may point out that the Financial Secretary to the Treasury, replying to a question in the House of Commons, has stated that payment of duty will not be required in respect of a preparation which bears upon the label an indication of its ingredients.

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Subsequently, in the course of an interview with an official of the Board of Inland Revenue, the same questions were repeated verbally, and the reply was that the exact quantity of each ingredient must be stated upon a label attached to the bottle or other package containing the medicine. In the course of the same interview the Journal representative was informed that, whilst various existing formularies would be recognised by the Board of Inland Revenue, it would not recognise any journal or other periodical publication as "a well-known book of reference," nor—as at present advised—was it prepared to extend that definition in future, so as to cover any book of formulæ published by a private individual, a local pharmaceutical association, or a trade protection society. Recognition would, however, be, according to a formulary published by the *Pharmaceutical Journal*, or by an official body, such as the Pharmaceutical Society of Great Britain (see p. 235); a statement to the effect that an article was prepared according to a formula which appeared in a work published by that Society would be regarded by the Board as evidence that the article is an approved remedy, and therefore within the exemption relied on by the defendant in the recent case of Farmer *v.* Glyn-Jones, unless the original vendor made the article dutiable. Since the interview in question took place, the following communication has been received from the Board of Inland Revenue, and the attention of readers of the Journal is especially directed to the circular accompanying the letter:—

Inland Revenue, Somerset House, London, W.C.
July 31, 1903.

Sir,—In reply to your letter dated the 17th inst., I am directed by the Board of Inland Revenue to forward to you the enclosed circular, which fully explains the conditions under which a medicine can be regarded as falling within the scope of the exemption from stamp duty in favour of "known, admitted, and approved remedies."

I am, Sir, your obedient servant,
E. E. Stoodley,
Secretary.

The Editor,
Pharmaceutical Journal.

[enclosure.]

Inland Revenue, Somerset House, W.C.
July, 1903.

Sir,—The Board of Inland Revenue having had under careful consideration the decisions in the cases of Ransom *v.* Sanguinetti and Farmer *v.* Glyn-Jones, desire me to take this opportunity of making known their views in regard to the changes thereby effected.

Having regard to the decision in the latter case, the Board have decided to regard, as falling within the special exemption relied upon by the respondent, medicines composed of drugs the denominations, properties, qualities, virtues, and efficacies of which are known, admitted, and approved, and which are sold by a duly qualified chemist and druggist, provided that either—

(1) The formula of the preparation is stated; or

(2) That the medicine is prepared in accordance with a formula in the British Pharmacopœia or other well known book of reference, and this fact is stated or otherwise indicated on the label.

It will be observed that the exemption does not apply to sales by limited companies or by unqualified persons.

The decision in the case of Ransom *v.* Sanguinetti leaves the Board no alternative but to regard such titles as "Cough Mixture" or "Liver Pills" as *per se* involving liability. If, however, such Medicines fall within the scope of the exemption above mentioned, and one or other of the conditions stated above is satisfied, they do not require to be stamped, if sold by a duly qualified chemist or druggist. It must, however, be distinctly understood that where such words as "Cough Mixture" or "Liver Pills" are used without a statement or indication of the formula from which they are prepared liability to duty is thereby incurred.

I am, Sir, your obedient servant,
E. E. Stoodley,
Secretary.

There is nothing particularly new in the foregoing circular, the whole of the subject-matter having already been published in the Journal, but the official statement is interesting as indicating definitely to what extent the Board's practice is to be changed after December 31 next.

ECHOES OF THE CONFERENCE.

As the result apparently of abnormal physical disturbances, some of the echoes of the Conference are singularly unlike the actual vibrations which caused them. One would have thought, for example, that the *British Medical Journal* might have known by this time the difference between the Pharmaceutical Society and the British Pharmaceutical Conference. The lay press, too, has really excelled itself in dealing with Mr. Idris's presidential address. Thus, Mr. S. R. Atkins, of Salisbury, is credited by name in more than one newspaper with the presidency of the Bristol Conference and with "grim humour" in the relating of "his" early dispensing experiences in Wales. Correspondents in the *Daily News*, and leader-writers in many provincial newspapers, have, with more accuracy, emphasised many of Mr. Idris's points with regard to the separation of prescribing and dispensing. The presidential address has not, however, found favour in the sight of the *Medical Press*, which considers some of Mr. Idris's medical anecdotes as lacking in conclusiveness and good taste. The *Medical Press* is confident that in no circumstances would Parliament ever be induced to withdraw from medical men the "prerogative" of dispensing. A more enlightened suggestion is that regulations for the better pharmaceutical training of medical men might well engage the attention of the General Medical Council in the near future, since the examining boards do not appear disposed to intervene.

The arrangement by which the papers read at the Conference were printed in full by the Editor of the *Pharmaceutical Journal*, and advance copies supplied to the members, seems to have met with general approval, as any risk of misunderstanding the papers was thus obviated and intelligent discussion facilitated. The Editor has received the following official letter of acknowledgment from one of the Secretaries of the Conference:—

Dear Sir,—

At a meeting of the Executive of the Conference held at Bristol on July 27, 1903, it was unanimously resolved that "the best thanks of the Conference be accorded to the Editor of the *Pharmaceutical Journal* for presenting the reprints of the papers submitted for discussion."

Yours faithfully,
E. Saville Peck.

To the Editor of the
Pharmaceutical Journal.

The photograph of those members and their friends who visited Tintern Abbey on Thursday of last week is reproduced as a plate with this issue of the Journal; copies of the photograph may be had from Mr. H. E. BOORNE, 49, Woodstock Road, Bristol, at 3s. 6d. each, mounted or unmounted, with an extra charge of 6d. and 3d. each on these respectively for postage. Large photographs of Tintern Abbey may also be obtained from Mr. BOORNE.

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THE PHARMACY BILL.

THE report presented to the annual representative meeting of the British Medical Association by the Medico-Political Committee of that body contains a brief reference to the proposals to amend the Pharmacy Act of 1868. "The attention of the Committee was drawn to a report of a Departmental Committee of the Privy Council relating to the amendment of the provisions of the Pharmacy Act regulating the sale of poisons. As, however, it is not anticipated that legislation on this matter will be attempted during the present session of Parliament, the Committee has deferred the consideration of the subject until the autumn." The full text of a petition which has been presented against the Pharmacy Bill to the House of Commons by Mr. ALBAN GIBBS, M.P., on behalf of the Apothecaries' Society of London, is printed at page 236 of this issue. We understand that the Council of the Pharmaceutical Society has referred consideration of this subject to a committee, with instructions to arrange for the insertion of a clause which will meet the wishes of members of the medical profession by exempting them, specifically and in terms, from the provisions in Clauses 2 and 11.

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THE FORTHCOMING AMERICAN PHARMACOPŒIA.

IN an address delivered last month to the Nebraska Pharmeceutical Association, Dr. H. M. WHELPLEY, Ph.G., made some interesting remarks concerning the forthcoming Pharmacopœia of the United States of America. Although the book will be called the "1900 Pharmacopœia," practically all the work of the present revision has been done since the meeting of the Pharmacopœial Convention in the summer of 1900. As a consequence of this system the decennial publications of the book may be expected to appear not less than three years after the nominal date. Dr. WHELPLEY complains that very few physicians have Pharmacopœias in their libraries, or even know what is meant by the title, and medical men fail to distinguish between the titles "Pharmacopœia" and "Dispensatory." The Revision Committee of twenty-six members is divided into sub-committees which take up special subjects and report to the larger body. The Committee works under instructions from the Convention of 1900, which presented a draft plan for revising the existing Pharmacopœia. The introduction of secret and proprietary remedies is particularly prohibited. A new feature will be the publication of average approximate doses for each article which is likely to be used internally. Only "reasonably simple" assay processes, such as lead to fairly uniform results in different hands will be described. Physiological tests for determining the strength of medicines are not to be introduced by the Committee. An effort will be made to have a gradual approach upon mutual concessions towards uniformity with similar preparations and other Pharmacopœias as regards purity and strength of the several official substances. The metric system is to be retained, and articles used solely for commercial or technical purposes are to be omitted altogether. Dr. WHELPLEY suggests that the publication of an epitome, prepared on the same lines as the Epitome of the National Formulary published by the American Pharaceutical Association, would do much to popularise the Pharmacopœia with the medical profession. The work may be expected to appear this year, but not before October. The Committee is authorised to prepare a supplement at any time if deemed desirable.

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MALCOLM WATLOCK ALLEN.

FOR the third week in succession it is our sad duty to announce the accidental death at an early age of a director of a firm of manufacturing chemists. On Monday, July 27, MALCOLM W. ALLEN, a member of the firm of STAFFORD ALLEN AND SONS, Limited, Cowper Street, Finsbury, died as the result of a fall from a cliff while mountaineering in Skye. Mr. ALLEN, who was in his thirty-second year, was the eldest son of Mr. WILLIAM CLARKSON ALLEN. He became a junior partner in the firm in 1896, after a course of instruction at the Finsbury Technical College, followed by several years of practical work in the internal management of the business. Mr. ALLEN was known to many pharmacists as an occasional visitor at the meetings of the British Pharmaceutical Conference, and some two years ago he read, with Mr. E. T. BREWIS, a paper on Essential Oils before the Pharmaceutical Society at an evening meeting in London. He was distinguished alike for his ready grasp of technical details in connection with distillation and other manufacturing processes, for his shrewdness and business capacity, and for his great popularity among all the workpeople with whom he had to deal. The numerous friends of Mr. MALCOLM ALLEN in pharmacy will extend to the members of his family ready and heartfelt sympathy in their terrible loss.

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THE PROPOSED CHEMISTS' FORMULARY.

As will be seen on referring to the report of the latest meeting of the Council of the Pharmaceutical Society (see p. 244), it has been decided that a compendium of medicines in general use, not included in the British Pharmacopœia, shall be published by authority of the Council in January next. The intention is to provide a book which shall usefully supplement the British Pharmacopœia as a work of reference for chemists and druggists. It is proposed to include, among other things, formulæ for preparations which, as a matter of public convenience, require to be described by names which are held to incur liability to medicine stamp duty unless the composition of the articles is fully disclosed, or the source of the formula is indicated. The Editor begs to thank those correspondents who have already sent formulæ for consideration, in view of the possible publication of such a work, and will be glad to receive others as early as possible, together with any suggestions as to what old and new remedies may with advantage be mentioned in the book.

PRESERVATION OF SPIRIT OF NITROUS ETHER.

BY G. E. SHAW, B.SC., F.I.C.

Much has been written to show that spirit of nitrous ether can be kept without serious change if light and air are excluded, but even now the following account of some experiments carried on during the last three and a-half years may be of general interest.

A Winchester of Howards and Sons' spt. ether. nit. was tested November 20, 1899, and gave 7·02 volumes nitric oxide. A dozen 4-oz. Lilburne flasks were nearly filled from it, and then the remaining contents of the Winchester were found to give only 6·74 volumes. As more would be lost from the spirit poured into the flasks than from what was left in the Winchester, the contents of the flask must have tested from a little under 7·02 volumes to a little under 6·74 volumes. They were sealed up immediately and kept dark in a box at the ordinary laboratory temperature, while at intervals a flask was broken open and tested with these results :—

27/11/99	6·9 volumes.
11/12/99	6·72 „
30/12/99	6·88 „
8/2/00	6·92 „
2/5/00	6 92 „
31/12/01	6·62 „
27/7/03	6·48 „

In over three and a-half years the test has only come down about 0·4 volume, and though the spirit is now rather yellow and faintly acid it would still pass all the P.B. tests.

Contrast with the above results under ideal conditions the following from a Winchester, testing at first 7·08 volumes, and after filling the 4-oz. bottles, 6·52 volumes.

Quite Dark.			In diffused Daylight.		Full light of Window	
Time.	Bottle Half Full.	One-sixth full.	One-half Full.	One-sixth Full.	One-half Full.	One-sixth Full.
1 Hour......	6·54	6·08	6·56	6·16	6·28	5·56
1 Day	6·30	5·96	6·28	5·88	5·98	5·46
2 Days......	6·28	5·68	6 20	5·62	5·98	5·18
3 Days......	6·10	5·62	6·08	5·20	4·98	4·28
7 Days......	5·78	4·88	5·64	5·04	3·92	2·46
14 Days	5·74	4·46	5·54	4·58	0·16	0·04

Three days in full summer light if the bottle is only half full will bring the strength down to P.B. minimum, while in complete darkness a week will do it if the bottle is only one-sixth full.

THE APOTHECARIES' SOCIETY AND THE PHARMACY BILL.

The following petition against the Pharmacy Acts Amendment Bill, 1903, was recently presented to the House of Commons by Mr. Alban Gibbs, M.P. :—

> App. 107. Mr. Alban Gibbs. Seal. Sig. 2. 3122. The humble Petition of the Master, Wardens, and Society of the Art and Mystery of Apothecaries of the City of London, under their corporate seal,
>
> Sheweth as follows,
>
> 1. That a Bill is now pending before your Honourable House, intituled "A Bill to alter and amend the Pharmacy Acts 1852 and 1868."
>
> 2. That your Petitioners were incorporated by Letters Patent granted under the Great Seal of Great Britain by His Majesty's King James I. in the fifteenth year of his reign.
>
> 3. That under the said Letters Patent and the Apothecaries Act 1815, your Petitioners are entitled to sell, dispense, and compound drugs, and prescriptions, and are required to grant certificates entitling the holders thereof to practise as apothecaries and assistants to apothecaries respectively, to applicants who after due examination shall have given proof of their fitness and qualification. And part of the duty of an apothecary is to sell, dispense, and compound drugs.
>
> 4. That under the Medical Acts the certificate or diploma of licentiate of the Society of Apothecaries, London, granted by your Petitioners is a legal qualification entitling the holder thereof to practise medicine, surgery, and midwifery, and to have his name entered in the medical register.
>
> 5. That your Petitioners' licentiates are several thousand in number, most of whom practise as general medical practitioners, and a great many of them, assisted by duly qualified assistants, keep or conduct and manage dispensaries, where drugs and prescriptions are sold, dispensed, and compounded. That your petitioners, in exercise of their right and privilege, have always carried on at their hall in the City of London the business of selling, dispensing, and compounding drugs and prescriptions, such business being conducted by duly qualified persons, and the customers being for the most part medical practitioners and hospitals.
>
> 6. That your Petitioners are advised and believe that the Bill, and more particularly Clauses 2 and 11 thereof, if enacted in their present form, would prejudicially affect the rights, privileges, and status of your Petitioners, and would unduly and unnecessarily interfere with and prejudice their licentiates and certificated assistants in carrying on their profession or business, and for which prejudicial interference your Petitioners submit no justification can be shown.
>
> 7. That the Pharmacy Act 1852 did not affect your Petitioners, their licentiates, or their certified assistants, and the Pharmacy Act 1868 expressly provides that its main provisions shall not extend to or interfere with the business of such licentiates. That none of the evils sought to be remedied by the said Bill arises from the business of selling, dispensing, and compounding drugs and prescriptions as heretofore carried on by your Petitioners, and their licentiates and assistants, and that it is for the public benefit that such business shall not be interfered with or subjected to the restrictions and conditions sought to be imposed by the said Bill.
>
> Your Petitioners therefore humbly pray your Honourable House that the said Bill may not be passed unless it be so amended that your Petitioners, their licentiates, and certificated assistants be exempted from its operation. And that, if the said Bill be referred to any Committee of your Honourable House, your Petitioners may be heard by their counsel, agents, and witnesses, against the Bill, and in support of the allegation in this Petition; and that they may have such other relief as to your Honourable House may seem meet.
>
> And your Petitioners will ever pray.
>
> The seal of the Master, Wardens, and Society of the Art and Mystery of Apothecaries, of the City of London, affixed in the presence of
>
> W. Parsons,
> Master.
> C. Cooper,
> Albert B. Day,
> Wardens.

PRACTICAL NOTES AND FORMULÆ.

Domestic Liniment.

Solution of ammonia, 2; sassafras oil, 2; chloroform, 2; turpentine oil, 2; clove oil, 1; spirit of camphor, 4; alcohol, 7. Mix.—*Pract.*, **69**, 748.

Iodophenol Solutions for Hypodermic Injections.

Potassium iodide, 30 Cgm.; sublimed iodine, 6 Cgm.; pure phenol, 2 Gm.; glycerin, 5 Gm.; distilled water, *q.s.* to produce 100 C.c. The dose for injection is 5 to 10 C.c.—*Bull. gén. de Thérap.*, **145**, 672.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Citric Acid to Prevent Precipitation of Certain Tinctures.

F. Gay recommends a solution of citric acid in an equal weight of 90 per cent. alcohol to prevent the precipitation of certain tinctures which are often prescribed together in Continental pharmacy, *e.g.*, tinctures of rhubarb and cinchona; tinctures of rhubarb and calumba; tinctures of gentian, calumba, nux vomica, and cinchona; tinctures of star anise, gentian, nux vomica, and balsam of tolu; tinctures of star anise, ipecacuanha, and nux vomica; tinctures of grindelia, drosera, and ipecacuanha. All these give in the ordinary way copious precipitates when mixed. The addition of a little of the above alcoholic solution enables them to be compounded so as to form perfectly clear mixtures.—*Bull. de Pharm. du Sud-Est*, through *Journ. de Pharm. d'Anvers*, **59**, 144.

Phosphorescence Induced by Radium Bromide.

W. Ackroyd has found that radium bromide induces phosphorescence in common salt at ordinary temperatures. The phenomenon may be observed as follows:—A wooden matchbox is filled with table salt removed from the inner portion of a block; a tube of radium bromide is pressed into the yielding mass and just covered with the substance. If it be now put on one side for a few hours, say into one of the compartments of a chest of drawers, on opening the box in the dark the tube will be found to phosphoresce all round with a white light, but, unlike zinc blende and barium platinocyanide, the salt continues visibly to phosphoresce after removal of the radium bromide. The portions of salt round the tube are turned of a faint buff or ochre tint. The image of the visible portion round and where the radium bromide tube has lain is impressed on a photographic plate in thirty minutes.—*Nature*, **68**, 269.

Pyronin Methyl-green, a Double Stain for Cells and Bacteria.

W. F. Whitney calls attention to the great value of Pappenheim's combination of pyronin and methyl-green as a staining reagent for general microscopic diagnosis, which, from its simplicity of application and the sharp contrast of the colours it produces, is invaluable to the general practitioner. A 1 per cent. solution of each dye in distilled water is prepared, and mixed in the proportion of 4 parts of pyronin solution to 1 part of methyl-green. This mixture will keep for several weeks, but if only required for occasional use is better prepared as required. For cover-glass preparations a drop of the fluid to be examined is spread thinly in the usual way and dried; on this a few drops of the stain are placed and heated for a few seconds, then thoroughly washed with water. It may be examined directly on a slide with a drop of water, or dried and mounted in xylol balsam. The method is excellent for the detection of *gonococcus*. The stain does not touch red blood corpuscles bacteria are stained deep red. Fresh scrapings of tumours, etc., may be equally well stained by the reagent, the nucleus and cell body taking a different shade of colour. It also gives good results with sections, but as the colours diffuse rapidly, such preparations are not permanent and should be examined at once.—*Bost. Med. Surg. Journ.*, **148**, 502.

Cassava.

The tuberous root of this plant, largely used in tropical countries as a food, exists in a large number of varieties, differing considerably in their yield of tuber, in the proportion of starch they contain, and in the amount of hydrocyanic acid they produce. Seventeen of these varieties have been analysed for R. Thomson, of Jamaica, and were found to vary in percentage of starch from 19·30 per cent. to 36·50 per cent. The poisonous bitter cassava grown in Trinidad yielded 0·022 per cent. of hydrocyanic acid, and the sweet 0·101 per cent., whilst the Columbian varieties yielded only 1/6th of the amount present in the Trinidad sweet cassava.—*Bull. Dep. Agric. Jamaica*, i., 35-38.

Cultivation of Cinnamon.

Stuhlman had the opportunity whilst in Ceylon of observing the cultivation of cinnamon. The culture is entirely in the hands of natives. The plants are grown from the sea level up to a considerable elevation, but give the finest product on the sandy soil of the coast line, the wind apparently not being injurious to the trees. The seeds are sown in seedbeds and planted out four to six feet apart, and when about two or three inches high the shoots are cut off. On stumps about fifty to sixty years old six to ten young shoots are allowed to grow, and the shoots are cut twice a year, the later shoots yielding better cinnamon than the earlier. The shoots when cut are deprived of leaves, and the upper thin portions are used for distillation of the oil, or for "cinnamon chips." The rods are ringed in lengths of about two feet, and the bark is then cut longitudinally and removed with a knife. The strips of bark are then laid on a wooden block, and the outer bark removed by a small, sickle-shaped knife, several quills being rolled one inside the other, and packed while dry in cylindrical bundles. —*Schw. Woch.*, **41**, 259.

Coco-nut Fat.

Under various commercial names, the solid fat of the coconut, more or less freed from liquid oil, and deprived of odour, is coming into very general use as a substitute for butter and lard in confectionery, being only about half the price of butter. The product of the Mannheim factory in Germany is known as "palmin," and is said to contain 95 per cent. of vegetable fat, with only a slight trace of water, whilst ordinary butter contains about 85 per cent. of fat and 15 per cent. of water. It will keep for three or four months in a cool room without becoming rancid. On this account it is used in German hospitals and in army camps. It is sold at one price—viz., 8d. per lb. throughout Germany. A similar product is made at Marseilles, and sold under the name of "vegetaline," of which 600 tons are said to be produced every month, and to be sent to Holland, England, and Scandinavia, and its use has been authorised for the French Army by the Minister of War. In England the purified coconut fat is known as "nucoline," and a firmer preparation resembling suet as "vejsu." The purified fat is said to have been first invented and manufactured in this country at Silvertown, and a branch factory was subsequently established at Liverpool, and the output of these two factories is stated to be greater than that of all the others put together. A manufactory has also been established at Pondicherry in India, where it is sold under the name of "cocotine," and is in much demand amongst Mahommedans and Hindoos, who prefer a vegetable to an animal fat, partly on account of their religious faith, and partly because it is cheap and not rancid, as ghee, or native butter, too often is. More recently it has been made at Kingston, in Jamaica.—*Bull. Dep. Agric. Jamaica*, i., 114.

Zingiber Mioga.

C. Hartwich and J. Swanlund have examined the rhizome of *Zingiber mioga*. The plant is cultivated in China and Japan, and appears to be deserving of more attention, as it is very hardy. The taste is less pungent than that of the official ginger, and distinctly recalls bergamot. The starch grains are of remarkable shape, being broader than they are long, with the hilum in a small projection from the broader side.—*Ber. d. d. Pharm. Ges.*, **13**, 142.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

MEETING OF THE COUNCIL.

At the meeting of the Council, held on Wednesday last, August 5, 1903, the President, Mr. S. R. Atkins, was in the chair. Other members present were the Vice-President, Mr. C. B. Allen; the Treasurer, Mr. Walter Hills; and Messrs. Carteighe, Cooper, Corder, Cross, Currie, Gifford, Glyn-Jones, Harrington, Harrison, Newsholme, Park, Robinson, Southall, Storrar, and Wootton.

The minutes of the July meeting were confirmed, copies having previously been supplied to members of the Council.

British Pharmaceutical Conference.

The President said that before proceeding with the business of the Council he should like to refer to the gathering last week, at Bristol, of the British Pharmaceutical Conference. He might say that the meetings of the Conference were in every respect a very great success, barring the weather, which was not under the control of the Local Committee. The reception on the Monday evening by the Lord Mayor, Sir Robert Symes, and the Lady Mayoress was an extremely agreeable and successful one, and he should like, without the slightest egotism, to refer to the very gracious conduct of the Lord Mayor towards the President of the Pharmaceutical Society. He distinctly disavowed any personal reference, because he believed the same thing would have occurred had any other person been President. The Lord Mayor was good enough to say that if he (Mr. Atkins) would like to go to the Council House on the following morning he would have pleasure in showing him some of the objects of interest. Of course, he accepted the invitation, and the courtesy of the Lord Mayor was extremely pleasing—he did not hesitate to say surprising—for he gave up a portion of his valuable time on the morning of a Council meeting, when important business was to be transacted, in order to show to him many objects of interest, and of extreme value, including the silver plate and the ancient memorials of the very ancient corporation of Bristol. He thought that the simple, kindly, hearty, unaffected behaviour of the Lord Mayor towards him as President of the Society was worthy of recognition at that meeting of the Council. On the Tuesday the Conference was welcomed by the Principal of University College, Bristol, Professor Lloyd Morgan, a very distinguished scholar and a very successful principal of the College. One thing struck him in regard to his visit to Bristol, and that was the profound respect that is cherished in that city for the memory of their old friend, Mr. Schacht. Professor Lloyd Morgan spoke of him in the very highest terms, and as Treasurer of the University College Mr. Schacht would, of course, be brought into close touch with the principal of the College. It reminded him of the proverb, "A good name is more to be desired than silver or gold," and Mr. Schacht's name was highly respected in Bristol. The President's address received very warm recognition, and many valuable papers were discussed. In regard to the papers read he felt that it was a little hard on those who took the trouble to prepare an elaborate paper for that paper to be abstracted and scarcely discussed at all. It was unavoidable, on account of the time available, but he felt that if a dozen papers only were accepted and discussed, it would be much better. But, of course, that was not a matter for consideration by the Council. The social side of the Conference was a great success. He had referred to the weather, and on Wednesday evening it was rather unfortunate, but even then the members of the Conference were able to secure a good deal of enjoyment, the Bristol Gleemen, who sang out of attachment for the members of the Local Committee, giving a delightful entertainment. The excursion on Thursday was an unalloyed success, as was also the excursion to Bath. He regretted that a greater number of the Bath chemists were not in evidence on that occasion, but those who did meet the members of the Conference were extremely kind, and warmly welcomed the visitors to Bath. The Roman baths there were very ably described by Alderman Moore, who had made a study of their history. Altogether, the meeting at Bristol was a very great success, the kindness and hospitality of the local chemists being unequalled, and the immense labour put into the arrangements for carrying out the programme was worthy of all recognition.

Mr. Newsholme supported the remarks of the President. All the delegates from the Council enjoyed themselves very much indeed, and the local chemists did their best to make the Conference at Bristol the success it was.

Letters from Absent Members.

The President said Mr. J. Rymer Young and Dr. Symes had written to say that they would not be able to attend, and Mr. Taylor, who was present at the Committee the previous evening, was also unable to be at the Council that morning.

Election of Members.

The following persons having tendered their subscriptions for the current year, were elected members of the Society:—

Bedell, Margaret I.; Crouch Hill
Beeham, Reginald Sanders; Oundle
Bowie, Alexander S.; Glasgow
Davies, Thomas W.; Caergwrle
Drewett, Percy C.; Whitby
Duncan, Elizabeth L.; Portobello
Eaton, Edgar S.; Brixton
Fraser, Thomas A.; Rangoon
Hamlin, Hourston; Dartford
Hill, Wilfrid; Ashton-in-Makerfield
King, Katharine M.; Richmond
Lewis, John R.; Ferndale
Mansell, Thomas C.; Wandsworth
Mosley, Wilkinson; Camberwell
Newill, Ethel C.; Birmingham
Riddle, William; Liverpool
Simpson, Thomas; Motherwell
Smith, Edgar; Hampstead
Spoor, Herbert M.; Edinburgh
Tunnicliff, George W.; Rugeley
Waterhouse, Percy; Hull

Election of Student-Associates.

The following persons having tendered their subscriptions for the current year, were elected Student-Associates of the Society:—

Brown, Matthew; Newmilns
Canham, Thomas A.; Norwich
Clapham, William; Lancaster
Crankshaw, J. R.; Green Haworth
Foss, Sydney E.; Broadway
Gregory, John L.; Wellington
Hermon, Reginald; Bridlington
Skidmore, Bertrand; Nantwich
Wakelin, Cyril P.; Alford
Wilson, John; Leamington
Wilson, Thomas A.; Ayr

Restorations to the Society.

Several persons were restored to the Society, upon payment of the current year's subscription.

Restorations to the Register.

The names of the following persons, who have made the required declarations and paid the restoration fee of one guinea, were restored to the Register of Chemists and Druggists:—

Adler, Martin Waldemar, 13, St. Leonard's Road, Hove.
Attwell, Arthur, 7, Coleraine Road, Hornsey, N.
Hitchen, Clement Farnell, 33, South Street, Dorking.
Osmond, George Mattingley, 39, Bramley Road, Notting Hill, W.
Padwick, Tom Percivale, 47, Station Road, Red Hill.
Sollitt, Arthur, Lansdown Street, Sunderland.

Diplomas.

The undermentioned being duly registered as pharmaceutical chemists, were granted diplomas stamped with the Seal of the Society:—

Allen, William Henry
Bellamy, Clement J. V.
Eaddie, Walter
Heely, Frederick W.
Hensman, Leonard N.
Hodgson, Harold F.
Lewis, Llewelyn
Moore, Francis Howard
Robinson, John L.
Squires, Seth Steggall
Wade, Margaret C.
Whatmough, Wilfred A.
Williams, Arthur W.
Williams, Gwilym Ivor

Finance Committee.

The following report was presented by this Committee:—

July 29, 1903.

Mr. Robinson in the chair.

Present: Messrs. Allen, Carteighe, Harrington, and Hills.

1. The Chairman reported the transfer of £3,000 from the General Fund to deposit account at the London and Westminster Bank.

2. The Secretary submitted the following statement of the accounts:—

General Fund:—	£	s.	d.	£	s.	d.
Balance from last account ...				6,357	8	2
Receipts:—						
Penalties and costs	37	10	7			
Subscriptions	29	8	0			
Registration fees	71	8	0			
Rents	78	7	2			
				216	13	9
				6,574	1	11
Payments ordered at the last meeting of the Council (including deposit of £3,000)				4,996	11	10
Balance				£1,577	10	1

Amounts Recommended for Payment:—	£	s.	d.
On behalf of the Journal	568	16	6
Library	34	1	8
House	230	12	11
Law Charges...	186	1	1
Stationery, etc., ...	54	2	7
Examiners' fees, etc.	667	19	8
Current expenses	500	0	0
Quarterly and other salaries and annuities	1,005	16	8
	£3,247	11	1

Benevolent Fund (Current Account):—	£	s.	d.
Balance from last account	£709	0	0
Receipts—Subscriptions and ground rents	169	7	5
	878	7	5
Payments—Grants, etc.	647	10	3
Balance on the current account	230	17	2
Balance on the donation account... ...	£19	13	6

(3) The Committee examined the accounts and found them to be correct, and in accordance with the foregoing statement.

Recommended that the Treasurer be requested to pay the amounts indicated.

R. A. Robinson, Chairman.

Mr. Robinson, in moving that the report and recommendations of the Finance Committee be received and adopted, said there was a slight alteration required in the item referring to salaries and annuities, £12 10s. having been put down instead of £25 in one case, so that it would be necessary to add £12 10s. to the total.

The addition was agreed to, and the report was adopted.

Benevolent Fund.

The report of this Committee included the recommendation of grants to the amount of £65 in the following cases:—

Widow of a member. 77. Cardigan.

Registered chemist and druggist. 79. Has had previous grants. Willesden.

Widow of an associate. 40. Plymouth.

Widow of a chemist and druggist. 73. Has had previous grants. Newbury.

Registered chemist and druggist. 82. Has had previous grants. Brixton.

Two cases were not entertained, and one was deferred for further consideration.

On the motion of the Vice-President, seconded by Mr. Cooper, the report of the Committee was received and adopted.

Library, Museum, School, and House Committee.

The following report was presented by this Committee:—

July 8, 1903.

Mr. Atkins, President, in the chair.

Present: Messrs. Carteighe, Harrington, Hills, Newsholme, and Robinson.

1. The Committee received the usual monthly statements respecting the Society's Libraries and Museums in London and in Edinburgh, and particulars of these are published in the *Pharmaceutical Journal* for July 11, 1903.

2. Museum.—The President submitted the manuscript of the report on the additions to the Museum during the past seven years, which had been placed in his hands by the Committee, at its last meeting, for consideration. He thought it would be better and more economical to publish the report in a separate form, and he had obtained an estimate showing that 500 copies could be printed in a suitable form for £36 10s.

   Recommended that the above-mentioned report be printed in a separate form, as suggested, and that the estimate presented by the President be accepted.

   Permission was granted to the Curator to take a week of his autumn holiday immediately following the Aberdeen meeting of the Museum Association (July 14-15).

   The Curator also applied for and obtained permission to attend the meeting of the British Pharmaceutical Conference at Bristol.

3. Mr. Knapman was authorised to attend the meeting of the Library Association at Leeds, and the Committee recommended that a grant of £10 be made for his expenses.

4. School.—The School Staff reported on the apparatus and diagrams in their charge, from which it appears that the property of the Society used in this department is in good order and well maintained.

   On the recommendation of the School Staff, Mr. F. G. C. Walker (Bell Scholar) was granted permission to enter for the Major Course next session.

   On the suggestion of Professor Wynne, and as an experiment, it was agreed that those of the students in the School who failed to pass the July Examination should be permitted to work in the laboratory during the last fortnight in September, under the supervision of the Professor.

   The Committee acquiesced in Professor Wynne's application that Mr. Garsed be permitted to assist him in carrying out certain scientific investigations in which he is engaged.

   Recommended that an honorarium of £15 be paid to Mr. J. T. Cart, in connection with his services as Demonstrator since Easter.

5. Recommended that the application of the Pharmaceutical Society of Western Australia for an annual complimentary copy of the Calendar of the Society be acceded to.

6. Messrs. Parkinson and Sons' account for £172 15s. 6d. was submitted, examined, and passed to the Finance Committee.

7. The School Visitor and Professor Wynne submitted a proposal for certain alterations and renovations in the chemical laboratories and lecture preparation room. An estimate from Messrs. Parkinson was also

presented, showing that the cost of the work would be £47 18s.

Recommended that the estimate be accepted and the work put in hand at the most convenient time. (Certain detail items not specified in the estimate, but which require to be done, were also authorised by the Committee.)

8. A communication from the Executive of the North British Branch, suggesting an increase in the salary of the typist in the Edinburgh office, was considered.

Recommended that the salary of the typist in question be increased to the rate of £40 per annum.

9. The President reported that he had inspected the premises with Mr. Parkinson, and he submitted a memorandum of the work that he considered should be done during the vacation.

Recommended that the necessary work be done, under the direction of the President.

Research.

1. Professor Greenish delivered a paper, by Mr. A. G. C. Paterson, the E. Northway Butt Scholar, on the Assay and Identification of Powdered Ipecacuanha, and reported that Mr. Knape was engaged in a series of experiments with belladonna root.

Ordered that the Paper of Mr. Paterson be published in the *Pharmaceutical Journal*, and a copy be forwarded to Mr. E. Northway Butt.

S. R. Atkins, Chairman.

On the motion of the President, seconded by Mr. Newsholme, the report and recommendations of the Committee were received and adopted.

The following report was presented from the

General Purposes Committee.

July 16, 1903.

Mr. S. R. Atkins, President, in the chair.

Present: Messrs. Allen, Carteighe, Cooper, Cross, Currie, Gifford, Glyn-Jones, Harrington, Harrison, Hills, Robinson, Southall, Symes, Taylor, Wootton and Young.

The Committee considered the advisability or otherwise of asking the Board of Inland Revenue to receive a deputation from the Council on the designation of medicines.

A *résumé* of the correspondence received on the subject of the stamp duty was furnished to each member of the Committee.

A long discussion ensued.

Moved and seconded: That the Board of Inland Revenue be requested to receive a deputation from this Council to discuss the new regulation arising out of the decision of Ransom *v.* Sanguinetti, with a view to some modification of the recent intimation that, after December 31 next, some medicines and domestic remedies which have hitherto been exempt from medicine duty are in future to be brought under the Act.

An amendment moved and seconded: That, in the present uncertainty as to the effect of the two recent decisions on cases under the Medicine Stamp Act, in the High Court, it is undesirable that the Inland Revenue authorities be approached by this Council on the subject.

On being put, the amendment was carried by a large majority, and was subsequently passed as a substantive motion.

Resolved that the decision of the Committee be communicated to the Press at once and reported to the Council at its next meeting.

Tuesday, August 4, 1903.

Mr. S. R. Atkins, President, in the chair.

Present: Messrs. Allen, Carteighe, Cooper, Corder, Cross, Currie, Gifford, Glyn-Jones, Harrington, Hills, Newsholme, Park, Southall, Storrar and Taylor.

The following report of the Sub-Committee appointed to consider the remits from the Council relative to food and drug standards was presented:—

With regard to the letter from the London and Country Vinegar Brewers' Association respecting the establishment of a Board of Reference, the Sub-Committee recommends that a Board of Reference is desirable, and should be established, with a view to instituting presumptive standards. It is further recommended that a reply should be sent to the Vinegar Brewers' Association to the effect that the Council would be prepared to cordially co-operate in bringing about the appointment of a Board of Reference, such as that referred to in the letter of March 30, from the London and Country Vinegar Brewers' Association.

The Sub-Committee regards its decision in reference to vinegar as applicable also to Mr. Cross's motion respecting mercurial ointment.

The Committee concurred in the report of the Sub-Committee, and recommends that the course indicated therein be adopted by the Council.

The Committee recommends that Mr. Currie be added to the Benevolent Fund Committee.

S. R. Atkins, President.

The President moved, and it was seconded by Mr. Newsholme and carried, that the report and recommendations of the Committee be received and adopted.

Mr. Wootton asked if that portion of the General Purposes Committee's report dealing with the question of a deputation to Somerset House, had been accepted.

The President: Yes, and it will be published as it stands. He also made a reference to the new procedure, and said it was a little difficult to adapt oneself to the new order.

Welcome to Mr. Currie.

Mr. Glyn-Jones moved, it was seconded by Mr. Harrison, and carried unanimously, that Mr. W. L. Currie be placed upon the Benevolent Fund Committee.

The President said he should like, on behalf of his colleagues, to welcome Mr. Currie to the Council, and to give him a very cordial greeting.

Mr. Currie thanked the Council, and expressed his extreme gratification at being appointed to the honourable position of a member of the Council. His endeavour would be to further the cause they all had so seriously at heart, and if he could be of any service to the craft or to his colleagues he should be very pleased to give his best service.

The following reports were also presented:—

Reports of the Boards of Examiners.

ENGLAND AND WALES.

July, 1903.

	Candidates.	Passed.	Failed.
Major	19	12	7
Minor	325	95	230
	344	107	237

2. Certificates were received from thirty-one persons, who had applied for registration as "Apprentices or Students."

3. The Sub-Committee presented the following report:—

(1) The revised regulations for Matriculation of the London University were considered in relation to the suggestion that the certificate should be accepted by the Board under any circumstances, irrespective of the subjects passed. The Committee found that Latin is not a compulsory subject in the Matriculation Examination in the medical faculty, and that it is not essential for a matriculated student to have taken a modern foreign language. The Board cannot, under the present bye-laws or regulations, accept, without conditions, the Matriculation certificate, and the Committee does not recommend that the bye-laws should be altered to enable the Board to acquire the necessary discretionary power to waive such conditions.

(2) The proposed leaving certificate examination of the University was also discussed, and the Committee recommends that the Secretary should be directed to write to the Registrar of the London University to the effect that the Board is not at present disposed to suggest the inclusion of this examination in Preliminary knowledge in the list of approved examinations accepted by the Board, but that on the understanding that the standard would not be lower than the Matriculation Examination and

included our six subjects, there would be no objection to the Board dealing with the certificates on their merits.

The Board accepted the report, and recommends that the Secretary write to the London University in accordance therewith.

4. The following communication from the Board in Scotland was received in response to an invitation by this Board for an expression of opinion on the subject of division of the Major Examination:—

"This Board notes with satisfaction the recommendation of the standing Committee of the Board of Examiners for England and Wales to divide the Major Examination, as suggested by this Board in October, 1899, and April, 1900;

"Renews the expression of its opinion that a division is desirable, and agrees with the recommendation that the examination should be held only twice a year;

"Resolves to send a *précis* of their minutes bearing on the question, directing attention specially to the minute of April 3, 1900, which embodied their views on the method of division and other points, at the same time approving of the suggestion to permit candidates to select any two of the four subjects, provided that chemistry or materia medica be always one of the subjects chosen;

"And records its readiness to concur in a joint recommendation to the Council, and, towards that end, to discuss with the Board of Examiners for England and Wales the terms of the recommendation and the necessary changes in the regulations thereby involved."

After discussion it was unanimously

Resolved that this Board adopts the recommendation of the Sub-Committee in regard to the advisability of dividing the Major Examination—which recommendation has received the concurrence of the Board in Scotland—and that the substance of the minutes of this Board relating to the subject be communicated to the Council.

Pursuant to the foregoing resolution, the following extract from the minutes of the Sub-Committee is presented:—

April 20, 1903.—"The Committee considered the advisability of allowing candidates for the Major Examination to pass in two subjects of the examination. After careful investigation the Committee arrived at the conclusion that it is advisable to effect the modification indicated, and recommends that candidates for registration as pharmaceutical chemists should be examined in any two of the following subjects, provided always that chemistry or materia medica shall be one of the two subjects—botany, chemistry, materia medica, physics."

"The Committee is of opinion that in the event of the foregoing recommendation being adopted by the Boards and approved by the Council, the Committee should be directed to thoroughly revise the Major Syllabus with a view to equalising the subjects, and for the purpose of emphasising the relationship of each subject to pharmacy."

5. The Board had under consideration a letter from the Oxford and Cambridge Local Examination authorities, inquiring whether "Geometry" would be recognised as falling within the meaning of the word "Euclid" in the regulations of the Board.

Resolved that, in the opinion of the Board, it would be conducive to greater clearness if the word "Euclid" in Bye-law 10, clause 11, line 7, were replaced by the word "Geometry." Pending the alteration hereby suggested, the Board is prepared to recognise the certificates in geometry granted by the Oxford and Cambridge Local Examination authorities as satisfying the Bye-laws of the Society so far as regards the subject hitherto designated as "Euclid."

6. The absence of S. P. Dingle, S. E. Furness, A. C. Taylor, and W. Turnbull was excused as being unavoidable.

Scotland.

July, 1903.

	Candidates.	Passed.	Failed.
Major	4	2	2
Minor	143	46	97
	147	48	99

The absence of W. Purvis Anderson, A. Crosbie, J. MacIntosh, and Harry Shepherd was excused on medical certificate.

Mr. Glyn-Jones asked if this was a special report from the Boards of Examiners, or was it an ordinary routine report?

The President said it was not a special report.

Mr. Glyn-Jones said he was somewhat in the dark as to how the matters referred to in the report came to be dealt with. For instance, in Section 1 of Paragraph 3 there was a reference to some suggestion in regard to the Matriculation Examination, but it did not state where the suggestion originally came from. He did not remember the matter having come before the Council. Then Section 2 of Paragraph 3 had apparently been initiated by the Board of Examiners for England and Wales. Had that matter been remitted to the Board of Examiners for England and Wales for consideration?

The President said he understood the matter was raised by the Scotch Board as far back as 1899.

Mr. Glyn-Jones said he only wished it to be made quite clear what were the separate functions of the Boards of Examiners, and how the matters reported on had arisen.

The Vice-President said the questions had been before the Council previously, and had been referred to the Board of Examiners for England and Wales for consideration. The Board had formed a Sub-Committee, the Sub-Committee had presented its report to the Board, and the Board of Examiners had in turn reported to the Council.

Mr. Glyn-Jones read the words, "The Board accepted the report, and recommends that the Secretary write to the London University in accordance therewith," and asked if that referred to the Boards of Examiners, or did it refer to the London Board only.

The Vice-President: The Joint Boards.

Mr. Glyn-Jones said there was nothing to indicate that the report came from the Joint Boards. It seemed to him that the whole report down to Paragraph 6 was the report of the London Board, because reference was made to the fact that they had been in communication with the Scotch Board. He thought it ought to be made quite clear whether the first two recommendations in the report were from the Joint Boards of Examiners or only recommendations from the London Board. He understood from the Vice-President that these matters originally came before the Council, and what he wished to know was whether those matters were referred to the Board of Examiners for England and Wales, and if to the London Board what the Scotch Board had to say about the matter.

Mr. Hills said in regard to the Matriculation Examination of the London University, it was referred to the London Board in the first instance.

Mr. Glyn-Jones: Yes, but this is an examination to qualify for registration as an apprentice or student, and is a matter for the Scotch Board to consider, as well as the London Board.

Mr. Hills: That is so, and later on these valuable recommendations will be considered by the Joint Boards.

Mr. Wootton said, from the wording of the report, he gathered that the Scotch Board had not considered the matter.

The President said he believed that at the last meeting of the Council there was a communication from the Scotch Board on the question.

Mr. Storrar said that what Mr. Glyn-Jones meant was that the paragraphs in the report should distinctly inform the Council what Board was referred to, and in the present case it should state that they were the recommendations of the examiners in London.

Mr. Glyn-Jones: Examiners for England and Wales. Continuing, he said that since receiving the report in question he had spent some little time in going into the matter, with a view to finding out, as far as possible, what was the position of affairs. Here they had a recommendation of the Board of Examiners for England and Wales, recommending that the Secretary should write to the London University in accordance therewith. It seemed to him that the joint Boards of Examiners had the power to frame regulations, and that those regulations must be submitted to the Council for approval, and the initiative of drawing up the regulations was the work of the Boards of Examiners. But things did not run as smoothly as they might. Here was a report in which the English Board wrote to the Board in Scotland upon the subject of the division of the Major Examination. And what did the Board in Scotland say? Very politely they said, in effect, "We told you this two years ago"; and they were also careful to point out that this brilliant suggestion came from the Board in Scotland. What he wished to emphasise was that it was a pity there should be any occcasion for communications of that kind. And that brought him back to the difficulty which the Council attempted to solve some few months ago, when the appointment of a joint committee of the members of the Council and representatives of the Board of Examiners for England and Wales and of the Board in Scotland was discussed, and the Board in Scotland refused to appoint representatives. To put the matter in order, he would move:—

> That these reports be referred to a committee, to be specially appointed by this Council, for their consideration and report.

If it was thought wise to make that committee a permanent committee, he personally should be glad, for he would like the Council to appoint its own committee, dealing specially with the examinations. Such a committee would have power to call in and consult with representatives of either or both Boards. At any rate, he thought that before the Council dealt with the recommendations in the reports under consideration they ought to be referred to a special committee, because one of the matters referred to was exceedingly important—viz., the question of the division of the Major Examination—and, by the way, he had always heard that there was some great legal difficulty in dividing the Minor Examination, and, so far as he could see, if there were a legal difficulty, there would be the same difficulty in regard to the division of the Major Examination. But, on the other hand, if they could divide the Major Examination without further legislation, it was quite competent to divide the Minor without further legislation. His object in rising was to move that these two reports——

Mr. Storrar: There is only one report.

Mr. Glyn-Jones said he called them two reports, because there was the Sub-Committee's report, and also the report of the Board of Examiners for England and Wales.

The President said he should be glad if Mr. Glyn-Jones would confine himself to the Sub-Committee's report.

Mr. Glyn-Jones said what he had said in regard to the first part of the report applied to the second part, and he would like the whole of the report to go to a special committee, appointed by the Council, for careful consideration, that committee having full power to call in and to consult with representatives of either or both of the Boards of Examiners. There was in the reports very significant matter indeed, and if it was thought wise to discuss fully the question of the division of the Major Examination in open Council, before it had been considered in committee, he was quite prepared to discuss it.

Mr. Storrar repeated that there was only one report.

Mr. Glyn-Jones said at the end there was a report on the examinations in Scotland, and he should like those figures to come before the proposed committee, because those figures showed a state of things which required the consideration of the Council.

Mr. Carteighe pointed out that it was the duty of the Boards of Examiners to frame regulations for the conduct of the examinations, and that the Council had no power to draw up regulations.

Mr. Glyn-Jones: Then why has this matter come before the Council?

Mr. Carteighe: Because it is part of the procedure, and, if you will go further, you will see that the Secretary was *de facto* instructed to write to the London University, and the Council's duty is to approve of that.

Mr. Glyn-Jones: Or disapprove.

Mr. Carteighe said the first two paragraphs had nothing to do with the Council at all, as they were clearly within the province of the Boards. They also suggested that there should be a division of the Major Examination; in regard to that point the Council should ask them to draw up regulations, and then the Council could discuss them.

Mr. Wootton said the Board did not instruct the Secretary to write to the London University. It was for the Council to decide what should be done. The report dealt with extremely important matter which could not be discussed without a good deal more information. The Board of Examiners for England and Wales was determined to maintain Latin as one of the subjects of examination, while the medical boards had determined that it was no longer necessary, and he thought the Council ought to know on what grounds the medical boards had come to that conclusion. Then there was the matter of geometry instead of Euclid. There should be a clear understanding whether the Council has any voice in the matter; according to the wording of the report, the Council has.

Mr. Storrar seconded Mr. Glyn-Jones' motion. He said he was rather surprised at the statement made by Mr. Carteighe. The initiative must come from the Boards of Examiners, and if the two Boards differed, the Council should step in, and had done so in times past. With regard to the report before the Council, he thought the first two paragraphs of the Sub-Committee's report, dealing with the London University and the Preliminary Examination, contained matter which required to be approved by the Scotch Board before any action could be taken. The two examining Boards must act together in any alteration that was adopted. He held that according to the regulations and the Bye-laws the Boards must concur.

Mr. Carteighe: Undoubtedly, and the Scotch Board has already concurred.

Mr. Hills said he thought a good deal was being made of a matter about which the Boards were practically unanimous. He took it that the President and Vice-President, as *ex-officio* members of the Boards of Examiners, had been present at one or other of the meetings of the Boards at which these matters were discussed, and that they were there as representatives of the Council as well as *ex-officio* members of the Boards. It seemed to him that these matters were all capable of solution, and that the President or Vice-President could suggest a joint meeting of the two Boards, when subjects which required to be dealt with could be threshed out. Without discussing the advisability of the division of the Major Examination or the retention of Latin in the syllabus, there were such things as Bye-laws, and it was necessary that the general terms of the Bye-laws should be recognised. He hoped that the President would be able to see his way to invite representatives of both Boards to meet and discuss these matters.

The **President** said the only question before the Council was whether there had been any communication with the Scotch Board in regard to the communication with the London University, and he was not at all sure that there had not been some correspondence on the subject.

The **Secretary** pointed out that in May last the Scotch Board agreed with a resolution that the certificate of the University of London should be accepted provided that Latin was one of the subjects. It also agreed that geometry should be allowed in place of Euclid.

Mr. **Hills** said the present syllabus for the Major and Minor Examinations was very much altered when he was President, and without egotism he might say that he was able to bring the views of the Boards into line whenever they were in any way divergent, before the matter was brought before the Council. And that was brought about largely by means of those who were *ex-officio* members of the Boards of Examiners.

Mr. **Robinson** said he hoped something of the kind suggested by Mr. Hills would be done now. The difficulty seemed to be that, in regard to matters dealt with in paragraphs one and two, one matter had been submitted to the Board in Scotland, and last May they expressed their accord with the London Board.

Mr. **Glyn-Jones**: On one point. There is another matter dealt with in the second paragraph.

Mr. **Robinson** said the Secretary had not written to the London University yet, and if the Council did not agree he would not write. The report came before the Council for acceptance or disagreement.

Mr. **Storrar**: This paragraph says "the Board accepted the report." I hold that in all these documents it should be the "Boards"—plural and not singular.

The **Secretary** pointed out that this was a report of the Sub-Committee of the Board of Examiners in London to its own Board, and the Board had now informed the Council what it proposed to do.

Mr. **Robinson**: What the Board has done has been to accept the report of its own Committee, and the Secretary is to write to the London University. The Scotch Board might say that they will not be a party to this, although they agreed to it last May. The Council did not want to accentuate this matter.

Mr. **Storrar** said he thought they were wandering from the main point. An exceedingly important change was proposed by the Board, and it should be discussed by the Council.

Mr. **Glyn-Jones** said he had evidently not made his meaning clear to all his colleagues. This report brought to an issue difficulties which members of the Council knew existed, and he thought his motion went to the root of the whole difficulty. With all due respect, he did not agree with what Mr. Hills had said. He did not agree with throwing the onus of a thing of this kind upon any two members of the Council, whether President or Vice-President. These matters were statutory matters, and should be dealt with by proper machinery, which should be kept running from year end to year end, and the suggestion made some time ago by Mr. Newsholme rather supported his contention that there was need for someone or something which should come before the Council as a recommendation from the joint Boards of Examiners. In spite of what the Secretary had said in dealing with that part of the report which stated "The Board accepted the report and recommendations that the Secretary write to the London University in accordance therewith," his view was that the Secretary would not be acting quite properly without the concurrence of the Board in Scotland. If this matter had been approved of by the Board in Scotland it would have been a reasonable thing to have said so on the agenda, but at present he did not find that the matter had ever been before the Board in Scotland. In regard to what Mr. Carteighe said, Bye-law 10, at page 67 of the Calendar, stated quite clearly that

> The Boards shall conduct all examinations according to the Bye-laws in force in that behalf, and according to such regulations as shall be made or adopted by them from time to time, and as shall have been approved by the Council.

If regulations were to be based upon this report, those regulations would come before the Council for approval, and all he asked was that the whole thing should be referred to a committee, which should advise the Council whether it ought to approve or ought not to approve of the proposed regulations. He did not think it was wise to divide the report up and say some of these things have been dealt with by one body, and some by another body. He, therefore, moved that the reports be referred to a committee to be specially appointed by the Council, for their consideration and report on the whole report.

The Council then went into Committee and, on resuming, The **President** said it was moved by Mr. Hills and seconded by Mr. Robinson—

> That the reports of the Boards of Examiners be received, and that the Boards be requested to conjointly consider the various modifications and alterations therein suggested, and report to the Council in due course.

Mr. **Glyn-Jones** said he thought that was calculated to bring about the same result as his own motion, and he would, therefore, withdraw it. At the same time he wished to say that as a result of Mr. Hills' resolution there would be a joint report from both Boards on the subjects referred to, and when that report came before the Council it would have an opportunity of considering the advisability of appointing a committee to deal with the matters in that report.

Mr. **Storrar**, as seconder of Mr. Glyn-Jones' motion, intimated that he also was willing to withdraw.

The **President**, in putting Mr. Hills' motion to the vote, said he agreed with Mr. Glyn-Jones that it was desirable to have a Standing Committee of the Council to deal with any matters connected with the examinations that may arise.

The motion was then carried.

Resignation of Mr. Butt.

The **Secretary** reported the resignation of Mr. E. Northway Butt—one of the Society's Auditors—pursuant to Bye-law XVI., Sub-section 2.

The **President** said Mr. Butt had been an Auditor for eleven years, and had done excellent service for the Society and his colleagues. He had, in addition to attending the official audit, for several years made a practice of attending at the office for three or four days before the audit, and, by a large amount of preliminary work, enabled the actual audit to be completed in one day. Mr. Butt proposed to be absent from England in the early spring, and would therefore be unable to relieve the other auditors as he had done in other years. He (the President) thought the Council was very much indebted to Mr. Butt for the eleven years of very efficient and arduous service he had rendered to the Society as Auditor. He would move, therefore:—

> That this Council accepts with regret the resignation of Mr. E. Northway Butt from the post of Auditor which he has filled for the last eleven years, and that the cordial thanks of the Council be given to Mr. Butt for the very great services he has rendered to the Council during that time.

Mr. Hills seconded, and it was carried unanimously.

Appointment of an Auditor.

On the motion of Mr. Carteighe, seconded by Mr. Robinson, Mr. Isaiah Bourdas was appointed an Auditor in the place of Mr. Butt, resigned.

Herbarium Competition.

The following report on the Herbarium Competition was read:—

> Gentlemen,—Three herbaria have been sent in this year to compete for the Society's Silver Medal.
>
> The best is that of Mr. Norman S. Goodyer, of Sheffield. His plants are well chosen, carefully preserved, and properly mounted, and are so displayed as in most cases at once to show the characteristics of the natural orders to which they belong. I have pleasure in recommending the award of a silver medal to Mr. Goodyer.
>
> Another herbarium, but little inferior in merit, is sent by Mr. Chas. Garnet Trinder, of Cirencester. I suggest that a bronze medal be awarded in this case.
>
> The third collection, sent by Mr. Edward Joseph Thompson, of Edinburgh, is also very creditable. His plants are not quite so well displayed as those of his competitors, and in one or two cases are not correctly named. I think the herbarium should receive some recognition, and I suggest a certificate of honour.—I am, Gentlemen, yours faithfully,
>
> J. Reynolds Green.
>
> The President and Council of the Pharmaceutical Society of Great Britain.

On the motion of Mr. Currie, seconded by Mr. Harrison, the report was adopted, and the following awards were made:—

Silver Medal	Norman S. Goodyer
Bronze Medal	Charles Garnet Trinder
Certificate of Honour......	Edward Joseph Thompson

School of Pharmacy Appointments.

On the motion of Mr. Carteighe, seconded by Mr. Harrington, the following appointments in the School of Pharmacy were made for the ensuing sessions:—

Harold Deane ...... J. T. Cart	Demonstrators in the Chemical Laboratories
R. R. Bennett.... ..	Demonstrator in Pharmaceutics
Eric Drabble, D.Sc.	Demonstrator in Botany

Proposed Compendium of Medicines.

Mr. Carteighe, having previously given notice of his intention, moved the following:—

> (*a*) That a compendium of medicines in general use, not included in the British Pharmacopœia, with such information as to Laws, etc., as may be useful to chemists and druggists, be published annually by authority of the Council, the first issue to be published in January next.
>
> (*b*) That the Journal Committee be instructed to consider the best method of carrying out the foregoing resolution, and to report to the Council at its meeting in October.

Mr. Carteighe said it was possible that some of those present might think that this was a subject upon which he had made up his mind for a specific purpose. But he might say that more than thirty years ago he first discussed with his old friends, Mr. Reynolds and Mr. Schacht, the advisability of compiling some such book as he now suggested, and the subject was broached from time to time till their death. The only thing that was done officially was the Formulary of the Conference, which was a somewhat limited book, and was rather the result of research work in pharmacy and improved formulæ than a mere compilation. Every one knew that forty years ago there were a great many books of formulæ useful to chemists and druggists and apothecaries. Those books were dead, and new books had come, with scraps here and diaries there, but there was nothing authoritative on that enormous class of medicines known as the domestic medicines of the chemist and druggist. Moreover, the present medical man and the chemist and druggist knew less about the compounding of medicines than ever they did, nor was the British Pharmacopœia a guide to them. It was a fact that the medical man had not the time to learn how to prescribe properly, much less to learn how to compound medicines, nor had he any book containing particulars of medicines other than those in the B.P., that he could refer to as illustrations of what he ought to prescribe. As times had gone on there had been a series of prosecutions under the Sale of Food and Drugs Acts, and a question of standards had been raised, which might almost be called trivial, and it seemed to him, on that ground alone, that the time had come for the Council to take the matter up, irrespective of the question which had been brought forward by the decision of Somerset House. He suggested, therefore, the compilation of a compendium of medicines to be issued under the authority of the Council, with, perhaps, some of the matter now given in the Calendar of the Society. The price to be charged for it or what it would cost he did not refer to, but would suggest that it be referred to the Journal Committee, which was at the present time a strong committee, and had access to all the information required. If the Council approved of that he should propose that the matter be considered at once, and that a complete report be presented to the Council in October. There was an advantage in fixing a certain time, as in work of this kind it was desirable to be compelled to finish within certain limits. It might be a question for consideration whether, after the first issue or the second, it would be desirable to have it annually, but, from his point of view, if the cost was not excessive, he should like it to be edited annually and brought up to date, so as to make it a formulary for every practising chemist and druggist, and apothecary.

Mr. Robinson said he had much pleasure in seconding the motion proposed by Mr. Carteighe. He was very glad to see the notice of motion on the agenda, and Mr. Carteighe, in his usual way, had put the main points clearly before the Council. The Society was the right authority to issue such a book, and he hoped it would not only prove to be an advantage to the chemist and druggist, but also to the Society. It would be recognised by Somerset House, and, in regard to the inclusion of matter from the Calendar, he thought it might be made a book of immense value to every chemist and druggist. He could not imagine for a moment that there could be any possible objection to the proposal. It was interesting to learn from Mr. Carteighe that he and others had the compilation of such a book in their minds thirty years ago. He well remembered in his early days how they looked to Beasley and to Grey for information, and although they still had copies, those books had fallen into disuse, and it would be very useful to have a book issued by the Society. It would be a step in the right direction.

Mr. Cooper said he felt convinced a book of that kind would not only be extremely useful for chemists and druggists, but the compilers could make it an extremely valuable and useful adjunct to the medical profession. He was sure he should look forward to its publication with pleasure.

Mr. Corder said it had often been stated that the Council was doing nothing for the advantage of pharmacists, but he felt that this was a movement that would be of great benefit to the Society and to chemists and druggists generally. He was very glad that Mr. Carteighe had fixed on an early date for the publication of the book, because in view of the time-limit fixed by Somerset House, it was very desirable that something should be in the hands of the trade by January 1. He thought such a book as that proposed would enable chemists in the country to put up medicines about which there was some considerable doubt as to their immunity or otherwise from stamp duty.

Mr. Hills said he should be very sorry to strike a discordant note, but he should just like to say that he thought Mr. Carteighe was a little sanguine about the matter, and when he talked about January he (Mr. Hills) did not know whether he quite realised the amount of work to be done. In regard to the word "compendium," he had not looked up the meaning of the word, and was not quite sure what it included. There were already several domestic medicine books, but he found that even if they were somewhat up-to-date, they were not altogether satisfactory. Of course, a book of the kind proposed would have a certain amount of authority, and would have a kind of official mark attached to it, which books compiled by individuals would not have; but it struck him that at the present moment the Council had not much information as to the character of the proposed work. If it was to be a book recognising half the formulæ of the chemists and druggists of the country, it would be a very large volume. In any case, it would bear a semi-official character, and the Council must not appear in any way to compete with the official handbook of medicine—the B.P.

Mr. Harrington heartily supported the motion of Mr. Carteighe. He could not conceive of anyone conducting a dispensing business, who had not seen the necessity of a book of this kind. With regard to the word "compendium," he supposed it meant a short, abbreviated way of treating these matters. He believed such a book as that proposed would not only be a good guide to the chemist and druggist, but also to the medical profession.

Mr. Glyn-Jones said he sympathised with Mr. Carteighe at having to move this motion at this particular juncture. Some features of the proposed book Mr. Carteighe had very skilfully kept in the background, but whatever Mr. Carteighe meant, the majority of their friends would take it as being an answer to the requests which were going about for some means which would enable chemists to take advantage of the exemption for chemists in the Medicine Stamp Duty Acts. He had been taught by Mr. Carteighe that the functions of the Society were not such as would enable it to produce a handy guide to domestic medicine, and he was afraid that if the members were looking forward to this "Compendium" as something which the *Pharmaceutical Journal* had talked about—as a book of well-known, admitted and approved formulæ for the purposes of the Stamp Act—if Mr. Carteighe had anything to do with the compilation of the book they would be disappointed. He thought that should be made quite clear. He believed that a chemist, in selling his own cough mixture and antibilious pills, was acting within his rights, but he had always been taught that the Council's correct attitude was to close its eyes to that kind of thing. He was not sure that there was any need for such a book as would be in the minds of the people who would read the account of the proceedings that day. Mr. Humphrey had read a paper at the Conference last week in which he said that the Inland Revenue authorities had made an answer which he (Mr. Glyn-Jones) thought was quite gratuitous, that any set of formulæ which might be produced by the P.A.T.A. or the C.D.A. would not be recognised by them.

Mr. Carteighe: I have not seen the statement.

Mr. Robinson: Nor I.

Mr. Glyn-Jones said that was a statement made by Mr. Humphrey, and it was a statement of an answer by the Board of Inland Revenue. That answer was quite gratuitous, because no suggestion had been made for such a book to be published by either of the two bodies mentioned, and he thought it was unusual that a department should adopt that method of making an announcement. A statement had also been made that such a book must be compiled by an official body—but that was nonsense. It must be a well-known, admitted, and approved remedy, and if any association or body of persons gave time and trouble to prepare a book of such remedies, it was not for Somerset House to say whether they recognise those remedies or not. He was quite prepared to say that the Journal should investigate and refer from time to time to formulæ which had been found to be satisfactory; but it was not for the administrators of an Act to be the legislators also. Mr. Carteighe would quite understand that at the present moment this matter was before the trade, but he (Mr. Glyn-Jones) did not think such a book as had been proposed was necessary. He believed there were plenty of formulæ at hand, and that any chemist, if he had any gumption at all, could send his formulæ up to the Journal, and do it in a more or less unofficial manner. But, if such a book was necessary, he should be surprised if the Council was able to produce such a book as would meet the requirements of those who would wish to comply with the requirements of the Stamp Acts. He should cordially support the production of any collection of formulæ which would be useful to the trade and to dispensing chemists, but he wished to issue a warning that such a book would not meet the requirements of those who had written to the Journal for the production of a book of well-known, admitted, and approved remedies. He did not wish to be misunderstood, but he did wish to say that he did not know of any suggestion to issue such a book by the P.A.T.A. or the C.D.A., and he thought that was partly because, as those bodies had been advised, there was no necessity for such a compilation, inasmuch as there were already in existence quite enough published formulæ which could be referred to by the trade. Subject to the reservation he had made, he quite approved of producing a book of formulæ which would be useful to the dispensing chemist, but he did not think it would be possible to produce such a book as the trade were, rightly or wrongly, crying for.

The President: I do not think the editor of the *Pharmaceutical Journal* read a paper at the Conference.

Mr. Glyn-Jones: At the Federation. There is nothing in the suggestion that the Board of Inland Revenue will recognise a book published by this Society. The Board of Inland Revenue will have to recognise what the King's Bench Division recognises, and that is something which the law recognises.

Mr. Gifford supported the motion. He thought there was great necessity for a cheap authoritative book of domestic medicine. One of the greatest evils chemists had to contend with was the evil of quackery, and that was his principal reason for supporting the introduction of an authoritative book of formulæ. As far as he understood the suggestion, domestic medicine would come very largely into such a book, and a book of authoritative formulæ of that description would do a very great deal to counteract the quackery which chemists and druggists have to face, and he thought the book would receive the support of the trade. He did not see any great difficulty in its compilation. For instance, local associations were very greatly concerned as to the production of an authoritative book which would meet their requirements, and he happened to know that a member of the Council was prepared to give the results of fifty years' experience. He saw no difficulty whatever in producing the book by the date named, January next.

The President gave the motion his very hearty support. He confessed to surprise and delight that his friend Mr. Carteighe was the sponsor of the suggestion, because, if he would allow him to say so, it would come with an authority from him which would be very valuable. He was greatly relieved when he read the notice of motion, for the correspondence which he received and read every day dealt with the very question under consideration, and he was hopeful that the production of an authoritative compendium of this kind would very largely meet the complaints of his correspondents. He should not be personally satisfied if the book dealt simply with the question of formulæ of domestic medicines. His great want was to see the medicine stamp duty question settled, and he believed Somerset House would recognise the value and weight and the authority of a compendium issued by the Society. The question must be gone into at once, because there was the recess before them, and if they were to produce the first edition in January, there was no time to lose.

The motion was then put and carried.

Mr. Glyn-Jones: Are the members of the Journal Committee to be excused all other business?

Mr. Carteighe: I suggest we meet to-day at three o'clock, after lunch.

Appointment of a Divisional Secretary.

Mr. William Elliott, of Coldstream, was unanimously appointed Divisional Secretary for the Kelso District.

Seal of the Society.

The Secretary was authorised to affix the seal of the Society to a lease granted to Mr. W. G. Austin, one of the Society's tenants on the Shortlands property, in respect of a piece of land adjoining his house.

Proposed Post-Graduate Lectures.

Mr. Glyn-Jones, having previously given notice of his intention, moved—

> That the General Purposes Committee be asked to consider the advisability of establishing post-graduate lectures on the Sciences included in the Minor Examination, as applied to the present-day business of the chemist and druggist.

He said that, however, much they might regret the fact, it was a fact that the business of the chemist and druggist, like everything else, during the past twenty years had undergone considerable change, as had also the application of the sciences taught in the Society's School and in which candidates were examined. He believed he was right in stating that a very large proportion of the men trained in the various schools of pharmacy had no opportunity of putting into practical use the sciences in which they had been trained and examined. He believed, like Mr. Leo Atkinson, who took a more rosy view of the future of men who took the trouble to acquire a scientific education, that such an education as that required for those who passed the qualifying examination could be better applied. Instead of setting up in their minds an ideal of what the thing called pharmacy ought to be, they should ascertain what would be the demands of the public upon these educated men, and then teach them to apply their knowledge so as to enable them to make a living. Mr. Glyn-Jones went on to refer to chemistry as applied to agriculture, horticulture, photography, and the analysis of comparatively simple things, such as urine, and he suggested that the Council might engage capable men to deliver a course of lectures in the different subjects, including optics. He maintained that it was the duty of the Council to put those who passed the Society's examinations in the way of practically applying the knowledge they had to acquire. He thought the matter might be worked through the local associations. The lectures might begin in London, and then any of the local associations which were prepared to take the matter up could arrange for the lectures to be delivered at meetings of the associations. He did not wish to go into details, but simply to sketch roughly the outline of a scheme which would enable chemists and druggists to meet the demands that would undoubtedly be made upon them.

Mr. Harrington seconded the motion because he thought it was a matter which might be most usefully sent to the General Purposes Committee for consideration.

Mr. Carteighe: What you suggest are really University Extension lectures, on similar lines to those given under the auspices of the County Councils, who send lecturers to various districts.

Mr. Glyn-Jones: That is so.

Mr. Southall said he should have thought it would be better for the lecturers to begin in the country rather than in London.

Mr. Glyn-Jones: I am pleased to hear there will be a demand for them.

Mr. Hills said, as he understood the motion, it was that the matter be referred to the General Purposes Committee to consider the workability of the scheme and other matters of detail. He could quite conceive that there were difficulties ahead, but they were difficulties which could be surmounted. A great difficulty would be to get the right men to give the necessary knowledge.

The Vice-President said the acceptance of this motion would not bind the Council to the principle of the scheme.

Mr. Hills: It is a kind of fiscal inquiry business.

Mr. Carteighe pointed out that a similar scheme was once tried, and it was given up because the London members objected to others getting benefits from the Society that they did not participate in.

The President expressed approval of the principle of the scheme, while

Mr. Wootton thought that much of the information Mr. Glyn-Jones suggested should be given by lecturers could be obtained from a shilling book.

Mr. Cross was in favour of the matter being referred to the General Purposes Committee. He could not agree with much of the evidence which had been given before the Departmental Committee on Poisons. There were many chemists throughout the country who had made a study of the requirements of horticulturists and agriculturists in regard to insecticides and agricultural poisons.

Mr. Gifford pointed out that for the Society to engage lecturers to teach chemists the subject of optics would be most objectionable, both ethically and practically, from the point of view of the medical profession. He thought such a suggestion as that made by Mr. Glyn-Jones was a grave reflection upon the Society's examinations. It seemed to suggest that the remedy lay in making the examinations more practicable.

Mr. Cooper having pointed out that the teaching of optics might very well be left in the hands of the Spectacle Makers' Company,

The motion was put and carried.

Correspondence.

The following correspondence was taken as read:—

> (*a*) Letters of thanks from the Editor and members of his staff for the appointments made at the last meeting.
>
> (*b*) A letter from the Vinegar Brewers' Association, expressing the hope that the Council will co-operate in bringing pressure to bear upon the Government in connection with the establishment of a Court of Reference under the Food and Drugs Act.
>
> (*c*) A communication from Hucknall Torkard, urging the Council to secure the removal of the irksome restrictions imposed by the Stamp Acts.
>
> (*d*) A resolution from the London Chemists' Association (North London Branch), soliciting the Council to

issue a book of formulæ through the medium of the *Pharmaceutical Journal.*

(*e*) A letter from Mr. A. H. Waddington, reporting on the Sanitary Congress at Bradford.

Law Committee.

The report of this Committee was taken in committee, and, on resuming, the Registrar was authorised to take proceedings against the persons named.

This concluded the business of the Council.

REVIEWS AND NOTICES OF BOOKS.

'Hand Camera Photography.' By Walter Kilbey. Pp. 124. Price 1s. nett (cloth 2s. nett). London: Dawbarn and Ward, Limited, 6, Farringdon Avenue, E.C. 1903.

Until recently it has been the custom of authors of photographic text-books to protest in a mild sort of way against the use of hand cameras. But it is safe to assume that at the present time there are many more hand cameras in use for outdoor work than there are "stand" cameras. Hence a book specially devoted to hand camera photography is almost a necessity for the amateur photographer who is desirous of learning as much as possible about his hobby. Mr. Walter Kilbey in the book under review has done his best to meet that want, and has presented in the space of 124 pages some of the lessons he has learnt during an extensive experience with a hand camera. The book is full of useful information, and the amateur who studies it intelligently cannot fail to profit thereby. Attention may perhaps be directed to page 31, line 3, where a slight error occurs, "Page 21" being mentioned, presumably instead of "Fig. 21," at page 38.

'Manual of Intragastric Technique.' By George Herschell, M.D. Pp. 166. Price 7s. 6d. London: Henry J. Glaisher, 57, Wigmore Street, W. 1903.

The task which Dr. Herschell has set himself in this manual is to assist physicians in the selection, arrangement, and efficient use of the necessary apparatus for the diagnosis and treatment of diseases of the stomach. Chapters are devoted to the extraction and examination of the contents of the stomach, as few tests as possible being given, and those only which are suitable for daily clinical use without the necessity of a fully-equipped laboratory. The concluding chapters of the book deal with various intragastric methods of treatment which have from time to time been suggested and employed, and with the application of electricity to the stomach.

'Polyphase Currents in Electrotherapy.' By George Herschell, M.D. Pp. 44. Price 2s. 6d. nett. London: Henry J. Glaisher, 57, Wigmore Street, W. 1903.

This is a paper read before the British Electrotherapeutic Society, in February of this year. Dr. Herschell has been one of the first to study the application in therapeutics of polyphase electric currents, and in this paper he deals particularly with the treatment by this means of neurasthenia, constipation, and acute dilatation of the stomach. Professor Sylvanus Thompson has aided the author with valuable suggestions as to the construction of the machine used.

'The Pocket Therapist,' A Dictionary of Disease and Its Treatment. By Thomas Stretch Dowse, M.D., F.R.C.P. 3rd Edition, revised and enlarged. Pp. 411. Price 6s. 6d. nett, or interleaved 8s. 6d. nett. Bristol: John Wright and Co.

The object of the author is to provide a concise manual of modern treatment and an aid to memory for students and practitioners. It differs from previous editions in the fact that the medical aspect of disease has been brought more prominently into review. The most recent ideas in clinical work have also been embodied, although Dr. Stretch Dowse has been at pains to avoid reference to the new remedies which flood the market, unless they have borne the test of experience as to their value. In spite of a certain lack of scientific method in writing prescriptions (*e.g.*, Mix et adde), and traces of originality in the spelling of the names of some drugs, such as podophylin, the matter is, from a literary standpoint, good, and, as far as concerns therapeutics, sound.

CARDIFF AND DISTRICT PHARMACEUTICAL ASSOCIATION.

ANNUAL PICNIC.

The annual picnic took place on Wednesday, August 5, and Llantwit Major was the place selected for the outing. Llantwit Major is situated about eighteen miles from Cardiff, in a south-westerly direction, near the sea. It is interesting as being the site of the earliest British university, and dates back to between the fourth and fifth centuries. A Roman villa was unearthed a few years ago by the Cardiff Naturalists' Society, and a beautiful pavement brought to light, together with other special features of Roman occupation. The members of the Association, with their lady friends and visitors, assembled at the Riverside Station of the Barry Railway at 1.52 on Wednesday afternoon, and proceeded to Llantwit Major. The party included:—Mr. Jabez A. Jones (President), Mrs. and Miss Jones; Mr. Robert Drane, ex-President; Mr. W. R. Hopkins (Barry), Vice-President; Mr. H. Gerhold, Hon. Secretary; Mr. and Mrs. Hagon; Mr., Mrs. and the Misses Mumford, Mr. and Mrs. Coleman, Mr. Templar Malins, Mr. Lee Jones, Mr. and Mrs. Fargher, Messrs. Furnivall, Watts, Williams, Rees, Thomas, Parker, Jones, and others. Arrived at Llantwit the party walked to the church, which Mr. Robert Drane, the archæologist of the party, had undertaken to give a short description of, and he prefaced his observations by remarking that there was no building of the kind that he knew of about which so much difference of opinion prevailed. He considered that what was called the church consisted really of three churches, placed longitudinally to each other, and that the one in the middle which he first took was the college or monastic one; the eastward building was the parochial church, and the westward was a private chapel of the Raglan family. There were some beautifully inscribed monuments and tombs in the monastic building, but Mr. Drane held were not there originally, but had been put there at a later date; there were some traces of Norman work, and it was probably built about the tenth century. In the parochial church was a quite unique reredos and altar, around which the processions could perambulate, a door being on either side of the altar, with a passage behind it. A good Norman font was pointed out, also a piscina for cleansing the sacramental vessels, and a squint for people to see the elevation of the Host. The stem of Jesse forming the moulding of a window was much admired. After visiting the church, the party proceeded to partake of a high tea, which was much enjoyed. A recognition of Mr. Drane's kindness in giving such an interesting description of the church was carried by acclamation, upon the proposition of the President. A pleasant walk of a mile or so to the sea was the next item on the programme, and here the inevitable cameras made their appearance, followed by quoits and rounders for the younger members of the party. Later on, dusk setting in, the members and ladies assembled in the drawing-room, and music and singing were indulged in until train time arrived, and all wended their way to the station, having enjoyed a pleasant afternoon and evening, the weather being delightful.

FEDERATION OF LOCAL PHARMACEUTICAL ASSOCIATIONS.

ANNUAL MEETING.

Bristol, Friday, July 31, 1903, at the Royal Hotel, Mr. W. L. Currie (Glasgow) in the chair, and there were also present Messrs. G. T. Turner (Bristol), R. Feaver Clarke (Gravesend), H. Antcliffe (Sheffield), and Geo. F. Merson (Newcastle-on-Tyne), Hon. Secretary and Treasurer, members of the Executive Committee: Messrs. R. B. Betty (London Chemists' Association), W. Watson-Will (London Chemists' Association), R. H. Jones (London Chemists' Association), W. S. Glyn-Jones (London Chemists' Association), W. Giles (Aberdeen Pharmaceutical Association), J. F. Tocher, East Aberdeenshire Chemists' Association), F. Pilkington Sargeant (Leeds and District Chemists' Association), A. Hanson (Bradford Chemists' Association), J. A. Jones (Cardiff and District Pharmaceutical Association), R. M. Ewell (Dover Chemists' Association), A. E. Hobbs (Tunbridge Wells and District Chemists' Association), W. Herbert Woods (Plymouth, Devonport, Stonehouse, and District Chemists' Association), F. E. Bilson (Bournemouth Pharmaceutical Association), T. Maben (Glasgow), H. Kemp (Manchester Pharmaceutical Association), A. J. Pidd (Manchester Pharmaceutical Association), R. W. Silson (Bradford Chemists' Association), J. Rutherford Hill (Edinburgh Chemists' Association), J. T. Collis (Clifton), W. B. Cowie (Edinburgh Chemists' Association), P. Stevens (London, N.W., and Bournemouth Associations), A. Goldthorpe (North Kent Chemists' Association), G. Squire, G. T. W. Newsholme (Sheffield Pharmaceutical and Chemical Society), G. Robertson (Glasgow and West of Scotland Association), C. Symes (Liverpool), Victor Say (Benalla, Victoria, Australia), W. Cummings (Forfarshire), G. Foggan (Newcastle-on-Tyne), W. Parsons (Beckenham, Kent), R. P. Rees (Dowlais), E. S. Peck (Cambridge), R. Brodie (Glasgow), C. G. Yates (Brighton), H. W. Gadd (Exeter Association), J. Humphrey (London), T. H. W. Idris (London), A. B. Anderson (Dundee), J. Russell (Dundee), Leo. Atkinson (London), J. Colman (London), T. Buxton (Clifton), F. S. Moore (Castle Cary), J. Davy Turney (Plymouth, Devonport, and Stonehouse Chemists' Association), S. J. Weston (London), J. A. Toone (Bournemouth), J. Wild (Manchester), W. F. Wells (Dublin), H. E. Boorne (Bristol), and J. H. Thomson (Lochee).

The Chairman expressed to the delegates and the members of the Conference the great pleasure he had, as President of the Federation, in seeing so many there.

Mr. Merson (Hon. Secretary and Treasurer) then read the minutes of the previous meeting, which contained, among other items, the following: "A letter from the former Chairman of the Executive (Mr. Smith) regarding objectionable advertising matter circulated to the public by Burroughs, Wellcome, and Company, gave rise to a warm expression of opinion on the question of this firm's advertisements; and the Chairman and Hon. Secretary were instructed to draw the attention of the authors to the objectionable nature of the circulars referred to."

The Hon. Secretary said, with reference to the last paragraph in the minutes, it was not deemed desirable to make any reference in the annual report of the Executive Committee. The Chairman and he wrote to Messrs. Burroughs, Wellcome, and Company, and probably it was within the memory of most of the members tnat that firm sent the whole correspondence to the trade journals. The question was considered by the Executive Committee, and it was thought not policy to forward the firm's interest by perpetuating the correspondence in the journals, and so the matter was allowed to drop. He made that brief explanation to account for there being no reference to the question in the report of the Executive Committee.

The Hon. Secretary said he had received a number of apologies from different associations regretting the fact that they would be unable to be represented. He thought that was a great pity, for it was the only time in the twelve months that the local associations could really come into touch with the Executive and know what was going on. Individual apologies had been received from Mr. Branson (Leeds), Mr. R. Bremridge (Registrar of the Pharmaceutical Society), Mr. Rowsell (Exeter), and others.

The Annual Report.

The annual report, which has already appeared in the *Pharmaceutical Journal* (see *ante*, p. 110), was taken as read.

The Chairman, in moving the adoption of the report and accounts, said the first thing he wished to say was that their Executive Committee had met on two occasions in London to discuss matters relative to business; and upon both of those occasions every member of the Executive was present. It was a considerable tax upon some members who had to travel long distances, but the gentlemen they had elected to represent them had tried their best to carry out the duties imposed on them. The issue of the Departmental Committee's report on Poisons and the introduction of the Pharmacy Bill led to some difference of opinion as to who should move in this matter. It was considered that the Council of the Pharmaceutical Society ought to show some particular move as to what direction associations should take in approaching members of Parliament. They very seriously discussed that question, and they decided that before they committed their associations to any particular line of action that they should consult with the Pharmaceutical Society. That was done, and he was glad to say that they approved of the action the Committee took in sending out circulars to members of Parliament regarding the Committee of Poisons report. It was very gratifying indeed to find that the officials in Bloomsbury Square were in sympathy with the work of the Federation; and they hoped that the good feeling which had been established during the last two or three years would continue. He felt perfectly satisfied that the associations over the country could do a very great deal towards strengthening and supporting the Pharmaceutical Society, which it was very much at present in want of. Further than that, he, as Chairman of the Federation, had had an invitation from the chemists of Bradford, during the winter, to be at their annual dinner. He took advantage of their kind invitation to go to Bradford, and spent a very pleasant time there. He thought that on occasions of that kind a great deal of good came out of personal communication and personal contact with members of various associations. Their worthy Secretary had been very busy going here, there, and everywhere. Mr. Merson had been to Huddersfield, Middlesbrough, West Hartlepool, and other places, besides attending the meetings of the Federation in London. He wished to draw their attention to the paragraph in the report relative to the suggestions which had been received from several sources, indicative of a wish to have the constitution and the rules of the Federation placed on a wider basis. The result was that several resolutions appeared attached to the report as to that. He wished to say that he hoped—in the event of any discussion taking place upon any resolution on the agenda—that gentlemen would stick strictly to business. He should also like to point out that the

Executive of such a body as that could not be a very large one. Unless they were prepared to face a very considerable increase of annual subscriptions from the local associations throughout the country, it was an impossible thing for the Executive to be very much larger than at present. He wanted to call their attention to the clause in the report where it was stated that the Executive Committee desired to point out that the duty of initiating work rested with individual associations, and that the Federation was simply the organised medium of inter-communication between its constituent units. That was put in as the result of another resolution which had been sent by one of the associations, expressing regret at the paucity of communications emanating from the Federation during the past two years. The Treasurer's statement he suggested they should take as read; but he should like to point out that there was a balance due to the Treasurer of £4 3s. 10d. There were one or two subscriptions which had been paid since, which would slightly reduce the adverse balance; still, that bore out what he had been contending that a very large increase in annual subscriptions would have to be faced if the work of the Federation was to be carried on successfully.

Mr. Giles (Aberdeen) seconded the resolution.

The Hon. Treasurer explained that through some misunderstanding between the printers and himself, according to the balance-sheet the Exeter Association did not appear to have paid their subscription. As a matter of fact, Exeter paid on July 16, before that sheet was printed, so that that amount would reduce the balance to £3 13s. 4d.

The report and accounts were then adopted.

Territorial Representation.

On the suggestion of the Chairman, it was agreed to take next Mr. Tocher's paper on "Territorial Representation."

The Chairman explained that in altering the order of their agenda they did so advisedly. It was considered that the paper was sufficiently important to take a good deal of their attention, and they thought it advisable—before members present got, perhaps, a little tired—to bring it forward. The Committee had decided to have Mr. Tocher's paper then, and he had great pleasure in asking that gentleman to give them his paper briefly, and he was sure it would receive all the attention it deserved. He should like to point out that it was not a matter which they could sufficiently well discuss and digest at that meeting. He, therefore, thought it would be advisable that the matter should be referred to the associations for discussion during the coming winter session, and they might receive reports from these associations of the result of their deliberations.

Mr. J. F. Tocher then read his paper on "Territorial Representation," which will be published later.

Mr. Newsholme (Sheffield) said, as the Chairman had intimated at the commencement of the paper, it would be the most suitable thing if Mr. Tocher's paper should be remitted to the various local associations to be discussed during the coming session, and he thought that probably that would be the best course that they could pursue, though some of them that day would have liked to have taken the opportunity of discussing the magnificent and able paper Mr. Tocher had read. He did not, therefore, intend in the slightest degree to commence any discussion upon the paper, and he had risen merely for the purpose of moving that the matter should be referred to the various associations for discussion during the coming session, being sure that it would be found fit material for discussion. There was, no doubt, a good deal in Mr. Tocher's view. The scheme was a good one, and there were some possibilities that something of the kind might be carried out. He moved that the best thanks of the meeting should be given to Mr. Tocher for his paper.

Mr. Peck (Cambridge) seconded the vote of thanks, and said he really felt it a great honour to do so. He thought of all the essays and dissertations upon pharmaceutical politics that had been produced and delivered to any body of pharmaceutical men, that of Mr. Tocher's ranked amongst the highest, and he believed it would be read and continue to be read for many years to come, and perhaps long after some of those reforms had been carried out. They had listened to Mr. Tocher's paper with infinite pleasure, and he might say with pride. They knew the ability of Mr. Tocher in many scientific pursuits, but he had not the knowledge that Mr. Tocher was such a keen mathematician and statistician. He thought those mathematics were somewhat abstruse for the ordinary man, and he would suggest that the Chairman and Mr. Tocher should prepare a short abstract of the paper for circulation amongst the federated associations, as he rather feared if that intricate paper went down to some of their local associations—and in that he would include his own Association—they might feel that it was rather beyond them, and they might put it on one side. If Mr. Tocher, therefore, could prepare an abstract to make it somewhat simpler for the ordinary member, it would be a good thing.

The Chairman said he need not say that he supported with great heartiness what Mr. Newsholme and Mr. Peck had said, particularly with reference to what Mr. Peck had mentioned with regard to the preparation by Mr. Tocher of some *résumé* or extract, so as to put the subject before the members of the local associations in as simple a manner as possible.

The vote of thanks was carried unanimously.

Mr. Tocher, in replying, said he felt he could not adequately express his feelings with regard to their vote of thanks. He could only just say that his mind was somewhat built on the lines of a very distinguished statesman—John Morley—who said at a recent meeting that he was an anxious inquirer. He felt that in everything pharmaceutical he was an anxious inquirer, and he desired to find out the root and bottom of things. He would adopt Mr. Peck's suggestion, and prepare a short abstract of his paper to be forwarded to the pharmaceutical associations.

Liability to Medicine Stamp Duty.

The next paper was one by Mr. John Humphrey (London) on "Liability to Medicine Stamp Duty."

The Chairman said he wished to indicate very specially that, in view of the enormous amount of discussion which the paper might bring forth, the great diversity of opinion which it would be sure to call for, and also the possibility of harm which might result from a very elaborate discussion at that particular time, it had not been considered advisable that discussion should take place. Mr. Humphrey had very kindly agreed to give that paper to the Federation, but at that particular time he would only give them a brief *résumé*. He was of opinion that it would be wise at the present juncture of affairs that they should not give away too much of their position, and he thought, therefore, it would be considered well that no discussion should take place on that paper, but that they should simply thank Mr. Humphrey for his remarks thereon.

Mr. Glyn-Jones said he understood that the paper would be printed and circulated among every member in the room, and he wished to say, as a member who came to the meeting, that he thought when papers of that sort were read the main object of the meeting was that they should have an opportunity of expressing their opinions upon that particular paper. There was no real object to be attained in getting a gentleman to read a paper which was put into their hands when they could read it at their leisure. He thought it was a pity it was not made known that papers of that kind were not to be discussed at these meetings. He thought that it would save time if they could read Mr. Humphrey's paper at their leisure.

Mr. HUMPHREY said it would perhaps be as well to explain how the paper came to be written. Mr. Merson had the suggestion laid before him that something ought to be said at that meeting on that particular subject, with a view to the federated associations taking the matter up, and discussing it at the earliest possible moment at the beginning of the winter session. The Secretary then asked him (Mr. Humphrey) if by any chance he could find someone who would prepare him a statement of what appeared to be the existing position of affairs, which he could present at that meeting, and have printed and distributed to the different associations. He told the Secretary he would try to find someone who would do what was necessary, and ultimately he decided to undertake the work himself. He had no idea that the paper would not be discussed at that meeting, and he had not the least objection to having it discussed, if the Chairman thought fit. Mr. Humphrey then proceeded to give the chief points in his paper, which was printed in full in last week's issue of the *Pharmaceutical Journal*.

Mr. MERSON (Hon. Secretary) said he thought it was only due to Mr. Humphrey to fully confirm the observations that gentleman had made at the outset. His position as Secretary of the Federation was to do all he could for the best interests of pharmacy, and especially the best interests of the trade section of the calling. He thought he was justified in accepting any offer which would lead to that object, and the paper they had had read justified his action, he thought. The question was one that they would devote the whole of the day, and the next one also, if they were to express their opinions on all the points raised. With all due deference he would suggest that the paper should be treated in the same way as Mr. Tocher's, viz., remitted to the local associations for consideration.

Mr. GLYN-JONES: The Chairman has so ruled. I think that is an end of it.

Mr. MERSON said the prime reason the paper was prepared was educative—that was that they might have stated certain facts in connection with the present position of the stamp question. He thought they were indebted for the statement Mr. Humphrey had made, and he moved a hearty vote of thanks to him for having prepared it and read it to them there.

Mr. TURNER seconded the vote of thanks, which was carried unanimously.

The Opening of the Meeting to all Members of Conference.

Mr. MERSON, Hon. Secretary, moved:

> That Rule 7 shall read, "That the annual meeting be open to all members of the British Pharmaceutical Conference, but only delegates representing subscribing associations be entitled to vote in the appointment of officers and executive committee, or upon any question affecting the constitution and rules."

He said his position as Secretary of the Federation enabled him to state plainly his views on the matter. He had just said that he thought the best interests of pharmacy were studied in the Federation work generally, but he thought it would be a great thing if they opened their annual meeting to all members of the Conference. They safeguarded themselves by reserving to the members of the Federation the right to vote in the appointment of officers, etc., or upon any question affecting the constitution and rules.

Mr. BETTY (London) seconded the resolution.

Mr. GLYN-JONES said he should like to move Rule 7 as in the Grimsby Association resolution, as an amendment, because it raised the whole question. He noticed that the Federation invited criticism, and he hoped they would accept anything he had to say as being meant in the kindest way, and purely in the interest of the Federation. To adopt the resolution proposed he thought would only perpetuate what he considered the present system of these meetings. It seemed to him what they wanted to aim at was a businesslike meeting, at which only those who had a right to speak and vote were those who were accredited delegates from the local associations. He thought if the Federation was to be the use it should be, that, at any rate, its conference once a year should be a conference at which accredited delegates with resolutions sent up by the local associations, and he thought it was a mistake to throw a meeting of the sort open for discussion to anyone, whether an accredited delegate or not. There might be an occasion when someone who was not a delegate might usefully address them; but in that case the permission of the meeting could be asked, and the meeting would decide. The present criticism about the Federation in the Press was that no one could define their functions, and the present programme that day rather suggested it. Mr. Merson had had to get a paper on a subject not sent up by any local association. He took it that their annual meetings should be meetings where they should discuss matters sent by their local associations, and that it should not be left to the officials of the Federation to go hunting around for papers on which there was or there was not discussion, according to the judgment of the Federation. It seemed to him that if the London Chemists' Association had a matter they wanted discussed there they should send up their resolution; and if there was a representative from that Association to support their resolution then there should be discussion. In order to do that they must, if the meeting was to be held during the Conference week, have a sectional meeting. He saw no reason why they should not have a sectional meeting in connection with the Conference, the same as was done by the British Medical Association. Then they might do some business, instead of coming there to listen to some excellent papers that they could just as well have read at their leisure. He had moved the amendment to adopt the Grimsby alteration of rule because it went some length in the direction he was indicating in putting their meetings on a businesslike footing. They would find that their meeting that day would be a kind of *ad hoc* meeting, such as they had had at their previous meeting, and they were likely to have again.

Mr. MERSON said they could not expect men who were not delegates to come and listen to the latter's wisdom without being allowed to speak themselves.

Mr. GLYN-JONES: But that is what you have expected the delegates to do this morning.

Mr. MERSON explained that an active local association might be entitled to send two delegates, but four men might come from the Association to the Conference, and they did not like to shut these out.

Mr. GLYN-JONES said there was no reason why there should not be non-voting delegates, the same as was done at the Grocers' Federation.

Mr. MERSON said they had very many good men who were not representatives of any affiliated association, who they would be glad to welcome there, and it was not worth while to make any hard and fast rule which would appear to make them feel that they were not wanted at their meetings.

Mr. BETTY said they wanted all the influence they could get.

Mr. G. T. TURNER (Bristol) said he was in sympathy with Mr. Glyn-Jones, that they should have time to discuss such papers as they had had that day; and it was an extreme regret to him that they had been unable to do so on account of their long agenda. The Executive went into the matter very carefully, and they could not see that they had time for discussion; but they had allowed these two questions to be taken out of order to meet the exigencies of the case. As he had been sitting there that morning he felt as Mr. Jones had said, that they must have a whole day for the discussion of papers. It was only fair to the gentlemen who read them that they should hear the expression of opinions from representatives throughout the whole of Great Britain. That there was no discussion allowed was not due to discourtesy on the part of the Federation, but the difficulty of finding time for it. He thought it was time they formulated some scheme, either for a sectional meeting or giving one whole day to such able papers as they had had that day. It was only by one of these means that they could do justice to the papers and make the Federation far more useful than it had been in the past. He hinted last year, at Dundee, that more time was wanted, and the reply then given was that a great many were leaving, and would like to get away early, and that it also trenched upon the time of a great many men who were taking their holiday. He could see that there were difficulties in the way of a sectional meeting when there were so many scientific papers to be read. The trade side of the question, however, of course, appealed especially to them. They were so much lectured and trodden upon by that wretched Somerset House question that he thought they must make trade questions more prominent, and give more time to discussing trade interests.

Mr. Betty thought no paper should be read without open discussion. If it was not going to be discussed it should be taken as read.

Mr. Glyn-Jones withdrew his amendment.

Mr. Giles said there was an idea among some that their meeting should be held in connection with the Pharmaceutical Conference, or some arrangement made whereby the Federation meeting might be run the same time, as a second Conference. Then the members might choose which to attend when papers in which they were interested were being read, just as they did at the Medical Association and the British Association meetings.

Mr. Feaver Clarke (Gravesend) said one of the great objects of the Federation was to create a greater interest in and to extend the power of the Pharmaceutical Society. It had occurred to him, from what Mr. Glyn-Jones and other speakers had said, and as that particular meeting of the Federation had become so important, to put forward a suggestion that a day should be devoted to that purpose at the time when they ought to meet in London for the election of the Council of the Pharmaceutical Society. He thought many people would be induced to go to London, and they could then have the papers and discuss them. They would thus have their meeting at the same time as the annual meeting of the Pharmaceutical Society.

Mr. Rutherford Hill (Edinburgh) thought it might be a matter for consideration whether they had arrived at a point when they could form a practical basis upon which to proceed. He thought that the Federation had that year made a very distinct and important step in advance in the direction of the arrangement which Mr. Glyn-Jones had suggested, that there ought to be shortly an interchange of opinions between representatives of the Federation of the Conference to see if a scheme could not be devised whereby greater time and opportunity could be given to the business of the Federation. In America what was really the Federation in England, what might be called the trade interests section of the American Pharmaceutical Society, was looked upon as a most important part. He was glad to find on the pink circular issued by the Conference this year an intimation that that Federation meeting was to be held that day. In the meantime, they had made one very good step in advance, and he had no doubt that the other steps would come in due course. He saw grave difficulties in the way of a sectional meeting, because pharmacy did not lend itself to splitting up in the same way as the practice of medicine and surgery, but that was a detail he did not propose to enter into. He thought that efforts should be made to get the recognition the Federation had received carried a little further.

Mr. Merson's resolution was being put, when

Mr. Kemp asked what was to become of the Grimsby amendment.

The Chairman said it stood or fell by the result of Mr. Merson's resolution.

Mr. Merson said he had an intimation that two delegates from Grimsby would be present, but they were not. They could see his difficulty as Secretary. He had either to let the Grimsby amendment drop, as he was loth to do, or, as Secretary, bring forward an amendment to his own resolution. There were several items in the same category. It would be necessary for him to formally move them, in order that the business might go forward. He thought it was rather too bad, seeing that the Grimsby Association had sent four amendments, that they did not send anyone to represent them, or arrange with someone to move them.

Mr. Merson's resolution was then carried.

Mr. Merson (Hon. Secretary) formally moved the following, standing in the name of the Grimsby Association :—"This Association hopes that it would be found possible for the Federation to take a keener interest in the objects set forth in this rule, and regrets the paucity of communications from the Federation during the last two years on the leading questions of the times, and hopes that means will be found for encouraging more inter-communication between different associations through the agency of the Federation."

Mr. Kemp said, to save the time of the meeting, he would move that the resolution lie on the table. He said it appeared to be useless to be constantly reiterating what was and what was not the object of that Association. It had always been stated that the purpose of the Federation was to receive suggestions from the affiliated associations for the Federation to formulate and act upon them. For the Federation to undertake the initiative had always been understood not to be its work.

Mr. Glyn-Jones seconded the resolution, which was carried.

Increase of Executive Suggested.

Mr. Merson formally moved a resolution from the Grimsby Association as follows :—"That, in view of the increased number of associations, the Executive be increased from five to seven."

Mr. Tocher said he would move that the rule should stand as it is.

Mr. Kemp seconded.

Mr. R. H. Jones (London) moved that the word "fifteen" should take the place of the word "seven."

Mr. Feaver Clarke said that, if carried, would kill the Federation.

Mr. R. H. Jones said he knew it was considered by the Executive that it raised a difficulty, but he was convinced that the Federation would never take its proper place without a larger and more representative Executive. As they only had two meetings of the Executive in the year, it seemed to him to place on the President and Secretary an unfair amount of work. He knew one difficulty would be on the score of expense, but he thought the Federation might look to the Executive to pay their own expenses for attending those meetings. It was not a large order, for there were only two meetings.

Mr. TOCHER's amendment was carried.

Variation of Subscription.

Mr. MERSON (Hon. Secretary) moved, formally, the following resolution from the Grimsby Association:—

> This Association considers that there should be more affinity between Rules 2 and 5, and suggests that the subscription for each association should vary according to the number of delegates they are entitled to send, and that the subscription be 7s. 6d. for each delegate they are entitled to have.

Mr. MERSON explained that the rule now read that the Federation should consist of representatives from each subscribing local pharmaceutical or chemists' association, or other organisation of chemists in England, Scotland, and Wales, and that each association consisting of twenty-five members and under should appoint one delegate, from twenty-five to fifty members two delegates, and from fifty to seventy-five members three delegates, and above that number four delegates.

Mr. ANTCLIFFE seconded the resolution formally.

It was agreed to drop this and the other resolution from the Grimsby Association.

An Invidious Task Declined.

Mr. MERSON formally moved the following resolution, sent by the Huddersfield Association:—

> That before each election of the Pharmaceutical Council the Executive of the Federation of Local Pharmaceutical Associations shall send to each affiliated association a list of candidates for election, stating against each name whether or not the said candidate supports and adopts the principle of protection of prices.

Mr. Merson explained that Mr. Johnson had written informing him that the delegate who had promised to attend was unable to do so, and asking if a delegate from any other association would move the resolution for them. He told Mr. Johnson he would have the matter brought forward.

Mr. NEWSHOLME (Sheffield), in moving that the resolution lie on the table, said the passing of such a resolution would be not only fatal to the interests of pharmacists, but fatal to the interests of the Federation.

Mr. J. A. JONES (Cardiff) seconded the amendment, which was carried.

The CHAIRMAN said he was glad that that was the opinion of the Federation. He was one of those who considered that it would be fatal to the Federation if they were expected to go hunting around for men who would go for protection of prices.

Reduction of Subscription Suggested.

Mr. MERSON (Hon. Secretary) formally moved the following resolution, received from the Burnley Association:—

> That this meeting do take into consideration the advisability of recommending the Pharmaceutical Council to reduce the annual subscription to 10s. 6d., as we are of opinion that thereby its membership would not only be materially increased, but also have much greater weight and influence.

Mr. John A. Heaton, the President of the Burnley and District Chemists' Association, in a letter, had regretted that his absence would prevent him moving the resolution, and said:—"I regret this all the more as I am fully convinced, if the resolution could be put into practice, it would result in an increase of members to our Pharmaceutical Society—an object which all members and all associations ought to strive for, in order that our Society may be fully and adequately represented, and may speak with greater weight and responsibility in all matters affecting the welfare of pharmacy. At present the fee of one guinea entitles a chemist to be a member of the Pharmaceutical Society, and to receive the Journal, and the object of the resolution is to reduce the fee for membership to 10s. 6d., and make the Journal, as at present, 10s. 6d., but optional. I think if this were done it would result in no loss of revenue to the Society, as those chemists who at present are guinea members would still continue to subscribe. At the same time, it would make it easier for the small struggling chemist, and it would bring it within his reach to be a member of the Society, and I feel sure, when the benefits of membership had come home to him, there would be less difficulty in getting him to subscribe the guinea."

The resolution, not being seconded, fell to the ground.

Election of Executive.

Mr. WATSON-WILL moved the re-election of the present Executive *en bloc.*

Mr. FOGGAN (Newcastle) seconded the resolution, which was carried.

Retirement of Mr. Merson.

The CHAIRMAN said it was very gratifying to the Executive to know that the Federation desired to re-elect them all, and it showed they were satisfied with the work that had been done. During the past year it was within the knowledge of most of them that their esteemed and valuable Secretary, Mr. Merson, had not been, unfortunately, in the best of health, and his medical adviser told him he must withdraw for some time from public work, and Mr. Merson placed his resignation in their hands at the last meeting of the Executive. There was only one Mr. Merson, and he was held in the highest respect by every member of the Federation. Mr. Merson had done more to consolidate the associations than any other member of the Executive. That had been proved in many ways, and the best proof that they had of it was that the esteemed Secretary of the Pharmaceutical Society of Great Britain had paid that compliment to Mr. Merson personally. Mr. Bremridge quite realised what a wonderful power Mr. Merson had been for the Pharmaceutical Society. They accepted his resignation with extreme regret, and they hoped his loss would be only temporary. He moved that they should give their heartiest thanks to Mr. Merson for the valuable services he had rendered the Federation.

Mr. G. T. TURNER seconded the resolution, and said he had had great facilities for observing the work of Mr. Merson, and it had excited his admiration. Mr. Merson had only carried out that arduous work at some detriment to health, and they were sorry to think that he had overstrained himself in doing the Federation's work. Through the advice of his medical man he had to give up the post he so ably and uniquely filled. Mr. Merson possessed ripe judgment, a clear mind, and the power of getting over work rapidly.

The resolution was carried by acclamation.

Mr. MERSON returned thanks, and said in the future any little assistance he might be able to render the Federation he would give willingly.

Election of Hon. Secretary.

Mr. GLYN-JONES moved that Mr. Watson-Will should be elected Hon. Secretary in place of Mr. Merson, resigned, with a seat on the Executive.

Mr. R. **Feaver Clarke** seconded the resolution, which was carried unanimously.

Mr. **Watson-Will** said when he consented to be on the Executive he did not know that he would be expected to put on Mr. Merson's boots. He hoped they would fit well. He would try to do his best for the Federation.

More Time for Federation Business.

At the conclusion there was discussion as to having more time to deal with the business of the Federation.

Mr. G. T. **Turner** hoped that next year they would have a full day's meeting, with a dinner.

Mr. **Foggan** also supported the idea to give more prominence to their meeting.

No resolution was passed.

Votes of Thanks.

Mr. **Giles** moved a vote of thanks to the Executive Committee for their services during the past year.

Mr. **Newsholme** seconded the resolution, and said he often found in going about the country that there had been somebody doing work, sowing some of that seed that was going to fructify, come up, and be of advantage to the Pharmaceutical Society, and that was the Federation. He could bear out what had been said as to the admirable services rendered by Mr. Merson. Mr. Bremridge fully realised the value of the work done by Mr. Merson, and the help the work of the Executive had given him in finding men throughout the country who had become valuable officers of the Pharmaceutical Society. He believed that the work of the Federation would not cease that day, but would go on steadily improving.

The **Chairman**, on behalf of the Executive, returned thanks, and said he could assure them that the work which had been imposed upon them as an Executive was by no means light, and he said without fear of contradiction that they had devoted a considerable amount of trouble and anxious thought to the work of the Federation. He had had no fewer than seventy-nine communications from Mr. Merson during the past year, and each of those had to be answered. At the same time the services had been cheerfully given, and he hoped the work had been done to their entire satisfaction. If that was so he was sure the Executive had been well rewarded for the trouble they had taken on the Federation's behalf.

This concluded the business of the meeting.

BRITISH MEDICAL ASSOCIATION.

ANNUAL MEETING.

In his presidential address, delivered at Swansea on Tuesday, July 28, Dr. T. D. **Griffiths** spoke of the evolution of antiseptic surgery, and traced the influence of modern medical knowledge on the progress and advancement of all branches of medicine. In the address on medicine, Dr. **Frederick Roberts**, who may be remembered by some pharmacists for the inaugural address which he delivered at the opening of the session of the School of Pharmacy, in October, 1895, dealt in detail with a number of infective and infectious diseases.

Mr. **Mayo Robson** spoke of many of the more striking developments of surgery in recent years.

In the State Medicine section, on Wednesday, Dr. **McVail**, Glasgow, read a paper on

The Vaccination Acts and Smallpox Prevention,

and recommended the Council to bring before members of Parliament by means of deputations and representation the necessity of further vaccination legislation on lines already approved of by the Council. The recommendation was adopted. The section recorded the belief that smallpox would be unknown in England, as it is in Germany, if every infant were vaccinated and every child revaccinated at the age of ten and animal vaccine alone used. After discussion on the Midwives Act, a general opinion was expressed in favour of the local supervising committees being composed entirely of medical men.

In the Navy and Army section, Fleet-Surgeon **Lloyd Thomas** discussed the question of sunstroke. Staff-Surgeon **Falconer Hall** read a paper on "The Purification of Drinking Water, particularly for Men on Shore Service"; and Lieutenant-Colonel **Hathaway** a paper on "A Mounted Bearer Company."

An important presidential address in the section devoted to Psychological Medicine was delivered by Dr. **Robert Jones**, who chose for his subject "The Development of Insanity in Regard to Civilisation."

In the Psychological section a paper was read by Dr. **Reid**, of Southsea, in which the writer urged that if the

Alcoholism of Parents

rendered the child degenerate, then this degeneracy would tend to be transmitted to the descendants, and under such conditions a race afflicted with alcohol would undergo rapid degeneration and ultimate extinction. Disease, in effect, actually strengthened a race, and the universally accepted doctrine of natural selection was incompatible with the theory that parental disease affected the offspring. If parental intemperance affected offspring, they had an exception to an apparently uniform biological law. It was a fact that Jews, Greeks, Italians, South Frenchmen, Spaniards, and Portuguese, races which had for the longest time had the biggest supply of alcohol, were to-day the most temperate people on earth; while savages, who had most recently experienced the effects of alcohol, were the most intemperate. The writer urged that repressive legislation was useless among civilised nations. That had been tried by Governments during thousands of years, and had everywhere failed, except in the case of Mahomedan countries. In all cases opium was substituted for alcohol.

In the course of the subsequent discussion every speaker opposed the theory of Dr. Reid. Dr. A. T. **Schofield** (London) declared that Dr. Reid had propounded a theory which led to horrible fatalism when he said that the whole race would become extinct if parents transmitted disease. His own belief was that a tendency to weakness or disease successfully resisted through three generations was absolutely stamped out in the fourth.

On Friday, July 31, Dr. **Bushnell** (Plymouth) read a paper in the State Medicine section, in which he advocated the appointment of a

Minister of Public Health

in this country. He strongly believed that by means of such a central authority much more would be done in the direction of stamping out disease. In the discussion which followed it was agreed that such an appointment would be the means of bringing about an improvement in the general health of the people. This view had, however, been directly controverted in Dr. Griffiths' presidential address, on the ground that friction with the Local Government Board would inevitably result.

Dr. **Tidswell** read a paper on

Physical Degeneration,

in the course of which he drew attention to certain psychological influences which, to his mind, were responsible for the nervousness and waywardness so characteristic of the children attending school under the Elementary Education Act. He considered that our present-day educational system was making lunatics of a large number of children, while the teaching of manners was unknown nowadays.

Dr. McVail said that, while possibly national physique was on the downward grade, as a result of compulsory education, the death-rate was less than formerly.

Another interesting discussion was opened in the Tropical Diseases section, by Dr. Jonathan Hutchinson, who spoke of

Leprosy.

Recent experience in South Africa has led the author to believe that leprosy is not spread by any ordinary mode of contagion, that hereditary transmission, if it ever occurs at all, is very rare, and that facts point to leprosy being caused by fish-eating. It is proved everywhere that lepers do not have leprous children, nor has any nurse or worker in a leper asylum ever contracted the disease. In various parts of the world Dr. Hutchinson has traced leprosy to peoples who consume decomposed fish.

Many of these views were opposed by Dr. Fernando, of Colombo; while Dr. Sandwith, of Cairo, gave an instance of a boy leper who had never eaten any fish in his life, as an argument against the fish theory.

Sir Patrick Manson confessed that he was not one of Mr. Hutchinson's disciples, and wished that the latter had dealt with the subject from the pathological standpoint, and explained how the bacillus got into stinking fish. Though stinking fish and leprosy were undoubtedly associated, it was only in a very indirect way.

HULL CHEMISTS' ASSOCIATION.

INAUGURAL MEETING.

Tuesday, July 28, 1903. at the Imperial Hotel, Hull. The meeting was held in order to revive, or re-form, the Association, which has not met for several years. The question of price-cutting was discussed at some length, and it is proposed that the members of the Association shall work in concert in order to make satisfactory arrangements with regard to the purchase price and selling price of proprietary articles. Mr. W. H. Walton, Spring Bank, Hull, is acting as Secretary of the organisation.

NOTES IN PARLIAMENT.

The Army Medical Service.

The question of the recent reforms of the Army Medical Service, and especially as regards the relations of the civilian and the military elements in the service, was on Monday brought before the House of Commons by Mr. Burdett-Coutts in a speech of considerable length and great earnestness. He pointed out that amongst the reforms of the Department is that of the association of the civilian with the military element on the Advisory Board. He suggested, however, that it is unreasonable to expect eminent medical men to perform the duties of such a Board for £200 a year, and that it would almost be better to pay them nothing at all and let them have the honour and gratitude of performing a patriotic public service. He glanced at other reforms, which include the increase of pay of army medical officers, the increase of numbers, increased leave for study, promotion by merit instead of by seniority, and the full recognition of female nursing in military hospitals. These are, he thought, in the main in the right direction as regarded normal requirements, but he suggested that there will not be the requisite elasticity to meet abnormal requirements. There should especially be the organisation, by means of registration and otherwise, to obtain and receive the offers of civilian medical aid which are always forthcoming in war time. There should, too, be a system of determining the relations of the military and civilian elements—a system which would be well understood beforehand on both sides, so as to avoid the friction, of which he saw many illustrations when he was in South Africa in the time of the late war. A very sympathetic reply was made by Mr. Brodrick, who laid especial stress on the willingness of the War Office to improve the equipment of hospitals, and generally promised to consider the various points raised by the member for Westminster.

Haffkine's Plague Prophylactic.

Mr. Chamberlain, replying to Mr. Weir, has stated that he has no information as to the date when inoculation with Haffkine's plague prophylactic was brought into operation in Hong Kong, as to the number of persons inoculated, and the number who have since succumbed to the plague. He has, however, asked the Governor to supply a report.

LEGAL INTELLIGENCE.

Pharmacy Act, 1868.

Proceedings at Glasgow under Section 15.

Pharmaceutical Society v. Owen.

On Thursday, August 6, 1903, at Glasgow Sheriff Court, Richard Jones Owen, 145, Duke Street, Glasgow, was charged, at the instance of the Registrar of the Pharmaceutical Society, with selling laudanum on May 29, contrary to the provisions of the Pharmacy Act of 1868, in that he was not a qualified chemist and druggist.

A fuller report of the case will be published in next week's issue.

Defendant was convicted, and fined £3 and two guineas costs, or, in the alternative, twenty-one days' imprisonment.

The Enforcement of Penalties.

Pharmaceutical Society v. Denham.

On Tuesday, August 4, 1903, at the Bradford County Court, his Honour Judge Bompas, K.C., delivered judgment in the case of the Pharmaceutical Society v. Novello Denham, which was heard before him some weeks ago, and upon which he had deferred judgment. His Honour said that in this case the plaintiffs had applied to the Registrar of the Court to make an endorsement on a sealed copy of the judgment that they had obtained in their action in the form given in the appendix to the County Court Rules, 1889. Order 25, Rule 40*b* provided for such an endorsement, and that the copy so endorsed should be issued by the Registrar for service on the application of the party entitled to the benefit of the Order. The Registrar in this case had refused to make the endorsement or issue a copy of the Order, on the ground that the Rule was not applicable to a judgment on the Common Law side of the Court. The plaintiff had applied to him to order the Registrar to make the endorsement asked for, but the Registrar contended that his duty being merely ministerial, no appeal lay to the judge, and that the plaintiffs' only course was to apply to the High Court for a mandamus requiring him to comply with the plaintiffs' request. On the whole, he was of opinion that this was so, and that he could not make the Order that he was asked for; but he thought the plaintiffs were justified in asking him, as Judge of the Court, to express an opinion which might, perhaps, guide the Registrar, and, at any rate, aid the plaintiffs in deciding whether they should apply for the mandamus as was suggested. The action was brought to recover penalties to which the defendant had become liable. The Debtors Act expressly provided that such an action should be excepted from the operation of the enactment that no person should, after the commencement of that Act, be arrested or imprisoned for making default in payment of a sum of money. Before the passing of the Debtors Act, by the County Court Act then in force judgments were enforced by a summons similar to, but not identical with, the judgment summonses issued under Section 5 of the Debtors Act. That County Court Act had been repealed, and was replaced by the County Court Act, 1888. The present Act contained no provisions for the enforcement of judgments by the commitment of the debtor, which, except in the case of actions for penalties, had become unnecessary, except the provisions of Order 25, Section 40*a* of the County Court Rules, 1889. That Rule provided, "Orders in the nature of an injunction and all Orders interlocutory or otherwise within the competence of the Court, which, if the same were made in an action or matter pending in the High Court, could in such Court be enforced by attachment of the person or committal, may be enforced by order of the Judge by warrant of attachment, which shall be according to the form in the appendix." The question to be decided was whether the judgment in this action came within that Rule. Admittedly it was within the competence of the Court. The judgment, after stating that it was adjudged that the plaintiffs had recovered against the defendant the sum of £6 2s., proceeded, "And it is ordered that the defendant do pay the same to the Registrar of the Court on the 17th day of March, 1903." He thought this was an order, and that the only question was whether if the same were made in an action pending in the High Court it could be enforced by committal. Previous to the Debtors Act judgments were enforced in the High Court by the issue of a writ of *causa*, and in the case of a judgment for a penalty this was, he supposed, equally the case after the Act, as it did not seem to have effected such actions. He did not know whether a writ of *causa* would now be issued, or whether it had been replaced by another procedure, but he saw no reason to doubt that in some form such a judgment could be enforced by the committal of the debtor. He thought, therefore, that the order to pay the money contained in the judgment came within the terms of Rule 40*a*, and could be enforced by his order by writ of attachment. If this were so, there was no doubt that Rule 40*b* also applied, and that the Registrar ought to act in accordance with its provisions. He supposed that he should have power in that Court to grant a mandamus to the Registrar, but he thought that this would be highly undesirable, and hoped the plaintiffs would see their way to apply to the High Court and obtain a decision upon this highly difficult and somewhat important question.

Sale of Food and Drugs Acts.

Orange Wine.

On July 29, 1903, at Pontypridd Police Court, an adjourned case was heard in which a small shopkeeper from Cilfynydd was charged with selling orange wine certified to be adulterated with a proportion of salicylic acid. The case had been adjourned to enable Mr. D. Rees, who defended, to look up a case respecting his contention that the certificate of the public analyst was bad, because it did not give the percentages of foreign ingredients in the wine.

The Stipendiary remarked that as the analyst gave evidence the Bench were at present disposed to think that the sufficiency of the certificate was unimportant. The Bench did not express an opinion whether the certificate was good or not, and if the case went further they would take their chance of its being all right. A fine of 1s. and costs (£2 10s. 8d.) would be imposed.

Ammoniated Tincture of Quinine.

On Tuesday, July 28, 1903, at Bournemouth, Mr. Frank Rye, pharmaceutical chemist, of Poole Road, Bournemouth, was summoned under the Sale of Food and Drugs Acts for selling ammoniated tincture of quinine not of the nature, substance, and quality demanded, it being deficient in alcohol to the extent of 5 per cent. and of ammonia to the extent of 21 per cent. Mr. T. W. Rodgers prosecuted, and Mr. H. Trevanion defended.

Mr. Rodgers, in opening the case, quoted from the analyst's certificate. The analyst, Mr. Cripps, reported that he had based his opinion as to the deficiency of alcohol and ammonia upon the fact that ammoniated tincture of quinine should contain 45·58 per cent. of absolute alcohol, and 1·02 per cent. of ammonia, whereas the sample actually contained 42·95 per cent. of alcohol and 0·8 per cent. of ammonia. In reply to the suggestion which might be made that the drug was of a very volatile character, and that it might lose some of its alcohol and ammonia after it was purchased, and before it was analysed, he pointed out that the analyst, in his certificate, stated that no change had taken place in the constitution of the article which would interfere with the analysis. In regard to the sample retained by the officer, the cork and wax of the bottle appeared to be absolutely sound. The sample left with the chemist had been shown to him, and he admitted that in this case it did appear as if something had been coming through the cork, which might have been a bad one, and evaporation had taken place, but this, he suggested, might be accounted for by the way in which the bottle was kept, for it had been kept cork downwards. The article was purchased on June 17, and the sample was received by the analyst on the 18th, so that it was not likely any material change could have taken place in the interval.

In reply to the Chairman (Dr. Frost), Mr. Rodgers said that the analyst's certificate was dated June 29, but he suggested that if there had been anything wrong with the cork and the seal the analyst would have attended to it at once. With regard to the second possible line of defence, that the drug was very volatile and difficult to keep, his answer would be that he was informed that the prices for which drugs were sold by the chemists showed a very considerable margin of profit, so as to allow them to renew the drugs from time to time, and, therefore, chemists should take care to renew their perishable drugs.

Mr. Fred P. Brazier, a clerk in the employ of the Corporation, who made the purchase for the inspector, admitted in cross-examination that the drug was supplied in a glass-stoppered bottle, the assistant stating that it was usual.

Mr. John Christie, inspector under the Sale of Food and Drugs Acts, said, in reply to Mr. Trevanion, he was not supplied with stoppered bottles in which to take samples of drugs, but he always used the very best corks and wax for bottling and sealing his samples, which he considered quite sufficient, without having stoppered bottles. The strength of the drug would go off in a slight degree in being transferred from one bottle to another.

Mr. Trevanion, for the defence, submitted that if the article supplied was genuine it was a good defence to the action, though it might be weak as regarded quality. As to the deficiency mentioned in the analyst's report, that, he suggested, was probably caused by the volatile nature of the drug, and a portion of the strength was given off through the transfer from certain vessels to others. The deficiency in each case was very small, and he expressed his surprise that there should have been a prosecution at all.

Mr. Rye, the defendant, said he kept the drug in question in a stoppered bottle, and took every possible care to prevent evaporation. He attributed the deficiencies to the volatility of the article and evaporation during transference from bottles to other bottles, and he was also able to say that there would be evaporation through a cork and wax-stoppered bottle. The deficiency in this case would amount to one drop of absolute ammonia in a teaspoonful, and one-tenth of a grain, equivalent to about a drop, of ammonia gas in a teaspoonful, which would be the extent to which the purchaser would be prejudiced. In reply to Mr. Rodgers, he said it would be almost impossible to sell to the public ammoniated tincture of quinine which would comply exactly with the requirements of the Pharmacopœia. It would not be permissible for a chemist to keep the substance a little stronger in stock, in order to allow for evaporation during transfer to the purchaser, so that the latter might get the article exactly according to the standard.

Mr. G. E. Bridge, chemist, Bournemouth, said ammoniated quinine, to be absolutely up to standard, should immediately after manufacture be put into small stoppered bottles, full right up to the stopper. Unless that were done, he did not believe one sample in 100 would, on analysis, be found to be up to the standard. The mode he had suggested as the only guarantee was impracticable in the ordinary retail trade.

The case was dismissed, the Chairman suggesting to the inspector to be careful in future, when dealing with volatile spirits, to see that, if possible, they were hermetically sealed.

High Court—King's Bench Division.

Alleged Saccharin Smuggling.

On July 30, in the King's Bench Division of the High Court of Justice, the hearing of the case of the Attorney-General *v.* Coates was resumed before the Lord Chief Justice and a special jury. It was an information on the Customs Department against the defendant, Mr. Thomas C. Coates, manager of the Mineral Waters Aëration, Limited, Camden Street, Birmingham, charging with secreting and concealing 434 lb. of saccharin on which the duty had not been paid, in consequence of which he had rendered himself liable to penalties amounting to £3,385. The defendant pleaded not guilty.

Witnesses were called as to the reception of a crate at the Grand Hotel, Birmingham, containing twenty-seven parcels, which were delivered to the defendant in obedience to a letter from Firmenich, traveller for a Geneva firm, who wrote that his people at Nottingham were forwarding twenty-seven tins of "Geneve oil" to the hotel. Firmenich wrote from Paris, stating that he was ill, and asking defendant to obtain the "stuff" and forward the twenty-seven parcels to the list of addresses given, stating that there was no reason why his name should appear in the transaction at all.

William Starkey, a confidential Customs officer, gave evidence as to tracing the smuggled saccharin to the defendant's mineral water works, 149, Camden Street, Birmingham.

The Lord Chief Justice, in summing up, said this was an important trial, and it was for the Crown to prove that the defendant had a guilty knowledge that the duty had not been paid upon the saccharin. He pointed out that there was no evidence that the defendant knew originally that the goods had been smuggled, but the jury had to satisfy themselves whether or not the defendant knew that duty had not been paid upon the goods.

The jury, after about twenty minutes, returned a verdict of not guilty.

High Court—Chancery Division.

Holloway's Pills.

On July 30, 1903, in the action of Holloway *v.* Clent, Mr. Justice Swinfen Eady made perpetual an injunction recently granted by him restraining the defendant from using the name "Holloway" in connection with pills and ointment sold by him.

Medicine Stamp Duty Acts.

"American Pain-Killer."

On Wednesday, July 29, 1903, at the Bolton Police Court, John Clark, herbalist, 96, Moor Lane, was summoned, at the instance of the Commissioners of the Inland Revenue, for selling medicine not properly stamped, and also without a licence. Clark was undefended, and Mr. E. Mason, supervisor for Bolton, who appeared for the Commissioners, explained that they were suing for a penalty of £10 incurred by defendant selling, unstamped, an "American Pain-killer" for toothache.

The magistrates imposed a fine of 40s. and costs or a month's imprisonment in the first case, and 20s. in the second, with the alternative of a month, the terms to run consecutively.

Salford Hundred Court of Record.

A Limited Company's Mistake.

On Wednesday, August 5, 1903, at the Salford Hundred Court of Record, held at Manchester, an action was brought by Walter William Ellis, joiner, Salford, against Messrs. Needham, Limited, drug store proprietors, Huddersfield, and elsewhere, to recover damages for being supplied with some poisonous substance instead of Epsom salts, and the pain and suffering he experienced in consequence of taking the drug. Mr. Wharton and Mr. Sellers appeared for the plaintiff, Mr. Acton for the defendants.

The case for the plaintiff was as follows:—On May 9 last (Saturday) the plaintiff sent his niece to the shop of the defendants in Lower Broughton Road, Salford, for a halfpennyworth of the best Epsom salts. An assistant of the defendant's supplied something in a paper labelled "Epsom Salts." Later in the evening, the plaintiff's wife tore open the "Epsom salts" and poured the contents into a cup, to which was added equal parts of milk and water, and the plaintiff drank the decoction. He noticed that the "salts" seemed ground rather finer than usual, but attributed it to the fact that the best salts had been sent for. Twenty minutes later he was seized with a burning pain in his stomach; his limbs became paralysed, his eyes began to be affected, and he lost the power of speech. It was five weeks before he could resume his employment. There had been a sediment left in the cup, and the cup and spoon were shown to the doctor, who took them to the office of the Medical Officer of Health, by whom they were passed over to Dr. Carter Bell, the borough analyst, and he discovered that the alleged Epsom salts was some form of bismuth, a large dose of which would be poisonous. On

June 27 Mr. Thos. Needham, the managing director of Needham's, Limited, called upon the plaintiff, and represented that he had seen Dr. Macdonald, who had said that the plaintiff had not been poisoned; that he had also seen the plaintiff's solicitor, who had told him that he had given the matter up, as there was no case, and that if he (plaintiff) was a sensible man he would drop the affair, and if not he (defendant) should bring an action against him for the injury he had done to his business, and ultimately succeeded by threats in getting him to sign a paper absolving the defendant from all liability in the matter for the sum of £4, which was paid by cheque. The plaintiff afterwards discovered that the doctor and his solicitor had not made the statements attributed to them, and he returned the £4.

Evidence bearing out the above was given by the plaintiff, by his wife, Dr. Macdonald, Dr. Carter Bell, Mr. Holmes, solicitor, and other witnesses.

For the defence,

J. Dallas Brodie was called. He said he was a fully-qualified chemist, and managed the Lower Broughton shop for Messrs. Needham, Limited. He served in the shop on May 9, and sold several doses of Epsom salts. He did not remember serving the plaintiff's niece. There were two kinds of Epsom salts. The largest crystals were the best, and were used in doctors' prescriptions. There was no place from which he could have got bismuth. The best Epsom salts were kept in a bottle; the inferior in a drawer. He was constantly serving Epsom salts.

A packet of bismuth was produced by the witness, which had been purchased from Messrs. Woolleys, but Mr. Wharton objected, as it had nothing to do with the case.

The objection was allowed.

Witness said he saw the agreement signed by the plaintiff, and paid him £4 for the cheque. Packets of Epsom salts were made up ready for sale, but not in less quantities than one-pennyworth. Nitrate of bismuth was kept in a bottle ten yards from the Epsom salts. He could not possibly have made a mistake in serving the little girl.

Thomas Needham said he had seen Mr. Holmes on June 27 and also Dr. Macdonald, and he went to see the plaintiff. Brodie went with him, but remained outside. He introduced himself to Mrs. Ellis, and asked all particulars about the salts. He suggested to Mrs. Ellis that she had been careless in giving her husband a powder that did not seem like the usual salts, and she admitted that she thought she had. Witness then said he could prove most certainly that it was Epsom salts that the girl got, and added that he had had a long conversation with Dr. Macdonald, and they had both agreed that it would be extremely difficult to prove that the plaintiff had got the stuff at their shop, because there might have been a packet of bismuth in the cupboard, and the stuff might not have come from their shop at all. Ellis then said that he was perfectly willing to settle the matter, and always had been. After bargaining, the sum of £4 was agreed upon. He did not put any pressure on at all. The plaintiff was as anxious to settle it as he was.

Mr. Acton and Mr. Wharton having addressed the Court,

The Judge said the conversation with Ellis ought not to have taken place at all. The defendant should have communicated with his solicitor. It was for the jury to say whether the plaintiff had been dragooned into signing the document. They must consider the two versions of the interview. The agreement had not been properly stamped, and was void.

The jury found for the plaintiff, damages £30. Judgment accordingly, with costs.

POISONING CASES AND INQUESTS.

The deaths by poisoning reported during the seven days ended Wednesday, August 5, 1903, numbered twelve, thus:—

Poison.	Accident.	Suicide.
Carbolic Acid	1	—
Chloral Hydrate	1	—
Chloroform	1	—
Hydrochloric Acid	—	1
Laudanum	2	—
Morphine	1	—
Oxalic Acid	—	1
Ptomaine	1	—
Strychnine	—	2
Sulphuric Acid	1	—
Total	8	4

Carbolic Acid.—A man at Redbourn died from carbolic acid poisoning, some liquid carbolic acid having been accidentally taken while the man was suffering from the effects of alcohol.

Chloral Hydrate.—A Glasgow gentleman died from an overdose of chloral hydrate, accidentally administered.

Chloroform.—A child at Chelsea died while under the influence of chloroform, administered for an operation.

Hydrochloric Acid.—A man at Brighton committed suicide by taking hydrochloric acid.

Laudanum.—An overdose of laudanum, taken by misadventure, caused the death of a lady at Framlingham. A baby at Nottingham was given "one drop" of laudanum in castor oil, and died.

Morphine.—A child at Derby was given a teaspoonful of an adult's cough mixture, which contained morphine and had been dispensed at the infirmary without any warning on the label. The jury at the inquest added to their verdict a rider to the effect that the word "adult" should have been written on the label.

Oxalic Acid.—A stableman at Hastings committed suicide by taking oxalic acid.

Ptomaine.—Ptomaine poisoning, after eating "frozen mutton and peas" caused the death of a child at Catford.

Strychnine.—A farm labourer at Onehouse, and a chemist's housekeeper at Ashby, committed suicide, the cause in each case being mouse-poison containing strychnine.

Sulphuric Acid.—A woman at Cerrigydruiden, who took a quantity of sulphuric acid some months ago, has died from the effects.

Non-Fatal Cases.—Belladonna liniment, carbolic acid, chlorodyne, hydrochloric acid, hydrocyanic acid, oxalic acid, and salt of lemon were among the drugs used in unsuccessful attempts at suicide.

Silver Marking Ink.

The best silver marking ink is made as follows:—Dissolve silver nitrate, 3 oz., and pure sodium carbonate, 3 oz., separately, in a quantity of hot water; mix the solutions in a large bottle, allow the precipitate to subside, decant the liquid and wash the precipitate, by decantation, with two washings of distilled water. Collect and drain the precipitate, washing it further if necessary until the washings are no longer alkaline. Transfer to a mortar, rub down with 10 drachms of tartaric acid, and when effervescence has ceased add 3 fl. oz. of strong solution of ammonia, or enough to produce a clear solution. In this dissolve sugar, 1½ oz.; powdered gum acacia, 1 oz.; water-soluble chlorophyll, 1 oz.; archil, 1 oz.; and add sufficient water to produce 1 pint.—*Spatula*, **9**, 85.

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

An International Exhibition will be opened at Arras, in the north of France, on May 1, 1904, and remain open until the following October. It will be under the patronage of the President of the French Republic, the honorary president of the automobile section being the King of the Belgians. Industrial chemistry is to be dealt with in one of the classes, and another will be devoted to alcohol and its production.

Bradford Analyst's Report.—The Bradford City Analyst (Mr. F. W. Richardson) reports that during the last quarter he examined eighteen samples of drugs. Three were condemned. One was a sample of compound liquorice powder which contained twice the proper proportion of the cheapest constituent—*i.e.*, sulphur—with a corresponding deficiency in the percentage of the more costly ingredients. One of paregoric gave less than half the proper amount of opium, and a sample of lime water showed a third deficiency of lime.

Registers of Voters.—On Sunday last the lists of householders and "old lodgers" entitled to vote at Parliamentary, municipal, or County Council elections were posted on the doors of churches and chapels. Every householder, not under twenty-one years of age, who has occupied a house from July 15, 1902, until July 15, 1903, inclusive, and has paid all rates demanded, is entitled to have his or her name upon this list. If a general election comes in the spring, the lists now being prepared will be those used. It is therefore of the utmost important to the elector that his name should appear.

Hertfordshire Analyst's Report.—The quarterly report of Mr. A. E. Ekins, F.I.C., the analyst appointed for the County of Hertford, shows that during the quarter ended June 30, 1903, seventy-one samples of food and drugs were submitted for analysis, sixty-nine by inspectors, and two by private purchasers. The samples included seven samples of drugs and one sample each of arrowroot and lardine. Of these drugs, one sample of sweet spirit of nitre was found to be deficient, and the vendor was fined, and one sample of Gregory's Powder was found to have been prepared with magnesium carbonate instead of oxide.

Export of Drugs and Chemicals to Mexico.—Counsul Leay, in his report on the trade of Vera Cruz for the year 1902, states that in making shipments of drugs and chemicals care should be taken that they are not packed in flasks or vials bearing a label varying from the actual contents, as, in such cases, duties will be collected on the commodity which is subject to the higher rate. It is important to declare the kind of essential oils, and a perfect distinction between essential oils and essences must be made. Essential oils, as defined in the Customs tariff, are the extracts of certain vegetables or plants, which have not been combined with other substances. When these oils are alcoholised, or contain other substances, they are rated as toilet extracts or perfumery.

Drugs in London Hospitals.—It is announced by the *Practitioner* that the authorities who are responsible for the administration of the Hospital Sunday Fund are endeavouring to cut down the expenses of some of the London hospitals by insisting on a reduction in the amount spent on drugs. Such a requirement is ill-advised in the extreme, as great risk must necessarily be run of either causing the hospitals to use inferior drugs, or of preventing the physicians from making use of remedies which they may consider to be needful. Certainly many medical men at hospitals, as elsewhere, require to be educated to order drugs by their proper names rather than by some patented or proprietary description, which involves much extra expense to the hospital in obtaining an identical product; but a general reduction in the cost of non-proprietary and non-secret preparations has nothing to commend it.

Fertilisers and Feeding Stuffs.—The President of the Board of Agriculture has appointed a Departmental Committee to inquire into the working in Great Britain of the Fertilisers and Feeding Stuffs Act, 1893, the various methods in which it has been administered, and the results which have attended its operation; and to report whether any, and, if so, what further measures can with advantage be taken for the better protection of vendors and purchasers of the articles to which the Act applies. The Committee is constituted as follows: Lord Burghclere (Chairman), Dr. Thomas E. Thorpe, F.R.S. (principal chemist of the Government Laboratory), Mr. Archie K. Loyd, K.C., M.P., Dr. Andrew Peebles Aitken, Mr. James William Clark (legal adviser to the Board of Agriculture), Mr. Thomas Elborough, Mr. Alexander M. Gordon, Mr. Isaac Pearson, and Mr. John W. Spear, M.P. Mr. R. H. Hooker, of the Board of Agriculture, will act as Secretary to the Committee.

Radium Experiments by a Pharmaceutical Chemist.—Mr. F. W. Branson, of Leeds, contributes to *Nature* an account of some experiments made by him with a mixture of radium and barium chlorides in a dry and in a moist state. When the substance was moistened with water and stirred, its radioactivity was only slightly reduced, though the luminosity instantly disappeared, but it was restored by drying for fifteen minutes at 150° C. When placed in benzene the dried salt retained its phosphorescence. Benzene, however, appeared to diminish somewhat the emission of light rays. Exposure of the dried salts for a few hours to a moist atmosphere caused a total cessation of phosphorescence, but not in a dry atmosphere. No action could be observed on a photographic plate exposed to the radiations from the moistened salt for thirty seconds, whereas the dry salt gave a full image in the same time. A much longer exposure of the moist salt gave a faint impression, about equal in amount to that produced by an equivalent amount of the dried salt, when the latter was covered with a thin paper, opaque to light rays.

Opium Smoking.—The *Lancet* speaks in terms of severe condemnation of a pamphlet, circulated by a Kensington firm of dispensing chemists, in which a pipe for opium smoking is described, and directions for use are given. Interviewed by a representative of the daily press, the head of the firm has indignantly denied that any encouragement to the opium habit is given in the pamphlet, and states that all patients are strongly advised to obtain the advice of a medical man especially conversant with the use of the pipe. It is not proposed to withdraw the pamphlets from circulation, and it is stated that a thorough investigation will be welcomed. Though probably no great harm has been done in the past, the advertising and recommendation of an opium pipe cannot be considered as judicious or in the best interests of the community. Pharmacists generally are most careful to do all in their power to give active discouragement to the habit of taking poisonous hypnotics, and it is a pity that the efforts of the many in this respect should be made fruitless, even if in appearance only, by the indiscretions of the few.

Institute of Chemistry Examination Results.—Of twenty-four candidates who entered for the recent intermediate examination, held in London and in Glasgow, the following seventeen passed:—J. Alexander, D. Allan, H. F. Barke, J. W. Brisbane, J. A. Campbell, A. C. Carter, R. W. L. Clarke, B. J. Eaton, J. D. Fraser, J. S. Hills, L. E. Hinkel, C. E. Male, J. Miller, R. G. Pelly, L. J. E. Riley, W. C. Scott, and D. Spence. In the final examination for the associateship (A.I.C.) in mineral chemistry, of thirteen who entered eight passed:—A. V. Elsden, L. F. Guttmann, Ph.D., A.C.G.I., J. S. Kerr, Assoc.R.C.Sc., H. G. Lacell, Assoc.R.C.Sc., F. P. Leach, Assoc.R.C.Sc., H. S. Raper, B.Sc., E. Smith, and G. Steedman. Of two candidates entered in metallurgical chemistry one passed:—W. H. Keys. In organic chemistry, of the ten who entered the following six passed:—W. G. Black, A.C.G.I., J. W. G. Brooker, H. McCombie, M.A., Assoc.R.C.Sc., S. S. Napper, A.C.G.I., G. Tattersall, B.Sc., and H. L. Wall; and of four who entered in the branch of the analysis of food and drugs, and of water, the following three passed:—J. F. P. Fielding, H. A. Scruton, B.Sc., and T. E. Wallis, B.Sc. Two candidates were examined for the fellowship, of whom one, John Don, M.A., B.Sc., passed in mineral chemistry.

How to Administer Radium and Thorium to Consumptives.—The application of the elements, radium and thorium, to therapeutics are discussed in an article contributed to the *British Medical Journal* by Professor Soddy. Speaking of the comparative cost and available supply of the two elements and their salts, the professor says that a milligramme of radium salt equals roughly a kilogramme of thorium salt in radio-activity, but the cost of a kilogramme of thorium nitrate—about £2—is only two or three times as great as the cost of a milligramme of radium bromide, and whereas the former can, if necessary, be obtained by the ton, the supply of radium is notoriously limited. For direct application of the rays it is probable that the thorium salts can never be sufficiently powerful to replace radium for medical purposes, and the following method of application will be of great interest to pharmacists:—The cheapest and most convenient salt of thorium to employ is the nitrate, as this is very soluble and is manufactured in large quantities for the Welsbach mantle industry. But this salt contains a very large amount of free nitric acid, the inhalation of which would be apt to be extremely injurious. This may be neutralised by addition of ammonia to the solution in water, with constant stirring until precipitation (of thorium hydroxide) is just about to take place. An ordinary gas-washing bottle with outlet and inlet tubes ground in would prove a convenient form of inhaler, and this should be filled as full as possible with the fairly concentrated solution. A small caustic potash tube could be inserted in the air stream before it enters the mouth, and would serve to remove moisture and also any free nitric acid, in case the neutralisation had not been properly performed. If a large quantity is employed so that several bottles are necessary, these should be connected up in parallel and not in series; 100 Gm. of thorium nitrate in solution, and one hour's daily inhalation, might be suggested as a commencing "dose," to be increased indefinitely if no harmful results accrue. If this is without effect the more powerful radium emanation might be tried. The gas-washing bottle must be provided with two taps, so that no leakage of the precious and slowly formed emanation occurs during accumulation. A few milligrammes of the dry salt—radium bromide, for example—should be introduced, and a few drops of water drawn in to dissolve it, and the taps immediately closed. For the first trials a few bubbles only of the total gas contained in a fairly large bottle should be drawn into the lungs with a deep breath of air, which should then be retained as long as possible before being exhaled. If no ill-effects follow, the dose may be gradually increased, until finally the whole gaseous contents of the bottle may be inhaled into the lungs, a few bubbles at every breath, this treatment being repeated once every twelve or twenty-four hours. But the very powerful nature of the agent must be remembered. The emanation from a few milligrammes of radium bromide mixed with air glows quite brightly in a dark room. In an atmosphere containing oxygen the emanation possesses a surprisingly powerful oxidising effect on carbonaceous matter, and even upon metallic mercury; so that great caution must be observed during the preliminary trials that too great a dose is not given before its effects on the system have been carefully studied. But there is not much fear that the action of the thorium emanation, at least in moderate quantity, would prove too powerful, and it is advisable that its action should be first tried.

PERSONALITIES, BUSINESS CHANGES, ETC.

Messrs. Parkinson and Son, shopfitters, have opened new offices and show-rooms in Fisher Street, Southampton Row, London, W.C.

Mr. B. P. Haley, pharmaceutical chemist, Bradford, has been appointed dispenser to the West Riding Asylum, Menston, near Leeds.

Mr. Norman S. Goodyer, of Sheffield, has been awarded the Pharmaceutical Society's Silver Medal for an herbarium collected by him.

Mr. A. W. Lodge, 24, St. Oswald's Street, Old Swan, has purchased the business of the late Mr. J. Macdonald, 493, Prescot Road, Old Swan, Liverpool.

Mr. Charles Edgar Male, Ph.C., M.P.S., an old student in the School of Pharmacy, has successfully passed the intermediate examination of the Institute of Chemistry.

Mr. Isaiah Bourdas has been appointed one of the Pharmaceutical Society's auditors in succession to Mr. E. Northway Butt, who has resigned his position as auditor, after eleven years' service in that capacity.

Mr. Ernest Goulding, Ph.C., who was a Bell Scholar in 1892, and obtained a number of medals and certificates at the School of Pharmacy, has obtained the degree of Doctor of Science in Chemistry at the University of London.

Mr. W. B. Cowie, of Edinburgh, Mr. J. F. Tocher, of Peterhead, and Mr. R. Broadhead, of Batley, are among the prominent pharmacists from a distance who have called on the Editor, at 17, Bloomsbury Square, during the last ten days.

Mr. Thomas Edward Wallis, B.Sc. (Lond.), Ph.C., M.P.S., Assistant Lecturer in Physics, and Senior Demonstrator in Practical Chemistry in the School of Pharmacy, has passed the final examination for the Associateship of the Institute of Chemistry.

Mr. James Stuart Hills, Ph.C., M.P.S., who has been appointed Salters Research Fellow in the Pharmaceutical Society's Laboratories, in succession to Mr. W. Garsed, passed the intermediate examination of the Institute of Chemistry, held in London during July.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

The Drug Sales.

London, Thursday, August 6, 1903.

A somewhat brighter tone prevailed in the auction rooms to-day. It cannot be said, however, that business was brisk, or that the market was anything but dull. At the same time, however, although many of the drugs offered received no attention, certain articles sold after a fair amount of competition at good prices. Bids were forthcoming with less hesitation, and the rap of the auctioneer's hammer was, perhaps, more frequently heard to-day than it has been for many weeks. The catalogues numbered fifteen, comprised new goods only, and with one exception were not heavy. The most noticeable feature was the remarkably high price obtained for a variety of Cape Aloes, a quantity of which was knocked down at a figure fully fifteen shillings in advance of the price accepted when this same quality was last offered. Practically the whole of the Senna catalogued was sold at full prices; a fair proportion of this was bought for the Continent and America. Cardamoms also realised prices in advance of last auction's rates; these were in fair supply and good demand. Ipecacuanha is again cheaper, although only slightly so, Rio fetching about one penny less than the reduced price at which this article was sold a fortnight ago. A good quantity of Hotchkiss Oil of Peppermint was once more sold without reserve at a decreased rate. Readers of the Journal will not be surprised to learn that the Menthol (Kobayashi) offered without reserve was disposed of at rates below the market price. This article has recently been watched with interest, and the information given in these columns concerning it has doubtless been of service. These were the principal features of the sales. Other goods were either sold at ordinary prices, or were bought in.

	Offered	Sold.		Offered.	Sold.
Albumen	11	0	Indigo	1	0
Aloes	56	21	Ipecacuanha	91	35
Areca Nuts	—	0	Kola Nuts	1	1
Australian Sandarac	26	0	Lemongrass Oil	24	0
Balsam Peru	10	0	Lime Juice	15	0
Cardamoms	430	345	Menthol	7	5
Coca Leaves	12	12	Musk Seed	1	0
Croton Seed	4	0	Orange Peel	73	73
Cuttle Fish	25	2	Orris Root	10	0
Dragons' Blood	4	0	Peppermint Oil	140	85
Egg Albumen	3	3	Rhubarb	15	0
Ergot of Rye	4	0	Sarsaparilla	72	28
Gamboge	7	0	Senna	249	239
Guaza	10	0	Squills	12	0
Gum—			Tamarinds	19	0
Benjamin	105	5	Turmeric	217	0
Myrrh	2	0	Valerian Root	20	20
Honey	84	30	Wax	394	23

ALOES.—Six cases good hard bright Cape, slight drossy, sold at 60s. to 61s. per cwt., being fully 15s. higher than the price obtained when this quality was last offered. Curaçoa, drossy dark livery, sold at 15s. 6d.

ARECA NUTS.—A fair quantity was offered, but none sold. These were held at 12s. to 13s.

BALSAM PERU.—This was all bought in, no price being mentioned.

CAMPHOR.—Fourteen cases, each containing 100 1lb. tins of ½-oz. tablets, were bought in at 2s. 3d. per lb.

CARDAMOMS—Sold very well, and were in good supply; lower qualities at fully 1d. per lb. advance. Decorticated steady at 1s. 1d. to 1s. 2d.

COCA LEAVES.—Twelve cases of good green leaf sold at 1s. 1d. to 1s. 2d.

EGG ALBUMEN.—Three cases Chinese sold at 1s. 8d. per lb.

ERGOT OF RYE.—Fair bold was held at 1s. 2d. per lb.

GAMBOGE.—Siam pipe was bought in at £18, bids only reaching £14.

GUM BENJAMIN.—There was no demand for Sumatra, which was held for £6. Palembang was bought in at 36s.

HONEY.—Californian bought in at 36s.; Jamaica sold at 16s. to 18s., according to quality.

IPECACUANHA.—A good quantity was sold, a large proportion of which was taken by America, Rio, 4s. 9d. to 4s. 11d., being a trifle lower than last sale's rate. Two bags fair ordinary Cartagena were sold at 4s. per lb. Several bids below this were declined.

KOLA NUTS.—Only half a bag was offered, and sold at 6d. per lb.

MENTHOL.—Kobayashi sold without reserve at 22s. to 22s. 3d. This was lower than prices quoted earlier in the week, although a few private sales have been made at 22s. 6d.

ORANGE PEEL.—Seville (English hand cut): 72 barrels sold without reserve at 1d. to 2d.

PEPPERMINT OIL.—A quantity of H.G.H. was again offered without reserve, and the prices obtained were still lower, being 11s. 3d. to 11s. 6d. Kobayashi Peppermint Oil sold without reserve at 6s. to 6s. 3d.

RHUBARB.—There was no demand for this article, and none sold.

SARSAPARILLA.—A few bales Jamaica were knocked down at 9d. and 10d. Lima was bought in at 1s. 2d.

SENNA—Sold at very full prices with good competition. The demand, both for America and the Continent, was strong. Tinnevelly, fair bold leaf, fetched 4½d.; medium leaf was scarce, small greenish, but spotted, from 2¼d. to 2¾d.; and low jungle 1½d. No Alexandrian leaf was offered. Alexandrian pods were held for 6¾d.

VALERIAN.—20 bales sold without reserve at 9s. per cwt.

WAX.—Zanzibar bought in at £6 17 6d. to £7 2s. 6d. A fair quantity Jamaica sold at £7 15s. Australian taken out at £7 5s.

General Markets.

In the General Market in Drugs and Chemicals there are few features of interest to record. The holiday aspect is still very marked, and business has been by no means voluminous. Quicksilver, which has been firm for some time back, is lower. Cream of Tartar is dull and, if anything, a little bit easier. To all intents and purposes, however, the price is unchanged. Bromides, Iodides, and Camphor are unaltered. Quinine is likewise unchanged and quiet. Senega is dearer, and information concerning Cascara is given below. Opium and its alkaloids remain firm, and there is nothing new to relate with regard to them.

ALUM.—Powdered, £6 lump, £5 12s. 6d.

BISMUTH CARBONATE.—8s. per lb.; subnitrate, 7s. 3d.

BORACIC ACID.—Crystals, 22s.; Powder, 24s.

BORAX.—Powder, 14s. 6d.; Crystals, 14s.

BROMIDES.—Potassium, 1s. 11½d.; Sodium, 2s. 2½d.; Ammonium, 2s. 3d.

CAFFEINE.—10s. to 10s. 9d. per lb.

CARBOLIC ACID.—Quiet, steady business. Crystals, 34° to 35° C., 5d.; 39° to 40° C., 5¼d.; detached crystals, 39° to

40° C., 6¾d. ; crude, 1s. 6½d. per gallon ; liquid (95 to 98 per cent.) of pale straw colour, 1s. 2d. per gallon.

CASCARA—Very firm. Further sales have been made at 55s. for old dark. Little or nothing can be obtained of new crop.

CODEINE—Firm at 10s. per oz.

CREAM OF TARTAR.—98 per cent., Foreign, powder, 90s. ; 99 per cent., 91s.

CREOSOTE.—1¾d. per gallon.

GLYCERIN.—For half-ton lots, 68s. per cwt.

MERCURIALS.—Calomel, 3s. 0½d. ; Corrosive Sublimate, 2s. 8½d. ; White Precipitate, 3s. 7d. ; Red Precipitate, 3s. 4½d.

MORPHINE.—4s. 6d. to 4s. 8d. per oz. for the Hydrochlorate, according to quantity.

NAPHTHA.—Crude, 3¼d. per gallon.

OLIVE OIL.—Mogador, £32 10s. Spanish, £32.

OPIUM.—The market remains firm, but there is little doing either here or in Smyrna or in Constantinople. Fair business has been done in Persian, to arrive, at 10s. Prices for other varieties remain the same as those reported last week.

OTTO OF ROSES.—Virgin Serail, finest Kezanlyk, Turk. oz., 18s.

OXALIC ACID.—2¾d., delivered free, London.

QUININE—Is quiet. For B&S and Brunswick Sulphate 11¼d. is asked, though small sales are reported a fraction lower.

SENEGA.—Sales have been made at 2s. 7d. to 2s. 7½d., c.i.f., and now 2s. 9d., c.i.f., is asked. Reports are to hand that this root is very scarce, owing to the cause mentioned in these columns last week. Very little is obtainable at the moment.

SHELLAC—Is very firm. Some spot sales of fair TN Orange have been made at 144s.

SULPHATE OF AMMONIA.—£12 7s. 6d., Beckton terms.

TARTARIC ACID.—English, 1s. 1½d., spot. Foreign is ¼d. per lb. cheaper.

Foreign Markets.

CHEMICAL INDUSTRY OF GERMANY.—" After agriculture, mining, the iron and textile industries, the chemical industry to-day ranks fifth in the commerce of Germany," so says Mr. Consul-General Francis Oppenheimer in his report on the trade and commerce of the Consular district of Frankfort-on-Main, which includes the province of Hesse-Nassau and the Grand Duchy of Hesse, for the year 1902. According to official statistics, the goods produced by the chemical industry in 1897 amounted to 8,311,279 tons, and represented a value of 947,902,570 marks. 6,589 chemical concerns were then counted, with 135,350 hands (in the year 1900, 7,169 concerns, in the year 1901, 7,352 concerns) ; in the year 1898 the total of wages paid amounted to 129,638,202 marks (in 1900, 154,000,000 marks, in 1901, 159,000,000 marks), *i.e.*, on an average 948 marks were earned per annum, against 885 marks in 1894. The Consular district mentioned above is the centre of the German chemical industry, and it is expected that its trade may be materially affected by the terms of the new Customs tariff. On the following articles entirely new Customs duties are proposed :—

Articles.	Rate per 100 Kilos.	Articles.	Rate per 100 Kilos.
	Marks.		Marks.
Sugar of milk	80	Blue vitriol	2
Citric and tartaric acid	8	Pyroligneous spirit	20
Carbonate of ammonia	5	Saccarhine	8,000
Tartarated antimony	8	Extracts, tinctures—	
Cinnabar	10	Non-etheric, without	
Gall-nuts and catechu	3	alcohol	40
Quebracho bark	7	Patent medicines	500
Caseine	10	Galangal	50
Chloral hydrate	20	White canella	50
Cream of tartar	8	Castor oil	2
Calcined tin	6	Olive oil	2

On the following articles, amongst others, Customs duties are to be increased :—Aniseed, fennel, seed, coriander, cummin, etc., arrowroot, potash, ether of every kind, artificial scents, chloroform, collodion, extracts, tinctures, containing ether or alcohol. The rates are to be reduced on carbonate and bicarbonate of sodium, caustic soda, bleaching powder, red pepper, vegetable wax, beeswax. The mutual arrangement by which no bromine is to be exported from Germany to the United States, and none to be imported from there, and by which it was intended to keep a free hand in both countries as to the price of bromine, has latterly been impaired, because American bromine preparations are said to be now imported, viâ the United Kingdom. The annual production of bromine in America is estimated at 550,000 lb., the German at 500,000 kilos.

PERSIAN OPIUM.—The British Consular Agent in his report on the trade of Kermanshah for the year 1902-3, states that at the beginning of the buying season in June, opium was sold at 2,000 krans per case of 22 mans Tabrizi, it reached 2,700 and 3,000 krans later on, and gave a very good profit to exporting merchants, some of whom doubled and even trebled their capital in the course of four or five months. The prospects for the new year are not so favourable, and there is no doubt that the heavy export duty will have some effect on the market in Kermanshah. During the year ending March 23, 1903, 57 krans = £1.

TRADE NOTES.

Harrington Bros., 4, Oliver's Yard, City Road, E.C. For information concerning preparations of radium readers should apply to the above up-to-date firm of manufacturing chemists, who are in a position to supply radium barium bromide, as well as phosphorescent zinc sulphide, for radium experiments.

W. Martindale, 10, New Cavendish Street, London, W. Among the novelties included in the current number of the price-list issued by this firm from the above address are the following :—Atoxyl, an arsenic compound, similar in composition and use to the cacodylates ; Boro Talc (Martindale) ; Capsules Chlorodyne (Martindale) ; Levuretin, a new and active dry yeast ; Triangular Swabs, as suggested by Jackson Clarke, F.R.C.S. ; Zinc Sulphide "active," for radium experiments, and Zinc Sulphide screens.

LONDON GAZETTE NOTICES.

PARTNERSHIPS DISSOLVED.

Jacob Snowman and Percy Tranter Goodman, medical practitioners, 75, Brick Lane, Spitalfields, E. Debts will be received and paid by P. T. Goodman.

Russell Steele and Arthur Gerald Welsford, general medical practitioners, Hemel Hempstead. Debts will be received and paid by R. Steele.

Walter Wray Hopkinson and John Hardy Barrick, trading as chemists and druggists and confectioners, 53-55, St. Sepulchre Gate, Doncaster. Debts will be received and paid by W. W. Hopkinson.

RECEIVING ORDERS IN BANKRUPTCY.

Frank Booth, described as a druggist, North Bar Without, Beverley, and at Medical Hall, New Street, Ossett.

Edward Samuel Balchin, trading as Cosway and Rutter, chemists, 109, High Road, Kilburn.

John Ernest Edington, chemist's manager, 114, Hopwood Street, Liverpool, lately of 31, Bostock Street, and of 71, Bostock Street, Liverpool.

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

The Dispensing Difficulty.

The personal element instinctively asserts itself in all epistolary controversies where the point at issue is more or less subjective, so that the subject treated above must inevitably be treated as it appeals to the temper of the writer; and this is the tendency of the age. When a person, in whatever sphere of life, elects "to speak out," he should always be prepared to meet unstinted opprobrium. Indeed, it would appear to be a condition upon which some controversy is based. When I began to read Dr. Walker's (out of courtesy I prefix the title "Dr.") letter, in reply to my own last week, I said to myself, Now, here is a contributor who has something to say—who has some valuable ideas to offer on the subject; but, as I read line after line, I observed that his letter was instinct with wrath, and that, as I approached the end and his fury was spent, nothing but ashes remained. Now, I do not wish to quarrel with Dr. Walker, but, from the spirit of his letter, I will take him seriously. In closely following his analysis of my own letter I find that he has falsified a phrase here, garbled a clause there, and generally misrepresented me everywhere. Of course, he did not read my letter carefully. Dr. Walker has had forty years' experience—well, that is much more than I have had; but experience is of no account unless observations have been made during the time. For four years I have made many observations, and the results of those observations were embodied in my letter. Whilst he appears to have a supreme contempt for those chemists whose chief instrument is "abuse," he is not conscious of his own talent in that form.

I suppose that some day that vile word "quack" will become mythological. To apply the epithet in the sense that it suits Dr. Walker's fancy to apply it to chemists is certainly out of the bounds of all decorum and "elevation," for no person with the slightest pretensions to elevation or esteem would thrust epithets of this sort as a make-shift for logical reasoning. I do not think I have yet met a chemist whom one could truthfully describe a quack. Because a chemist studies medicine for its own sake, or for his own desire to increase his knowledge, are we to imply that such a person is a quack? To answer Dr. Walker's letter adequately would demand more space in the *Pharmaceutical Journal* than the Editor would permit, so that I shall just touch upon a few salient features—which, I regret to say, are a thorough digression from the point under discussion—in reply to Dr. Walker's.

To speak of jealousy, to deny ability and energy to a chemist under these circumstances is to admit one's own inability to handle the topic of discussion. Me, Dr. Walker has attempted to diagnose in the psychological sense, and here he has failed. Had he tried a physiological diagnosis he would have done the same. Of course, I am glad there is a corner on the earth where between chemist and doctor there is no discord. This I do not dispute. Here, I might mention, for Dr. Walker's benefit, that most of my friends are medical men, with whom I have often discussed the dispensing difficulty. And I might also say that with much of the substance of my letter they agree. It is from this frequent contact with medical men that I am enabled to form notions of likes and dislikes between the two.

The real difficulty of the situation is, that it seems almost impossible to obtain ideas or opinions from the thousands of doctors and chemists in the country. That they have ideas no one would doubt; but, whilst they remain unexpressed, there will always be fury and counter fury amongst the few. The only way to stimulate thought, the only way to make us feel the inconsistency of things, is "to speak out," as I said above, and then it is probable there may be a chance of rectifying old abuses; but even then, before any move can be made, it is essential that we should see things as they really are. Now, Dr. Walker, at the very outset, in his letter fulfilled his mission, which was to abuse me only; and here he stops. Not one single idea does he possess, not one single suggestion can he make, that would be likely to commend itself to medical men or pharmacists. His sense of elevation is a meagre one. The zenith of elevation to him is to become a medical man, and, having done this, you jealous person, you have achieved all that is to be achieved—in other words, you can go no higher. Now, when will all this nonsense be knocked out of us? I thought all this rubbish about elevation had been forgotten decades ago; but, no, it leaps up now and again in most unexpected places. I might inform Dr. Walker *(en passant)* that I was actually reading for medicine some few years back, but, owing to my father's sudden death and his unfortunate speculative losses, I was withdrawn from school. This, however, did not make me miserable, and Dr. Walker must now be told that it was not due to lack of ability or want of energy that I gave up medicine.

No, as far as ability is concerned, a mind below (in range) mediocrity is quite sufficient to obtain a degree or a qualification in medicine, and Dr. Walker must know that, now-a-days, a person who can pass the Minor at one stroke could qualify in medicine with little difficulty, where the subjects are taken piecemeal. Suggestions are wanted from chemists and doctors alike if this change is to be brought about, and, weekly, I look into the Journal for these suggestions. Mr. Walker, the chemist, has none. Dr. Walker, the surgeon, has none. Who has?

Sheffield, July 28, 1903. Bernard Ellis.

Medicine Stamp Duty.

In your article, in last week's issue, on the Medicine Stamp question, I notice it is stated that the Board will insist on the payment of duty in the case of medicine dispensed from a physician's prescription bearing on the label any indication of the ailment for which it is prescribed. Surely this is rather an absurd interpretation of the Act, which was never intended to apply to prescriptions. I think the Board would find it very difficult to establish their claim to liability in this case. If they did, I imagine our medical friends would strongly protest against it, and would consider it an unwarrantable interference between the doctor and his patient. I should be pleased to hear the opinion of others on this point.

Sevenoaks, August 4, 1903. R. Barrat.

Hitherto I have advocated setting our houses in order, in conformity to latest requirements of Inland Revenue, and not attempt to defy them or remonstrate, as I have felt assured that, after we have settled down to the new conditions we shall have no real cause for complaint. But the latest phase of Revenue interference—viz., doctors' and surgeons' prescriptions naming a remedy or disease—calls forth our strongest protests.

I have not the slightest doubt but that the medical profession, whether they dispense their own prescriptions or not, stands far and above the reach of such humiliating conditions, and that we, as "qualified handmaids of such distinguished callings," are also beyond their reach. The medical profession and the pharmaceutical (strengthened by the voices of the chemists' associations) should unitedly make a very determined stand on this serious and most repugnant decision, and lose no time about it. One thing I would not be sorry to see, and that is with regard to the objectionable custom of patients lending their prescriptions to those who thus save a doctor's fee. By all means confine the rights and privileges of doctors' prescriptions to the actual patient under treatment, and make it penal for the abuse where remedies or diseases are named. This may meet the Inland Revenue's avaricious needs, and I think would not be opposed by the faculty.

August 15, 1903. "Search-Light" (215/3).

The Conference at Bristol.

At one of the meetings of the British Pharmaceutical Conference held here last week I was compelled to make a severe comment on the ungentlemanly remarks made by Mr. W. S. Nicholls regarding apparatus previously described by my colleague, Professor Sydney Young. By inadvertence, the remarks made by me have been ascribed to Mr. J. T. Davies, and I must ask you to rectify the error. May I also take this opportunity of thanking my fellow pharmacists for the hearty way in which they showed their approval of my action?

Bristol, August 1, 1903. Oliver C. M. Davis.

Side-Lights on the B.P.C., 1903.

Said a university professor, wholly unconnected with pharmacy, to the writer, at one of the functions largely associated with *Nicotiana tabacum* (N.O. Solanaceæ) at the recent B.P.C., "I had no idea you people were so fraternal and sociable." The remark set me thinking, and my thoughts were not altogether conducive to self-congratulation. Talking of the B.P.C., what an admirable institution it is! The papers are good, and that, of course, is what we go to a conference for; the holiday is good; but, over and above all, the social intercourse is good. The visitors naturally enjoy themselves; they come for the express purpose. The readers of papers enjoy themselves; for it is their innings, and, even if they do not have the rapture of hearing their own voices, they have the unanimous votes of thanks for papers "taken as read."

Then, as to the local people, I think they get the greatest good of all. For a whole twelve months there have been meetings and committees and district visitings. In all seriousness, what an unmixed blessing is the almost compulsory interchange of ideas consequent on the preparations for such meetings as the B.P.C. The panaceas for the ills to which pharmacy is heir are only equalled by the ills themselves. Mr. Leo. Atkinson suggests a "Pharmacy Guild." The British Pharmaceutical Society is always with us, and we are continually hearing complaints of our lack of union and lack of readiness to support these and kindred institutions. The time-honoured replies of the culprits are "We have no time," or "What do they do for us?" Is not the real reason, the stumbling block in our way, the lack of friendliness amongst us? Mr. A sees no reason why he should call on Mr. C, who has just come to the district. Both A and C are excellent fellows; had they met in their college days they would have been great chums, but now—— And so it goes on. It is very probable that the B.P.C. does much good for which it is never credited in bringing local men together to meet on the common ground of hospitality to visitors. If the Conference meet, say, in Dunchester, next year, and supposing that there are forty chemists in Dunchester, only ten of whom are members of the Pharmaceutical Society, surely the *camaraderie* which will spring up among the forty in their efforts to give the B.P.C. of 1904 a good time will also convince the majority of these forty that mutual acquaintance and interchange of the little courtesies that cost so little and mean so much are good things, and Mr. Secretary of the Pharmaceutical Society will stand a much better chance of gaining, say, twenty-eight new members. The writer holds no brief for the Pharmaceutical Society, and is not even a "Square" man, but he is convinced of the folly of holding aloof from the parent Society and then grumbling when it is not sufficiently active to please one. To come to the point, however: Is our pharmacist to be man or machine? We all know the plaint of the harassed pharmacist—shop, accounts, bed—a bad enough programme, in very truth. If every pharmacist would only throughout the year, and not only at Conference times, cultivate a little more the society of his fellow men and fellow pharmacists, he would find life at least a happier thing.

Let us regard it as a point of honour to call on the new pharmaceutical arrivals, and not regard them with an attitude suggestive of suspicion that they are rogues and vagabonds. Again, a pipe smoked in concert is far sweeter than that smoked in solitary gloom. Let us take a hand in politics, municipal and national, and we shall come infinitely nearer the *mens sana in corpore sano*, which is a condition, after all, not entirely incompatible with the sign of the pestle and mortar.

Bristol, August 5, 1903. "B. R. T." (215/2).

Liquor Sennæ Concentratus.

Referring to the discussion which took place at the late Conference, and reported on page 211 of the Journal of the 1st inst., I beg to direct the attention of your readers to page 886 of the *Pharmaceutical Journal* of May 8, 1875, wherein I published a formula for this concentrated infusion or liquor. I then stated that I had made the preparation for twenty-seven years, and subsequent to that date I have continued to manufacture it, my experience thus extending over nearly forty-eight years. As many of your readers may not have kept the journals, I give the formula in detail:—"Mix 13 oz. of distilled water, 3 oz. of 90 per cent. alcohol, and 30 min. of liquor potassæ, and pour it over 6 oz. of small sifted Alexandrian senna in a well-corked jar. Stir once or twice daily for seven days. Now submit the ingredients to strong pressure and strain the liquor through fine muslin or calico. In about a week a slight deposit takes place, from which the supernatant liquid is to be decanted and the residue is to be filtered." One part of this preparation mixed with 3 parts of water forms an infusion of senna which I believe cannot be surpassed. I have now some made over twenty years ago, and it is just the same as when first manufactured. I think the action of liquor potassæ on many vegetables should be studied, for, from my experience, I have found it, in very small quantities, to be the best solvent of their active principles.

Clapham, S.W., August 5, 1903. Percy Wells, Ph.C.

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Quinine Wine (J. H. S.—92/24).—Any person who holds a wine licence can sell Vinum Quininæ, B.P., but a chemist and druggist can sell it without having a licence,

Pure Drugs (J. T. R.—214/34).—The paragraph to which you take exception is quite correct, as there is no restriction upon the sale of an entire drug sold without a recommendation.

Salve (J. E.—92/23).—Rub down 20 grains of ichthyol with 30 grains of precipitated sulphur and incorporate with 950 grains of the warmed zinc ointment. This is obviously the easiest way of calculating the quantities, and there would be no objection to your throwing away the 40 grains of excess weight.

Ferri Alginas (H. K. W.—92/22).—This is a ferric compound of an acid obtained from seaweed. It is a tasteless insoluble brown powder, having a composition represented by the formula $C_{76}N_{77}Fe_3N_2O_{22}$. The dry powder is usually given in doses from 2 to 15 grains in cases of anæmia and chlorosis. For further particulars refer to the paper read by Mr. E. C. C. Stanford before the British Pharmaceutical Conference at Belfast, and printed in the *Pharmaceutical Journal*, August 13, 1898.

Solanum Dulcamara (B. J.—92/26).—This drug was used, with wild sage and betony, in the thirteenth century, by the Welsh "Physicians of Myddvai" for the bite of a mad dog. It was also used by various German physicans and botanists, among whom was Tragus, in the middle of the sixteenth century. The alkaloid solanine was detected by Desfosses in the leaves and stalks, and by Péschier in the berries, some eighty years ago. Winckler, 1841, stated that the alkaloid of dulcamara stems was amorphous, and Moitessier, 1856, confirmed this. Zwenger and Kind, and, independently Gruchin, in 1858 and 1859, found solanine to be a conjugated compound of sugar and a peculiar crystallisable alkaloid, solanidine. Wittstein, 1852, claimed also to have found another alkaloid, dulcamarine, but this was proved in 1875 by Geissler not to be an alkaloid at all. For further information, refer to Flückiger and Hanbury's 'Pharmacographia.'

Correction.

Liability to Medicine Stamp Duty.—At page 202, column 2, line 31, *after* "circumstances," *add* "when sold by a chemist and druggist or other specially qualified person."

PUBLICATIONS RECEIVED.

The Photogram. Vol. X., No. 116. Pp. 225-256. Price 3d. Hints for the Holidays. London: Dawbarn and Ward, Limited, 6, Farringdon Avenue, E.C. August, 1903. From the Publishers.

Matriculation Guide, No. 34, June, 1903, With Papers Set at London University, and Articles on Text-Books for Use Under the New Regulations. Pp. 74. Cambridge: University Tutorial Press, Burlington House. From the Publishers.

MARRIAGE.

Shelley—Ellis.—On August 5, at St. Mary's, Clapham Park Road, George Alic Henry Shelley, M.P.S., to Ada Elizabeth, only daughter of James Ellis, of 47, Rosenau Road, S.W.

DEATHS.

Allen.—On July 27, Malcolm Watlock Allen, eldest son of Mr. William Clarkson Allen, of the firm of Messrs. Stafford Allen and Sons, Limited. Aged 31. (See page 235.)

Bailey.—On August 2, George William Bailey, Chemist and Druggist, North Walsham. Aged 61.

Bailey.—On June 30, John Townsend Bailey, Chemist and Druggist, Brown Royd, Bradford.

Casely.—On July 23, Thomas Casely, Chemist and Druggist, Cheshunt, formerly of Brighton. Aged 53.

Grieves.—On July 31, George Grieves, Chemist and Druggist, Seaforth, formerly of Liverpool. Aged 74.

Hulme.—On July 23, Thomas Hulme, Pharmaceutical Chemist, Bury. Aged 47. Mr. Hulme, who was found dead in his shop at Rochdale Road, was incorrectly described by a reporter in last week's issue as "Thomas Hudson." Mr. Hulme had been a member of the Pharmaceutical Society since 1892.

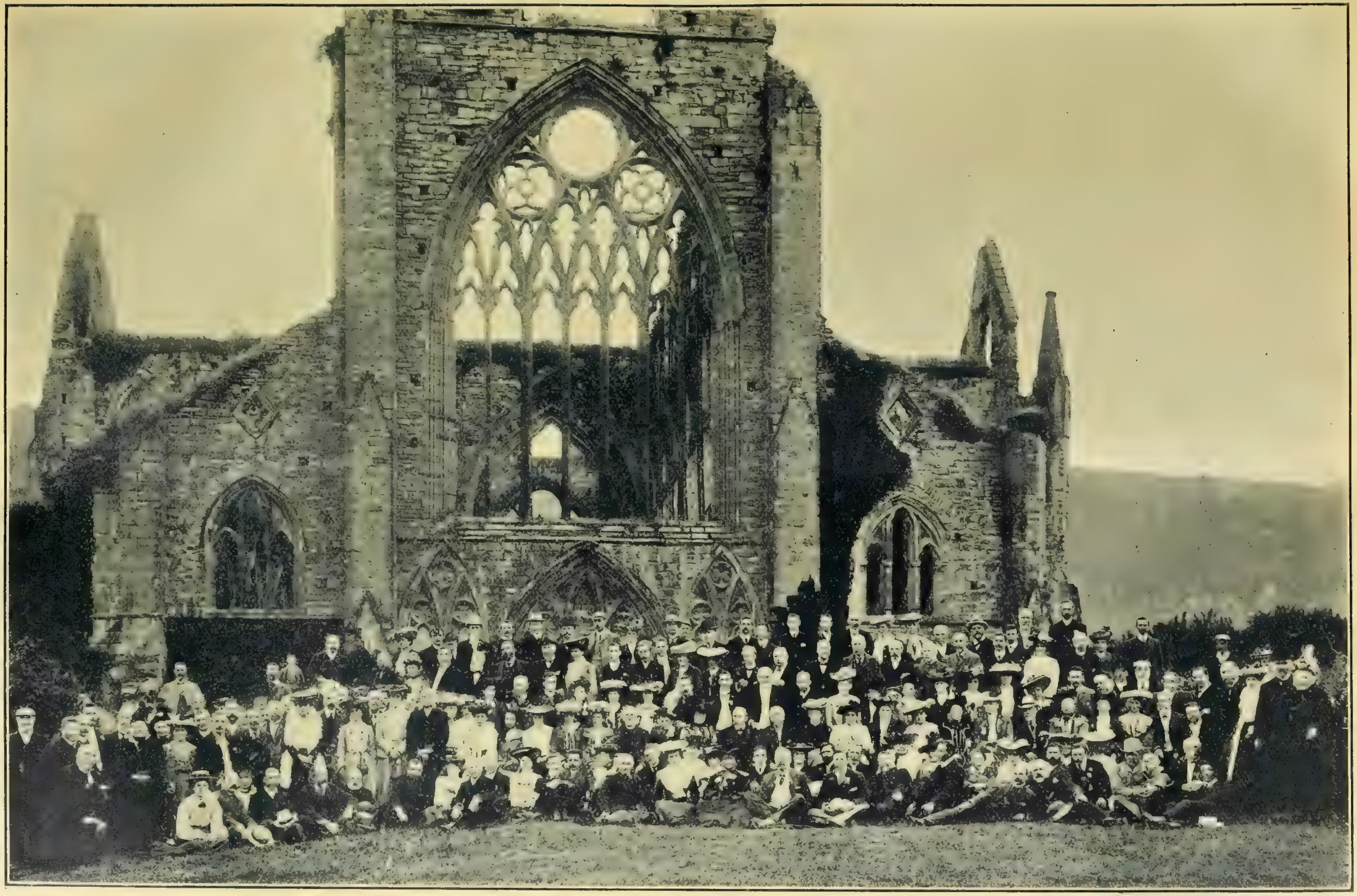
Martin.—On July 20, John Woolcock Martin, Pharmaceutical Chemist, Ashburton. Aged 31. Mr. Martin had been a member of the Pharmaceutical Society since 1900.

Mathews.—On July 31, William Mathews, Chemist and Druggist, Kensington, formerly of Wandsworth. Aged 55.

Nocard.—The death is announced from Paris of Professor Nocard, an eminent bacteriologist and authority on infectious diseases in animals. Aged 53. The *Morning Post* states that Professor Nocard was one of Dr. Pasteur's chief assistants in the researches into the curative properties of serums. For several years he was the head of the famous veterinary college at Alfort, but he resigned that post in order to devote himself entirely to research. He took an active part in combating Dr. Koch's theory of the non-transmissibility of bovine tuberculosis to human beings. Last March Professor Nocard stated that he would shortly be able to announce a remedy for the foot-and-mouth disease, but he was struck down before he could complete his investigations.

Rowe.—On July 28, Sampson Taylor Rowe, Chemist and Druggist, St. Ives. Aged 75.

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Alcock, Barbin, Barrat, Boorne, Branson, Cecil, Crake, Daine, Davies, Druce, Ekins, Ellison, Findlay, Firth, Gardam, Garry, Goodwin, Gwinn, Heap, Hill, Hulme, Kerr, Kindall, Knott, Lester, Lodge, Martindale, Muir, Pilcher, Robinson, Row, Sage, Shattock, Shelley, Shepherd, Stooke, Taylor, Wells, Withers,



THE BRITISH PHARMACEUTICAL CONFERENCE AT TINTERN ABBEY, JULY 30, 1903,

Telegrams "PHARMACEUTICAL JOURNAL LONDON"
Established 1841
The Pharmaceutical Journal
A WEEKLY NEWSPAPER
FOR CHEMISTS AND DRUGGISTS.
The Oldest Organ of the Drug Trade in Great Britain.
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The Journal circulates widely in the United Kingdom, France, Germany, Austria, Italy, Russia, Switzerland, Canada, the United States, South America, India, Australasia, South Africa, etc. It is supplied regularly to the majority of the Chemists and Druggists in business in England, Scotland, and Wales, and to the whole of the members of the Pharmaceutical Society of Great Britain. Orders for Advertisements or for Copies of the Journal should be addressed to the Publishers, 8, Serle Street, London, W.C.

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Annual Subscription, 20s. Post Free; Single Copies, 4d. each, by Post, 4½d.

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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, August 13, 1903.

A New Chemists' Assistants' Association has been formed in Dublin, and the first meeting was held on Wednesday of last week.

The Proprietors of the far-famed "Ballikinrain Ant-Destroyer" have been fined for an offence under the Fertilisers and Food-Stuffs Act, 1893.

The Royal Horticultural Society is to be provided, through the generosity of Sir Thomas Hanbury, K.C.V.O., with a new garden at Wisley, near Woking.

The Government Laboratory, under the guidance of Dr. T. E. Thorpe, has done much valuable work, parts of which have a considerable interest for pharmacists.

Further Investigations on the external causes which affect the emission of heat by radium have resulted in a contribution by M. Curie to the Physical Society of France. That scientist's conclusions are briefly summarised in this issue.

Divisional Officers of the Pharmaceutical Society and others have been invited by the Registrar to lend their co-operation and assistance in regard to the chemists' formulary which the Council of the Society has decided to publish.

The Dispensing Difficulty is now being discussed at length in the columns of both medical and lay periodicals. In an editorial comment a medical contemporary is rebuked for grossly underestimating the standard of the Minor Examination and the value of the qualified chemist as a public safeguard.

A Correspondent writing from Pretoria says that a chemist's assistant cannot live respectably in Johannesburg or the capital of the Transvaal Colony under £11 10s. per month. The usual price for an 8 oz. mixture, tablespoonful dose, is 3s. 6d., and medical men are the only prescribers and hemists the only dispensers.

The First Instalment of the paper on "Territorial Representation," which Mr. J. F. Tocher read before the annual meeting of the Federation of Local Associations at Bristol, is printed in this issue. Mr. Tocher has entered very fully into his subject, the paper containing a number of intricate mathematical calculations.

Fifty Pounds and Ten Guineas Costs was the exemplary penalty meted out on Friday, August 7, by the magistrate sitting at the North London Police Court, to Parkes' Drug Stores, Limited, for selling "Blaud's Iron Pills" containing only 4·2 per cent. of ferrous carbonate The magistrate held that Blaud's pills should contain about 20 per cent. of the ferrous carbonate.

Two Successful Prosecutions under Section 15 of the Pharmacy Act, 1868, are reported in this issue. A defendant at Glasgow, who had falsely represented himself to be a registered medical man, pleaded difficulty in obtaining qualified assistants of temperate habits. He was fined £3, with £2 2s. costs, and paid "under protest." The unqualified proprietor of a Leicester drug business pleaded guilty to selling laudanum.

The Medicine Stamp Difficulty promises to solve itself in due course, and chemists are advised to take Mr. Carteighe's advice and not get into a "blue funk" on the subject. The Inland Revenue authorities, who were this week interviewed by the Editor of the Journal, are anxious to assist registered chemists and druggists to carry on their business in a legitimate manner, without being unduly hampered with unreasonable restrictions. But the public revenue must be protected (see pp. 265-6).

The Chief Feature of the Chemical Market this week is the decline in mercurials following on the reduction of Quicksilver. The most interesting items in the Drug Report are Senega and Cascara, both of which are dearer.

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A VISIT TO SOMERSET HOUSE.

The receipt of a number of queries, of the most varied character, on matters connected with the incidence of medicine stamp duty, suggested the desirability of consulting the authorities at Somerset House on some of the points at issue. The never-failing courtesy of the Inland Revenue officials enabled the Editor to arrange for an interview without delay, and the information gathered in the course of the conversation which then took place fully justifies the advice given by Mr. Carteighe a few weeks ago, when he advised chemists and druggists not to be in a "blue funk," or to apply frantically to irresponsible persons for relief. To begin with, it may be stated that the Board of Inland Revenue is, as yet, far from decided as to the exact course which should be pursued at the present juncture, and it is far from improbable that matters may yet develop in a way which will prove more satisfactory to chemists generally than the most sanguine have yet imagined to be possible. The Board is quite in sympathy with chemists and druggists, and has arrived at the general conclusion that the Medicine Stamp Duty Acts must henceforth be administered strictly in accordance with the original intentions of the Legislature. That is to say, it is now recognised that the Acts were meant to restrict quackery, and were not designed to embarrass the legitimate practice of properly qualified dealers in medicine. These facts have been somewhat obscured in the course of years, but the Board of Inland Revenue now

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intends to act on the principle that liability to medicine stamp duty is only incurred by chemists when proprietary rights are claimed in medicines sold by them, or when secrecy is observed with regard to the composition of the articles sold.

The change in practice thus resulting from the recent decisions in the law courts, which have attracted an abnormal share of attention during the past few weeks, ought to prove beneficial to pharmacy as a profession; and the Somerset House authorities are of opinion that it will, and should, do so. Moreover, they are anxious to assist as far as possible in minimising the unavoidable inconvenience caused by the changed aspect of affairs. But it is necessary that a certain amount of patience should be exercised while the old machinery is being adapted to the newer circumstances. Though the broad question of principle has been decided by the Board of Inland Revenue, there are yet many matters of detail to be settled; and it will be wiser for chemists and druggists to assent to an amicable settlement of the various points than to throw obstacles in the way of a satisfactory conclusion, by suggesting difficulties which experience seems likely to prove to be non-existent. The Board now recognises the fact that chemists are exempted from disabilities to which it was formerly thought they, in common with all other persons, were subject; and it is honourably endeavouring to re-arrange matters upon a satisfactory basis, without seeking fresh Parliamentary powers. But public interests are at stake, and it is regarded as essential that there should be no falling off in the national revenue owing to changes in the methods of administering the Statute. While, therefore, sympathising with chemists in the difficulties caused by the present state of uncertainty, the Board feels that it must simplify its procedure by withdrawing concessions which have acquired a time-honoured sanction. If the result of further litigation should prove that the position now taken up by the Board is untenable, and the public revenue is thereby endangered, further amendment of the Medicine Stamp Duty Acts may be anticipated, and there will be a risk of the advantage now held by chemists and druggists being seriously endangered.

For the present, however, it is hoped that no change in the law may be necessary; and it is intended, as already stated, to act on the principle that chemists and druggists are free to sell and recommend medicines as they like, provided no proprietary rights are claimed therein, and no secrecy is observed with regard to the composition of the articles sold. It is only in respect of the latter condition that there is to be any change in practice, and in that respect only will any inconvenience be caused to chemists and druggists. So long as they disclose in an adequate manner the constituents of all non-proprietary medicines sold by them they will not be required to pay stamp duty thereon, but any reservation of essential particulars must be paid for. By maintaining secrecy with regard to the composition of a medicinal preparation sold by him the chemist converts it into a nostrum; no one else can make and sell the same article, and the advantage which he thus gains will in future be regarded as a taxable business asset. If, however, he discloses the formula of the preparation, so that all the world may know of what it consists, he will—in virtue of his professional qualification—be entitled to exemption from liability to stamp duty in respect of that article. In a future number of the Journal it is proposed to give such detailed information as will enable readers to determine exactly what they may or may not do, without incurring liability to stamp duty. Steps are also being taken to enable chemists and druggists to fall in with the Board of Inland Revenue's change in practice, with a minimum of inconvenience. Meanwhile, however, patience must be exercised, and a certain measure of trust reposed in the responsible authorities, by whom alone matters can be properly arranged.

THE DISPENSING DIFFICULTY.

The question of the division of the two branches of the practice of medicine—prescribing and dispensing—which was reopened in the columns of the Journal a short time back, has now become a topic of daily discussion. It will be remembered that some weeks ago, in publishing a report of an interview with a Harley Street physician, the Journal stated that, among an important section of the medical community, there was a feeling that the time for the complete separation of the two callings was at hand. It was only natural that such a statement as this, appearing in the official organ of the Pharmaceutical Society, should attract the attention of both doctors and chemists. Interest in the subject is now being evinced by the lay press, and through that medium the British public is receiving detailed and embellished descriptions of the medical back-room. With a portion of the presidential address, delivered at the Bristol Conference, as a background, medical, pharmaceutical, and lay contemporaries alike have given space to the consideration of what really is a very important question. Opinions of the most varied kind have been expressed, and comments of an unfortunate character come from the quarter whence it was least to be expected, the august utterances which one habitually looks for in the *British Medical Journal* being disguised beyond recognition in a criticism of Mr. Idris's address.

It is rare indeed that any fault can be found with the treatment meted out to chemists by our medical contemporaries, and that the usually well-informed editor of the official organ of the British Medical Association should allow such statements as are here reproduced to appear in his paper is, indeed, a matter of surprise. "If ordinary dispensing were in any way a difficult matter," says the article referred to, "the 'Minor qualification' as dispenser, in virtue of which dozens of young men and women receive the testamur of the Apothecaries' Hall every year, would not be allowed to exist; for the practical experience in dispensing demanded is of the most elementary kind." One is accustomed to such statements in the columns of the halfpenny press, but they are surely out of place in the *British Medical Journal*. Again, "given a prescription which is capable of being read," says the medical commentator, "nothing is easier than to measure out the desired quantities," which observation is perfectly correct. But it should hardly be necessary to point out that if every prescription were dispensed exactly as it was written, the result would be sad to contemplate. There are numbers of medical men who owe much to chemists for having pointed out errors of dosage in their prescriptions; and for this the said medical men are, as a rule, duly grateful. Moreover, does the knowledge the pharmacist possesses with regard to the chemical changes which might take place when two ingredients interact go for nothing? and, as an expert in matters of incompatibility and solubility, is the pharmacist never required to safeguard the patient? But to dwell on this point would be superfluous.

Dealing with Mr. Idris's statistics concerning fatal accidents in doctors' surgeries and chemists' shops, which, it will be remembered, numbered sixteen in the former case and seven in the latter during a given period, the writer of the *B.M.J.* article, after working a sum in simple subtraction and performing a calculation involving the rule of three, finds that "the number of accidents due to mistakes made by doctors or their assistants in dispensing, and the number of accidents due to corresponding mistakes made by qualified chemists, appear to be practically the same." Now, it is not the intention of the Journal to dwell on an aspect of the question which could only give rise to distasteful and undignified controversy, and this phase is only mentioned with the view of modifying the arithmetical calculations of our contemporary. At the same time, if the matter is to be viewed from this standpoint, it must be borne in mind that, in the words of the Harley Street physician mentioned above, "What influenced the Legislature in foreign countries was the possibility of the doctor misusing, carelessly or otherwise, the unchecked power which is afforded to a medical man who supplies his patient with drugs of his own prescribing." That is not, however, a desirable point of view from which to regard the question, and, to repeat what was recently said in these columns, if any useful purpose is to be served, the difficulty must be approached without animosity and in a friendly spirit of compromise. It is pleasing to note the statement that "the majority of medical men would probably be glad to be relieved of the work and worry of dispensing if there were any convenient substitute for it." To find this substitute is what many earnest medical men are endeavouring to do. It is to be feared, however, that they will not receive much assistance in their search from a journal which makes such unfortunate observations as those quoted from its pages. For the information of the aforesaid periodical, and for the future guidance of the writer of the article referred to, the following gratuitous information is appended:—

(1) The Apothecaries' Hall does not grant the "Minor qualification."

2) The practical experience in dispensing required by a Minor candidate is not of the most elementary kind. As a matter of fact the examination in this subject is probably more stringent than that of any other examining body in the whole world ever has been.

(3) A man should not be trusted to dispense medicines if the limitation of his capabilities is the power "to measure out the desired quantities." Otherwise he may measure out 1 oz. of laudanum instead of 1 drachm, which a careless doctor intended to write, but did not.

(4) Seven is not "practically" the same as "Sixteen," and can only be made so by elaborate systems of permutations, combinations and imaginations.

THE PROPOSED COMPENDIUM OF MEDICINES.

The following letter has been sent by the Secretary and Registrar of the Pharmaceutical Society to divisional officers of the Society, to the honorary secretaries of local associations, and others:—

Pharmaceutical Society of Great Britain,
17, Bloomsbury Square, London, W.C.,
August 10, 1903.

Dear Sir,—You have no doubt noticed in the current number of the *Pharmaceutical Journal* that the Council at its meeting on Wednesday last resolved that a compendium of medicines in general use, not included in the British Pharmacopœia, should be published annually by authority, and that the first issue should be published in January next.

To enable the Council to carry to a successful issue the work indicated, and to produce an authoritative compilation which shall prove of wide utility, it is essential that the divisional officers of the Society, as well as local associations throughout the country, should cordially co-operate in the collection of suitable formulæ, and I confidently appeal to you to do what you can in this direction.

Any material that you may have in your possession, or may be able to obtain readily, I shall be glad to receive and to acknowledge.

All contributions to the proposed book should be sent to me at the earliest possible opportunity, as the time available for selection and compilation is somewhat restricted.—I am, yours faithfully,

Richd. Bremridge, Secretary.

The invitation here given is to be considered as extending not only to members of the Pharmaceutical Society, but also to chemists and druggists generally. Those who have already sent formulæ to Mr. Bremridge or to the Editor are heartily thanked, but it is found impossible to reply to each contributor individually.

THE MYSTERY OF RADIUM.

The *Times* is able to announce that M. Curie has just communicated to the Physical Society of France a paper giving the results of a recent inquiry into the production of heat by radium and its salts, and the effect of external conditions on this production. When a sample of radium bromide weighing 0·7 Gm. was tested in the calorimetric apparatus devised by Professor Dewar it was found to be capable of volatilising an amount of liquid oxygen and hydrogen equivalent respectively to 6 C.c. and 73 C.c. of the gases measured at the ordinary temperature. It is also found that through a wide range of temperature the thermal emission remains unchanged. Whether at the temperature of a summer day or at that of liquid air, the emission of heat goes on without perceptible variation. When, however, a long downward stride is taken from liquid air to liquid hydrogen, radium shows that it is not always unaffected by external temperature. Within a comparatively short distance of the absolute zero a change occurs in the rate of heat-emission, but not in the direction that might be anticipated in view of the effect of low temperatures on ordinary chemical action. Instead of being reduced, the emission of heat, so far as present *data* can be relied on, is augmented at the temperature of liquid hydrogen, actually increasing in intensity at a point where all but the most powerful chemical affinities are in abeyance. There is no longer any doubt either of the quantity of heat evolved by radium or of the fact that the rate of emission is apparently greater in liquid hydrogen than at any temperature from that of liquid air up to that of an ordinary room. At the beginning of these experiments in liquid hydrogen a contrary result appeared to emerge when the low-temperature thermal measurements were compared with the early Curie values observed at the temperature of melting ice. This led to the discovery that a freshly-prepared salt of radium has a comparatively feeble power of giving off heat at all temperatures, but that its power steadily increases with age until about a month from its preparation, when it reaches the maximum activity, which it afterwards maintains apparently indefinitely. A solution of a radium salt behaves in exactly the same way. Its power of heat-emission is at first relatively low, but goes on increasing for about a month, when it becomes equal to that of the solid salt, and so remains.

THE WORK OF THE GOVERNMENT LABORATORY.

The report of Dr. T. E. Thorpe, principal chemist, on the work of the Government Laboratory for the year ended March 31, 1903, has been published as a Parliamentary paper. The work of the laboratory is to advise other Government departments and to examine goods for the Revenue and other branches of His Majesty's Civil Service. The total number of analyses and tests made in this laboratory during the past year was 61,442. Although this is numerically less than in the preceding year, the amount of work involved was greater, since the articles submitted for test under the corn and grain duties did not lend themselves so readily to classification under fixed rates of duty as did the sugared goods, many of which were thus disposed of in 1901 without actual test. Among the articles examined in the Customs Laboratory are beer, spirits, wine, preparations containing or made with spirit, chicory, coffee, cocoa, dried fruit, tea, tobacco, sugar, molasses, glucose, saccharin, and composite goods containing them, cereal products, coal and fuel, hydrometers and gauging instruments.

The descriptions of imports as given in the merchants' entries were often very erratic, and gave no clue whatever to the real nature of the goods. For example, crushed bones were entered as "semolina," formaldehyde as "acetic acid," fruit juice as "tinned fish," gingerbread as "paints," peas as "cabbage seeds" and "bulbs," sodium peroxide as "fancy goods," varnish as "iron goods," whilst "machinery" and "razor strops" turned out to be tobacco, fumigating powder, and sugar-coated pills respectively. Various special subjects have called for attention during the period under notice. The numerous cases of saccharin smuggling, arsenic in beer, and the lead glazes used in the pottery industry have been the subject of particular investigation.

AGRICULTURAL CHAMPIONS FINED.

Messrs. Alexander Cross and Sons, Limited, Glasgow, whose previous appearances in various Courts of Justice render unnecessary any introduction to readers of the *Pharmaceutical Journal*, were summoned last week at Greenock Sheriff Court for two offences under the Fertilisers and Foodstuffs Act, 1893. One of the charges, which are the first of the kind in Scotland, was that the firm had sold for use as a fertiliser a quantity of Peruvian guano, for which they failed to give the purchaser an invoice stating whether the article was an artificial compound or not, and what percentage of nitrogen, phosphates, and potash is contained in it. Secondly, that the invoice for a quantity of "potassium sulphate" was false, as it described the article as containing a minimum percentage of 55·6 of potassium sulphate, whereas on analysis it was found to contain only 50·01 per cent. of that salt. The second complaint was withdrawn, and a plea of guilty was tendered to the first charge. A nominal penalty was imposed. Members of the House of Commons and of the public will doubtless be more than ever impressed with the *bona fides* of Mr. Alexander Cross, M.P., and with the veracity of his contention as to the general superiority and greater carefulness, as compared with chemists and druggists, of untrained dealers in chemicals.

EARLY CLOSING IN AUSTRALIA.

In most of the proposals that have been made from time to time in this country to fix an hour for the early closing of shops, recognition has been paid to the principle that public health requires, in some form or other, the specific exemption of chemists and druggists. In the Shops and Factories Acts of Australia, also, chemists are exempt from the necessity of closing unless a majority of chemists in any municipality petition the Governor-in-Council to make a regulation requiring them to close at any hour fixed by them. A chemist and druggist in an Australian municipality, where such a petition had been lodged and granted, was recently proceeded against and fined on a charge of having his shop door open after nine o'clock, and of selling a bottle of medicine. It was pointed out by the chief inspector that the prosecuting department would not take proceedings against a chemist who had his shop closed and reopened it for a few minutes to supply medicine when urgently required, but the offence in question was that the shop was not closed at all at the hour agreed upon.

THE REGISTRATION OF VOTERS.

Chemists and druggists, whether in business for themselves or not, should take immediate steps to see to their votes, whether as householders, occupiers of flats, or "lodgers." It may be a matter of considerable importance to those interested in the Acts regulating the sale of poisons that they should be in a position to approach members of Parliament with all the influence possible. It is found by election agents that those who might be placed on the register as "lodgers" are the most difficult to discover. Any man of twenty-one years of age, who has since July 15, 1902, occupied and rented a room or set of rooms, of which the value unfurnished is £10 a year, is entitled to be placed on the register. Forms will be supplied by the returning officer or the election agent of the political party to which the claimant belongs on application, which should not be delayed, as the lists are to be completed in a few days. In the present unsettled state of the Unionist party it is possible that seats which have hitherto been uncontested may be fought at the next general election, and chemists should miss no opportunity of the kind indicated.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Fatty Acids of Egg-lecithin.

H. Cousin, by saponifying egg-lecithin, and precipitating the fatty acids as barium salts has isolated linoleic acid; subsequent precipitation of the remaining acids as lead salts resulted in the separation of oleic, palmitic, and stearic acids, which have previously been recorded. The linoleic acid was identified by oxidising it to tetra-oxy-stearic acid, $C_{18}H_{32}(OH)_4O_2$, which formed white needles melting at 171-172° C.—*Comp. rend.*, **137**, 68.

Stachyose is Manneotetrose.

C. Tanret has examined stachyose, the sugar isolated by A. de Planta and E. Schulze from *Stachys tubifera*, and finds it to be a tetrose identical in every respect with the manneotetrose previously discovered by him in manna (*P. J.* [4], **15**, 255). It has the formula $C_{24}H_{42}O_{21}$; is completely hydrolised by 3 per cent. sulphuric acid into four molecules of monoses, that is, two molecules of galactose, one molecule glucose, and one molecule levulose. With acetic acid it forms only one molecule levulose and a triose $C_{18}H_{32}O_{16}$. This triose is identical with manninotriose.—*Comptes rend.*, **136**, 1,569.

Solar Radiations.

R. Blondot finds that the sun, besides the ordinary heat and light rays, also emits rays which traverse metals, wood, and other opaque substances. These rays, which are named "n-rays," may be detected by the property they possess of increasing the phosphorescence of feebly phosphorescent bodies; in this respect they resemble Becquerel's rays. The presence of these rays in sunlight is easily demonstrated. A tube containing a feebly phosphorescent substance, such as calcium sulphide, is exposed in a perfectly dark room before a window closed by oakwood shutters, 15 Mm. thick. It will be seen that the intensity of the phosphorescence increases opposite the window; if the hand or a sheet of lead be interposed between the tube and the window the light emitted diminishes, to be reproduced on withdrawing the intercepting obstacle. The introduction of several sheets of aluminium between the shutter and the tube does not affect the phosphorescence; nor do cardboard nor a piece of oakwood 3 Cm. thick. A thin stratum of water, however, arrests the rays at once. Clouds passing over the sun also considerably diminish their action. These n-rays may be concentrated by a quartz lens. They are reflected by polished, diffused by unpolished glass. They are without action on the photographic plate. These experiments are easily reproduced; to obtain good results the phosphorescent substance should not be too active, and the tube containing it should be placed on a black paper.—*Compt. rend.*, **136**, 1,142.

New Pepper Adulterant.

V. Paolini finds that grape stones are used to adulterate pepper. Microscopical examination shows that the appearance of the sclerenchyma of grape stones is quite different from that of pepper. A thick membrane almost fills the cells of this tissue in grape seeds, the sclerenchyma of which constitutes 10 per cent. of the total tissue. Other large cells are also present containing crystals of calcium oxalate, and aggregation of the same crystals are also met with in the aleurone cells of the endosperm of the grape. Starch, oil, and resin are absent.—*Analyst*, **28**, 215, after *Zeits. für Untersuch. der Nahr. und Genussm.*

Formic Acid in the Analysis of Silicates.

According to A. Leclère formic acid is far preferable to nitric or any other acid for liberating silica in the course of analysis. After fusion with whatever alkali is employed to render the silicate attackable by acid, the fused mass is treated with boiling water, to which formic acid is at once added, so as to obtain finally about 5 per cent. of free acid. Silica and titanic acid are at once precipitated, without first assuming the gelatinous condition, and may readily be filtered out. Iron and alumina may be precipitated from the filtrate merely by neutralising and boiling, without the addition of any other reagent. The possibility of precipitating iron as formate has been long known, but that aluminium could be thrown out of solution by the same reagent has not hitherto been recorded. The precipitate formed in either case is easily collected and washed. It is, therefore, easy to determine both the silicate and the base by means of formic acid in the case of many natural silicates.—*Comp. rend.*, **137**, 50.

Pharmacy of Benzosol.

Although benzosol is generally prescribed in the dry state it is much better dispensed, according to E. Niece, in the form of a suspension or emulsion, such as the following:—*Compound Syrup of Benzosol.*—Powdered benzosol, 32 grains; tincture of tolu, 1 drachm; glycerin, 6 drachms; syrup of acacia, to make 2 fl. oz. Mix the tincture with the glycerin, add the benzosol, with agitation, then the syrup, and vigorously agitate to form a homogeneous mixture. Each teaspoonful contains 2 grains of benzosol. *Compound Emulsion of Petroleum with Benzosol.*—Powdered benzosol, 256 grains; liquid petroleum, 4 fl. oz.; powdered acacia, 3 fl. oz.; glycerin, 2 fl. oz.; oil of cloves, 3 drops; hot water, *q.s.* to make 16 fl. oz. Rub down the acacia with the petroleum in a mortar, add the oil of cloves, then the benzosol, previously rubbed down with the glycerin in another mortar. Mix well and incorporate the water in three successive portions, continuing trituration until a perfect emulsion is formed. *Emulsion of Cod-liver Oil with Benzosol.*—Benzosol, powdered, 128 grains; cod-liver oil, 8 fl. oz.; powdered acacia, 1½ oz.; glyconin, 1½ oz.; oil of winter green, 15 minims; oil of bitter almonds, 7 minims; glycerin, 2 fl. oz.; hot water, *q.s.* to make 16 fl. oz. Rub the acacia with 1½ fl. oz. of hot water to a smooth mucilage, when cool rub in the glyconin, next add the mixed oils with the benzosol; continue trituration until a thick paste is formed, then add the glycerin, and sufficient water to make 16 fl. oz. of product. *Extract of Malt with Benzosol.* — Benzosol, powdered, 128 grains; glycerin, 1 fl. oz.; extract of malt, *q.s.* to produce 16 fl. oz. Mix the benzosol with the glycerin, then add the malt extract.

Complexity of Emulsin of Almonds.

E. Bourquelot and Hérissey consider that the hydrolising action of the emulsin of almonds on lactose, first recorded by Emil Fischer, is not due, strictly speaking, to emulsin, but to another ferment accompanying it, which they name lactase. They find that pure emulsin, such as occurs in *Aspergillus niger* and in the fungus *Polyporus sulphureus*, has no action on lactose. On the other hand, the impure emulsin from bitter almonds, peach and apricot kernels, and from apple-pips has a marked hydrolising action on that sugar. Since both emulsins possess identical hydrolising properties on glucosides it follows that that derived from almonds and similar sources must contain an additional ferment, lactase.—*Comp. rend.* **137**, 56.

A SCHEME OF REPRESENTATION, BY TERRITORIAL DISTRICTS, ON THE PHARMACEUTICAL COUNCIL.*

BY J. F. TOCHER, F.I.C.

THE members of the Pharmaceutical Society have had the right of voting for each and every one of the members of Council ever since the foundation of the Society in 1841. As a body corporate, it was considered by its founders to be one constituency of persons brought together by a common object, and whether a constituent member lived near Land's End or John o' Groat's he had, and right well ought to have a voice in the election of each and every individual member of Council. In addition to the principle involved in such a proceeding, the founders had the great precedent shown by the Royal Society, and, besides, there was the concurrent action of the Chemical Society, founded in the same year. The present system has many advantages. It is simple, direct, and central. Members have the right by charter to convene on the third Thursday of every month of May, and directly vote by ballot for such members as they consider fit and proper persons to be members of Council for the ensuing year. A voter has thus a direct interest in every councillor, while every councillor has his seat in Bloomsbury Square in virtue of the action and will of the whole Society, not a geographically isolated section of it. The result is that, in the main, only well-known pharmacists, men of wide reputation, can hope to take part in the administration of the affairs of the Society. With the exception of the metropolis itself, the election of a member with a purely local reputation is rare. So that, from the first, the Pharmaceutical Council has consisted of a body of first-class pharmacists, selected from the most cultured members of the Society, just as members themselves are considered to rank among the better elements in the 15,000 chemists and druggists distributed throughout Great Britain.

How Councillors Have Been Selected.

Only men of some leisure, whose financial footing as pharmacists is of a substantial character, can afford to devote the time to public work of such an arduous character. And these men have been selected almost entirely for their ability and their substantiality, not because of their geographical position. Notwithstanding all this, some attention has been paid to the idea of nominating persons on account of their representing local interests. The names of John Mackay and Daniel Fraser can be cited in support of this contention. Both were well-known pharmacists, but their election was made more on local than on general considerations. We have had a recent example of this in the co-option by the Council of our able and vigorous-minded President, Mr. W. L. Currie, who appears to have been selected both because he did and did not represent a particular part of the country. The Council of 1872, which suggested that it might be necessary to reform the present method of election, by which the representation of the chemists of the country was so unequally divided, seems to have been convinced that an approximately equal division of the country for representative purposes was desirable. The present Council has not yet considered the question, and any pronouncement by individual members has been of an ambiguous character. Such, at any rate, appears to describe the remarks of the ablest and greatest of all the pharmacists in the past generation and in this—Mr. Michael Carteighe. At the recent meeting of the Council, that distinguished man, with characteristic candour and ingenuity, both banned and blessed the notion of "territorial representation." An open mind on any uninvestigated subject is eminently desirable, but is not always so appropriately exhibited. The general attitude of the electorate towards the systematic appointment of men more from local than from other considerations has been that of pure indifference. It will continue to be our attitude until we perceive the advantages to be gained by the proposed change.

Is District Representation Advisable?

What does the term "territorial representation" mean? One cannot do better than take the definition given by the man who first definitely proposed it—Mr. Charles Thompson, Birmingham. In his inaugural address to the Midland Counties Chemists' Association, held on November 3, 1892 (*Pharmaceutical Journal*, Vol. 23, 372, *et seq.*) he said that the scheme was simply to extend to every member the right to vote for his own representative on the Pharmaceutical Council, exactly in the same way as every voter has the privilege of voting for his own member to represent him in the City Council or the House of Commons." At present, the members, as a body, have to elect law, seven votes for seven persons; but if Mr. Thompson's plan were adopted, each member of the Society would have only one vote and for one councillor only, representing the member's own district, a certain defined local portion of Great Britain. In other words, we should elect our members just as the House of Commons elect theirs, the only differences being that we should have enormous areas for our pharmaceutical constituencies, and a much smaller number of votes in each, compared with Parliamentary ones. The question we have to put to ourselves is now a simple one. Would there be any material advantage in having twenty-one pharmaceutical constituencies with one member each over having one constituency with twenty-one members, seven of whom we elect annually? We might answer in the Scotch way by asking whether it would be advisable to change the system of Parliamentary representation in Wales by making a huge constituency of the principality, and giving each elector thirty votes at each general election or ten votes annually. We know something of the doubt and confusion created in the minds of many pharmaceutical electors when a new name or two appears among the list of well-known names of pharmacists who are candidates for election, but who can picture the confusion and consternation, say, of a Welsh miner confronted at the ballot with the names of over thirty candidates for Parliamentary honours! At best, the validity of the present methods of nomination and election as a test of a community's views as to who should represent it can be called in question, but to render it as real as possible the constituency should be small, and the office vacant should be one, and not more.

Advantages of Territorial Representation.

Take the example of a municipality undivided into wards or divisions for electoral purposes. Such a municipality is in precisely the same position as the Pharmaceutical

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* Read before the Federation of Local Pharmaceutical Associations.

Society—as the Chemical and Royal Societies. A few candidates, more than are necessary, stand for election, and the electors, if they are thoughtful and reasonable, ought to register all the votes they are entitled to. But it is a well-known fact that a large body of the electors, by the method of abstention, plump for particular candidates, with the result, as can easily be shown, that a warped judgment of the electors is obtained; in many cases it is no judgment at all. This is not a mere opinion, but the observation of trained statisticians, and appeals even to non-mathematical minds. It may be argued, however, that the community of pharmacists is above that of the average Parliamentary electorate in perception and intelligence, while the candidates, being of their number, are known to the electorate, and, therefore, division is unnecessary. Let each member of the Society put this question to himself. Has he voted with intelligence, with a knowledge of the suitability of all the candidates, at each annual pharmaceutical election? There are all sorts of electors, from the man who knows each candidate individually to the man to whom even Mr. Carteighe and Mr. Hills are dark horses. How would a member of Council view an elector who recorded his vote for him as the result of the arbitrament of a spun coin? This has happened, and yet such a method is just as good as blind, haphazard voting. This would be almost entirely obviated by dividing the country into districts, and inviting the members of the Society resident in each district to return a member for that district. One can conceive of a meeting of the local associations of the district being convened by their secretaries or by the divisional secretaries. The sense of this meeting would be taken as to the suitability of certain men for the seat. It might be that only one nomination would result. On the other hand, rival associations or rival counties or cities might run different candidates, and real interest would be roused in the affairs of the Society.

Some Concrete Examples.

Let us take a concrete example or two—Lancashire on the one hand, and the North of Scotland on the other. Lancashire is selected because it is a very good example of pharmaceutical activity, while the north of Scotland is in a somewhat torpid condition. As will be presently shown, in the event of territorial representation coming within the range of practical politics, Lancashire would be entitled to two representatives. It is not very clear to the writer how Lancashire should be divided into two constituencies, so, for the moment, we will assume that it will be a double constituency. Now, four members of the present Council reside in Lancashire, and in the event of their seeking re-election two would be successful and two unsuccessful. Dr. Symes, Messrs. Taylor, Gifford, and Young would, in true Parliamentary fashion, have to stump the country and enlighten the members in fair Lancashire as to their views on current pharmaceutical topics. The membership in that county, which already stands high in comparison with other districts, would still further increase, while pharmacists generally would exhibit a more exact knowledge of their affairs in consequence. No member of the Society resident in the north of Scotland has at present a seat in the Council, but, territorially and numerically, that immense district would be entitled to one, so that the candidature of Mr. Paterson was justified from the territorial point of view alone. While our Lancashire friends are busy with their election, we can imagine Bailie Doig, or Mr. Charles Kerr, Dundee, and Mr. James Paterson as rival candidates for a seat on the Council, and visiting such towns as Dundee, Perth, Montrose, Arbroath, Aberdeen, Peterhead, Fraserburgh, Elgin, and Inverness in pursuit of votes, and expressing their views as to the conduct of pharmaceutical affairs. Such a proceeding would have an excellent effect on the pharmacists of the locality. The membership is at present meagre, for the simple reason that the members are too far removed from the centre of the pharmaceutical activity, really do not know the members of the Council, and, consequently, have little or no interest in their deliberations.

Mending the Constitution.

It is unnecessary further to labour the point. Electoral divisions are the common property of the nation, and what is a principle for the nation should be a principle for the part. Perhaps reference should be made to the General Medical Council, and once more to the Chemical and Royal Societies. As is well known, the General Medical Council is not elected by one large constituency of voters, but by different medical bodies in various parts of the United Kingdom. With reference to the scientific societies, a distinction should be made between them and such a body as ours, which administers an Act in the public interest. So that, while the present method of election requires simple machinery, and has the sanction of tradition, the weight of argument is in favour of the Parliamentary method, which affords better means of getting the judgment of the electors, and arouses a more general interest in affairs generally.

The Data.

The Pharmaceutical Society has a constitution based on truly democratic principles. "Mending the constitution" is a favourite pastime with some people, but, thanks to the founders, very little mending will be required in order to realise representation by districts, but merely a little variation in the machinery, which can easily be effected by bye-law, and without the necessity of appealing to Parliament. But if pharmaceutical constituencies are desirable on principle, it will be necessary to examine the proposal practically in order to see how it works out. Mr. Thompson, in 1892, was content to take Mr. Greenish's map, which he used in 1886 to illustrate his scheme of provincial education which he expounded to the British Pharmaceutical Conference at Birmingham in that year. The districts were roughly indicated by a number of dividing lines, and it is remarkable that, without investigation, they should come so near to that indicated by numerical considerations. But no Council could accept districts whose boundaries are straight lines as a basis for district representation. The electors of each county must be enumerated. Adjacent counties must be grouped in such a way as to create twenty-one districts, with an electorate approximately equal in each. In order that pharmacists might be in the position of discussing representation from the point of view of the numerical strength of registered chemists in each district as well as from the standpoint of membership, the rather arduous task of plotting each name in the registers of two successive years (1901-1902), with respect to the county each registered person lives in, has been carried out. This involved the handling of over 15,000 names twice over. The results are given in column two of Table II.

Table I.

	Chemists.		Members.		Population
	Total.	No. Per 10,000 of Pop.	Total.	No. Per Cent. of Chemists.	
Total persons	15,563	—	5,809	—	—
Persons in Great Britain	14,583	3·94	5,591	38·3	37,000,075
Persons abroad	980	—	218	22·2	—

Table II.

District.	Chemists.		Members.		Population.
	Total.	No. per 10,000 of Population.	Total.	No. per cent. of Chemists.	
I.-V.					
London	2,370	—	1,104	—	4,536,541
Middlesex	104	—	50	—	810.306
Hertford	86	—	54	—	239,747
Essex	163	—	67	—	1,062,645
Surrey	192	—	118	—	718,549
Kent	377	—	166	—	935,144
Total for District I.-V.	3,292	3·96	1,559	47·3	8,302,932
Average for each	658	—	311	—	—
VI.					
Wiltshire	89	—	25	—	263,921
Hampshire	360	—	91	—	768,608
Sussex	292	—	147	—	605,785
Total for District VI.	741	4·64	263	35·5	1,638,314
VII.					
Cornwall	151	—	31	—	319,214
Devon	337	—	147	—	664,697
Somerset	247	—	58	—	466,126
Dorset	77	—	58	—	199,994
Total for District VII.	812	4·92	294	36·2	1,650,031
VIII.					
Shropshire	117	—	38	—	259,093
Hereford	45	—	16	—	112,564
Worcester	139	—	41	—	500,819
Monmouth	73	—	33	—	316,875
Gloucester	260	—	117	—	648,627
Total for District VIII.	634	3·44	245	38·8	1,837,978
IX.					
Stafford	255	—	101	—	1,251,910
Warwick	486	—	187	—	906,601
Total for District IX.	741	3·43	288	39·0	2,158,511
X.					
Leicester	143	—	63	—	440,907
Rutland	14	—	1	—	20,742
Northampton	105	—	41	—	348,924
Oxford	78	—	30	—	186,767
Berkshire	89	—	51	—	283,536
Buckingham	59	—	25	—	173,060
Bedford	72	—	31	—	174,958
Huntingdon	21	—	3	—	46,755
Cambridge	128	—	42	—	200,681
Total for District X.	709	3·77	287	40·4	1,876,330
XI.					
Lincoln	326	—	90	—	492,948
Norfolk	185	—	72	—	467,614
Suffolk	138	—	47	—	361,856
Total for District XI.	649	4·93	209	32·2	1,322,418
XII.					
Cheshire	343	—	132	—	792,913
Derby	194	—	56	—	490,886
Nottingham	248	—	100	—	596,705
Total for District XII.	785	4·17	288	36·6	1,880,504

Table II.—*continued.*

District.	Chemists.		Members.		Population.
	Total.	No. per 10,000 of Population.	Total.	No. per cent. of Chemists.	
XIII.-XIV.					
Yorkshire	1,460	4·05	509	35·3	3,596,323
XV.-XVI.					
Lancashire	1,500	3·49	598	39·8	4,437,578
XVII.					
Northumberland	136	—	76	—	603,119
Cumberland	153	—	52	—	266,921
Westmoreland	36	—	11	—	64,411
Durham	374	—	86	—	1,194,590
Total for District XVII.	699	3·28	225	32·2	2,129,041
XVIII.					
Anglesey	29	—	7	—	34,799
Brecknock	28	—	16	—	53,939
Carnarvon	82	—	24	—	82,706
Carmarthen	67	—	16	—	123,568
Cardigan	51	—	10	—	137,236
Denbigh	50	—	27	—	126,466
Flint	40	—	8	—	42,271
Glamorgan	218	—	85	—	866,250
Montgomery	35	—	7	—	63,973
Merioneth	46	—	9	—	64,191
Pembroke	52	—	13	—	82,438
Radnor	13	—	2	—	20,233
Total for District XVIII.	711	4·18	224	31·5	1,698,070
XIX.					
Argyll	18	—	4	—	73,642
Dumbarton	18	—	10	—	113,865
Renfrew	49	—	16	—	268,980
Bute	11	—	4	—	18,787
Ayr	73	—	20	—	254,468
Wigton	30	—	4	—	32,685
Kirkcudbright	13	—	4	—	39,383
Dumfries	51	—	14	—	72,571
Lanark	315	—	112	—	1,339,327
Stirling	44	—	22	—	142,291
Total for District XIX.	625	2·65	210	33·6	2,356,009
XX.					
Fife	99	—	37	—	218,840
Clack. and Kinross	21	—	3	—	39,010
Linlithgow	14	—	6	—	65,708
Edinburgh	371	—	150	—	488,736
Peebles	18	—	3	—	15,066
Selkirk	7	—	6	—	23,356
Roxburgh	37	—	6	—	48,804
Berwick	35	—	5	—	30,824
Haddington	14	—	6	—	38,665
Total for District XX.	616	6·35	222	36·0	969,069
XXI.					
Caithness	16	—	0	—	33,870
Sutherland	9	—	0	—	21,440
Ross and Cromarty	16	—	6	—	76,440
Inverness	29	—	10	—	90.104
Nairn	7	—	1	—	9.291
Elgin	28	—	5	—	44,800
Banff	51	—	10	—	61,488
Aberdeen	228	—	60	—	304.439
Kincardine	15	—	2	—	40.923
Forfar	136	—	55	—	284.082
Perth	62	—	19	—	123,283
Orkney and Shetland	12	—	3	—	56.865
Total for District XXI.	609	5·31	171	28·1	1,147.025

From the table it will be seen that out of a mean value of 15,563 persons on the Register in these years, 14,583 were known to be resident in Great Britain. Of that number 12,022 were resident in England, 1,850 in Scotland, and 711 in Wales. Three counties in England have over 1,000 chemists—namely, London, with 2,370 (15 per cent.); Lancashire, with 1,500; and Yorkshire, with 1,460. Those interested in the distribution of registered persons in the various counties throughout Great Britain can examine the table at their leisure, and also Maps Nos. III. and IV., which show the ratio of chemists to the general population in each proposed district.

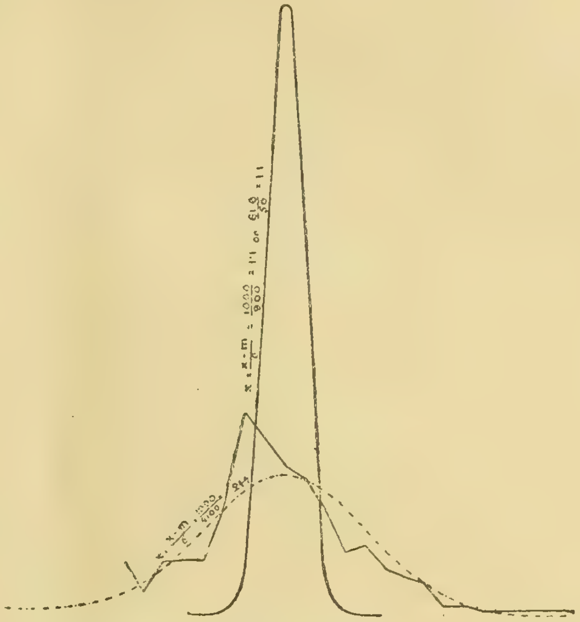
Average Value of Constituencies.

If territorial representation were adopted, with the number of chemists in each district as a basis, the average value of each constituency would amount to 694; while if it were effected with reference to membership the average constituency would amount to 266. It is a remarkable fact that whether one adopts chemists or members as a basis, practically the same result is obtained. This to a great extent avoids a discussion as to whether the one or the other is the better basis. The grouping of counties, which has been found to give the fairest distribution, is given in Table II., and is shown also in Maps I. and II. (pages ?). The smallest constituency contains 609 registered persons (District XXI., Scotland, Northern), while the largest contains 812 (District VII., South-Western). The remaining constituencies fall within those two limits, and, as will presently be seen, show a very small variation in numerical value. Owing to the magnitude of the undertaking, no satisfactory division of the London and home district, into constituencies has been effected; but, instead, London and the home counties have been grouped, and this grouping shows that five members should be returned, and therefore there ought to be five districts. The task of enumerating the chemists in each Parliamentary division in this enormous constituency for the purpose of ascertaining what five combinations of Parliamentary constituencies will give five approximately equal pharmaceutical districts, must be left over in the meantime. Yorkshire, with 1,460 chemists and 509 members, and Lancashire, with 1,500 chemists and 599 members, are entitled to two members each, and therefore both counties fall to be divided into two districts each. All the other districts form single constituencies of approximately the same numerical magnitude.

Parliamentary Representation Analogous — Parliamentary Distribution a Rough One—Pharmaceutical Distribution.

In order to evaluate the degree of precision with which the electorate has been divided into twenty-one districts, the variation of the group has been worked out. The variation in the numerical magnitude of the 567 Parliamentary constituencies has also been worked out, in order that a comparison between the two may be made. The smallest Parliamentary constituency in Great Britain numbers 2,645 voters, while the largest has 35,948, an enormous range of 33,000.

The length of the ordinates of the frequency polygon show the frequency of each intermediate numerical magnitude of Parliamentary constituencies within Great Britain, reckoned in intervals of 1,000. For instance, the most frequent size of a constituency was found to be about 9,100, and there were eighty such constituencies which were nearer 9,000 than either 8,000 or 10,000, and so on with the others. The average size of a constituency was about 11,000. The total area within the polygon is made of 567 small squares representing the 567 British constituencies. When we consider the method employed by Parliament in effecting the last redistribution of seats, we can see that there were causes operating to produce with equal likelihood small constituencies and large ones—to produce some form of chance distribution. The normal frequency curve (2) indicates theoretically the distribution on what is called a normal basis. The variability or standard difference, one may call it, of the Parliamentary group of 567 constituencies amounts to 4,100, which, in mathematical language, is the second moment about the mean value (the mean itself being the first moment), and tells us precisely the degree of misrepresentation at present existing in Parliament.



Frequency Curves.

I. Frequency polygon, showing the variation in the numerical magnitude of Parliamentary Constituencies in Great Britain.

II. Normal curve of frequency, with a standard deviation equal to that found in Parliamentary Constituencies.

III. Normal curve of frequency with a standard deviation equal to that found in the proposed pharmaceutical districts. This curve shows what the variation in Parliamentary Constituencies would amount to supposing redistribution were effected with a precision equal to the variation in the numerical magnitude of the proposed pharmaceutical districts. It signifies that when the mean values of their respective constituencies are both reduced to the same magnitude there is a degree of precision in distribution among pharmaceutical districts four and a-half times greater than in Parliamentary Constituencies.

Group.	No. of Seats.	Constituency—Voters.			Variability.	Co-efficient of Variation.	Curve.
		Mean.	Minimum.	Maximum.			
Parliamentary Constituencies in Great Britain	657	10,881	2,645	35,948	4,100	37	I. & II.
Proposed Pharmacutical Districts—Chemists	21	694	609	812	56	8	III.

Curves II. and III. are normal frequency $\left(y = \frac{a}{\sigma\sqrt{2\pi}} e - \frac{\chi^2}{2\sigma^2}\right)$ curves and show diagrammatically the difference in variation between Parliamentary Representation and the proposed Pharmaceutical Representation. The actual number of Constituencies with about 11,000 Voters (the mean value) is 60, but if Parliament were to redistribute the seats with the same precision as is here proposed for the Pharmaceutical Electorate, there would be about 244 Constituencies with 11,000 Voters each, and no Constituency would be less than 8,000 or more than 14,000.

(*To be continued.*)

Potassium Permanganate for Lupus.—E. Pearson records the cure of a most intractable case of ulcerative lupus of the nose by painting with a saturated solution of potassium permanganate. On the third application the crusts on the ulcers came away, leaving a healthy surface.—*B.M.J.*, **2221**, 194.

PHARMACEUTICAL SOCIETY OF IRELAND.

MONTHLY MEETING OF COUNCIL.

Wednesday, August 5, 1903, at the Society's house, 67, Lower Mount Street, Dublin, the **President**, Mr. George Beggs, in the chair; and the other members of the Council who attended were Messrs. Wells, Vincent Johnston, Brown, David M. Watson, Professor Tichborne, Kelly, and Smith.

The **President** welcomed Mr. Watson, and said he was sure that he would make a useful member of the Council.

Mr. **Watson** said he was much obliged for the honour that had been conferred on him, and for the gracious welcome that they had given him.

Address to the King.

The **President** reported that he and Mr. Wells—who accompanied him in the unavoidable absence of the Vice-President—attended at Dublin Castle on the day on which the King held his Court there, and personally presented the Council's address to His Majesty. The King's general reply to it and a number of other addresses was as follows:—

> Ladies and Gentlemen,—I accept with sincere gratification your loyal assurances of devotion to my throne and person, and I thank you for the hearty greeting which you tender to the Queen and myself on our first visit to Ireland since my accession. I rejoice to hear of the newly-awakened spirit of hope and enterprise among my Irish people, which is full of promise for the future. It will be a source of profound happiness if my reign shall be coincident with a new era of social peace and of industrial and commercial progress in every part of Ireland. I regret my inability to make an individual acknowledgment to each of the bodies that have taken part in this demonstration of goodwill to myself and my family, but I recognise that the manifold activities of Irish life are very fully represented here. I ask you to accept from the Queen and from myself an assurance of deep sympathy with you and with your fellow workers in the cause of religion and philanthropy, of art and science, of industry and commerce, as well as in the important work of local government. I pray that the Divine blessing may rest abundantly on your varied labours for the benefit of the community and for the elevation of the national life.

Examinations.

A letter was read from the Irish Privy Council, enclosing a copy of an Order, approving of the addition which the Council of the Society had made to the regulations, requiring from candidates at the Preliminary Examination "a competent knowledge of grammar" in every language in which they should be examined.

A letter was read from Mr. D. S. Jardin, thanking the Council for having unanimously elected him one of their examiners.

The reports of the examiners at the July examinations were laid on the table. From these it appeared that at the Preliminary Examination eleven candidates passed, twelve were rejected, and two were absent; that at the Licence Examination ten passed and eighteen were rejected; that at the Dublin Examination for Registered Druggists three passed and three were rejected; that at the Belfast Examination for Registered Druggists four passed and three were rejected; and that at the Examination for Pharmaceutical Assistants three passed and one was rejected.

The **President** moved that in future the Preliminary Examination should be held on the first Thursday and following day in January, April, July, and October, instead of the first Tuesday and following day in each of those months, as at present. The object of this was to prevent the Preliminary and Licence Examinations from clashing.

The motion was unanimously agreed to.

The B.P. Conference.

The **President** stated that he and Mr. Wells attended as delegates from the Council at the British Pharmaceutical Conference, and they had three other Irish gentlemen over with them to the Conference. It was a very successful one, and the delegates and members of the Society who attended were very heartily welcomed and cordially treated.

Election of Members.

The following gentlemen were elected members of the Society:—Mr. David Rea, Mitchelstown; Mr. R. J. Savage, Dublin; Mr. J. P. E. Wright, Balbriggan, Co. Dublin; and Mr. R. J. Eccles, Belturbet, Co. Cavan.

DUBLIN CHEMISTS' ASSISTANTS' ASSOCIATION.

INAUGURAL MEETING.

On Wednesday, August 5, 1903, a meeting of city and suburban chemists' assistants and apprentices was held at Gresham House, Upper Sackville Street, Dublin, for the purpose of forming an association. There was a satisfactory attendance.—On the motion of Mr. W. **McCarthy**, M.P.S.I., the chair was taken by Mr. H. C. **Thackeray**, L.P.S.I.

The **Chairman** explained that for some time past the absence of a pharmaceutical chemists' assistants' and apprentices' association had been greatly felt in Dublin, and the suggestion had been made that it only needed the bringing together of a few representative members of the profession to achieve the desired result. The opinion was that an association, if formed, should be conducted on strictly non-political and non-sectarian principles, and that its primary objects should be the betterment of pharmacy and its followers, the strengthening of the existing good fellowship amongst the assistants, and, in short, the well being of all concerned. He had circularised as many of the craft as he could obtain the addresses of in and around Dublin, but there was no doubt a large number of assistants and apprentices who had not received a circular, and to those he wished to explain, through the trade press, that no discourtesy was intended. He hoped that every representative of the wholesale and retail business of not only Dublin, but the provinces, would throw in his lot with the Association, and help to make it worthy of their chosen calling. It was to him a matter of gratification to see so many present that evening, and he welcomed them in the name of the new Association. He invited free criticism on the best way of working with a view to ultimate success. He had received a number of letters from England and the north and south of Ireland expressing gratification that the Association was about to be formed. It seemed to him that a wave of enthusiasm had swept over the rank and file of the trade of Ireland in the matter of an assistants' association, and once started, it should move automatically in the direction of success. He wished it, however, to be clearly understood that the Association was not intended to partake of the nature of a trade union. He did not agree with trade union tactics. The Association was not going against the employers. His idea was that it should aim at the closer union between the masters and the assistants, as what benefited the one was to the good of the other. Its practice would be to inform, to instruct, and to amuse. Many of the younger members of the craft came as strangers to Dublin, and for some time at least they had but a limited circle of friends. The Association would put them into friendly and helpful contact, and to this extent it would serve a useful purpose. The rough edges of business would be knocked off by occasional social reunions. There were many other ways in which the Association could do good to its members, particularly in regard to the notification of vacant situations, the more general dissemination of the trade press, but those he would leave in the hands of the Committee, confining himself merely to generalities.

On the motion of Mr. McCarthy, seconded by Mr. Haddock, Mr. Aplin (McMaster, Hodgson, and Co., Capel Street) was appointed Hon. Secretary, *pro tem.*

Mr. McCarthy, as a member of the former association, congratulated the Chairman on the successful inauguration of the new venture, which was worthy of every support. He hoped to see a large influx of members, particularly those who belonged to the "Meyrick" Association. The present one was, he believed, the third which had been in Dublin within the past fifteen years. He thought the latest one had come to stay. The younger members had to be specially catered for in the matter of the Association. It was not so much the question of advancing pharmacy that troubled them as that of advancing themselves. Let the masters look after the progress of things pharmaceutical and the assistants would do their own share.

Mr. Aplin deprecated anything in the Association approaching trade unionism, although there was no need to truckle to the employers, they would not clash with them in any shape.

Messrs. Miller, L.P.S.I., Herring (Bray), Thomas, Creed, Batt, and others having spoken in favourable terms of the objects and future outlook of the Association, a provisional committee of twelve was elected, and the next general meeting was fixed to be held in the Gresham Hotel at eight p.m. on Wednesday, August 19.

A cordial vote of thanks was accorded to the Chairman, and the proceedings terminated.

BRITISH ASSOCIATION, 1903.

List of Chemical Papers.

At the meeting of the British Association to be held at Southport in September, Professor W. N. Hartley, F.R.S., President of the Chemical Section, will give a brief account of twenty-five years' work in spectroscopy applied to the investigation of the composition and constitution of terrestrial substances, both organic and inorganic, and to review the present position of spectroscopy chiefly in relation to chemical theories, indicating where it may be usefully and profitably extended. The following papers will be read:—

"Dynamic Isomerism," by T. M. Lowry, D.Sc.

"Hydroaromatic Compounds," by Dr. A. W. Crossley.

"The Cause of the Lustre produced on Mercerising Cotton," by J. Hübner and W. J. Pope, F.R.S.

"Mutirotation and the Glucoside Constitution of Glucose," by Dr. E. F. Armstrong.

"A Contribution to the Constitution of the Di-saccharides," by T. Purdie, F.R.S., and J. C. Irvine, D.Sc.

"Some Derivatives of Fluorine," by Miss Ida Smedley.

"Fluorescence as Related to the Constitution of Organic Substances," by J. T. Hewitt, D.Sc.

"The Cholesterol Group," by Dr. R. H. Pickard.

"On Essential Oils," by Dr. O. Silberrad.

"Freezing-point Curves of Binary Compounds," by J. C. Philip, Ph.D.

"Action of Diastase on the Starch Granules of Raw and Malted Barley," by A. R. Ling.

"Action of Malt Diastase on Potato Starch Paste" (Part I.), by B. F. Davies, B.Sc., and A. R. Ling.

"Action of Malt Diastase on Potato Starch Paste" (Part II.), by A. R. Ling.

"Some Properties of Sodium Hydride," by A. Holt.

"On a Method of Separating Cobalt and Nickel and the Volumetric Determination of Cobalt," by R. L. Taylor.

"The Influence of Small Quantities of Water in bringing about Chemical Reaction between Salts," by E. P. Perman, D.Sc.

"Sur le Spectre du Silicium," and "Sur les Procédés de Photographie Spectrales applicables à la pratique des Laboratoires de Chimie," by M. le Comte Arnaud de Gramont.

Dr. W. A. Bone will open a discussion on the general question of combustion by a paper on "The Combustion of Methane and Ethane."

ROYAL BOTANIC SOCIETY OF LONDON.

On Monday, August 10, 1903, at the Gardens, Regent's Park, Mr. C. B. Marlan presided at the anniversary meeting and congratulated the Fellows on the improved financial position of the Society. The accounts showed a slight profit upon the year's working, although a considerable amount had been expended on repairs. Owing to the damage to plants caused by the frequent use of gas in the conservatories, the introduction of electric light could not long be delayed, so that this and the work of developing scientific instruction would entail considerable cost. He, therefore, hoped that the Fellows would introduce new members, and thus enable the Society to carry on a work which was of the utmost importance both from a public and scientific point of view. The report was unanimously adopted.

PRACTICAL NOTES AND FORMULÆ.

Lightning Cleanser.

Strong solution of ammonia, 31; alcoholic solution of soft soap, 93; washing soda, 7·8; borax, 7·8; ether, 31; alcohol, 94 per cent. (methylated), 31; water sufficient to make 950.—*Deutsche Oel und Fett Industrie*, through *Nat. Drugg.*, **33**, 102.

Rendering Packing Tissues Impermeable.

Mix together asphalte, 10; papier maché, 10; glue, 5; chrome alum, 1; tar oil, 8; benzine, 16; water, 50. Dissolve the glue and alum in water, and stir in the asphalte and finely divided papier maché. Add the benzine, and mix to produce a homogeneous mass. If a colourless preparation be required substitute paraffin for asphalte. Naphtha or turps may be used instead of benzine. Any material with loose tissue may be employed, and the mixture may be applied by machinery, such as is used for applying wax. Packing-cloth thus treated is rendered quite impervious to water and to many chemicals.—*National Drugg.*, **33**, 102.

Brilliant Black Polish for Steel.

Nobis contributes the following process to *Neue Erfind. und Erfahr.*:—Make the article perfectly free from rust and grease, then immerse for ten seconds, and no longer, in the following bath:—Copper sulphate, 10; zinc chloride, 15; hydrochloric acid, 20; water, 1,000. This is called the bronzing bath, and is used cold. It is prepared by dissolving the copper sulphate, with heat, in twice its weight of water, and filtering the hot solution into the rest of the water. The hydrochloric acid and the zinc chloride are then added and the mixture set aside. A second bath is then prepared with sodium hyposulphite, 1,500; hydrochloric acid, 75; water, 1,000. After bronzing the articles are washed, then immersed in the hypo. bath for two or three minutes. They are then rinsed with hot water and dried. The hypo. bath should be made at least two hours before it is required for use.—*Nat. Drugg.*, **33**, 105.

LEGAL INTELLIGENCE.

Pharmacy Act, 1868.

Prosecution at Glasgow under Section 15.

Pharmaceutical Society v. Owen.

On Thursday, August 6, 1903, in Glasgow Sheriff Court, Sheriff Mackenzie disposed of a case in which Mr. R. Bremridge, Registrar of the Pharmaceutical Society, was the prosecutor, and Richard Jones Owen, 145, Duke Street, Glasgow, was the respondent (*vide ante*, p. 254). The complaint alleged that the respondent, not being duly registered, sold by retail to a Mrs. McKellar, two-pennyworth of laudanum.

Mr. Peter Morison, jun., S.S.C., Edinburgh, appeared on behalf of the prosecutor; and respondent, who pleaded not guilty, was defended by Mr. J. L. Mackie, writer.

Respondent pleaded not guilty.

Mr. Morison said that he had cited the respondent to produce a certificate under the hand of the Registrar appointed by the General Medical Council to show that he was a qualified medical practitioner. It would be quite a good defence to the complaint if such a certificate were produced.

Mr. Mackie assured the Court that he would not found his case on such a defence.

Mr. Morison said that a certificate was exhibited to an officer of the Pharmaceutical Society, and as he had no notice of what the defence was, he would not imperil his case by allowing any part of the evidence to be withheld.

His Lordship said that, looking to the fact that Owen was respondent in this complaint, and that he could not, therefore, be called as a witness for the prosecution, he was afraid he must refuse the application to order the production of the certificate asked for.

Mr. Rutherford Hill, Assistant Secretary to the Pharmaceutical Society, said that he called at respondent's shop to investigate a complaint against him. The sign on the outside wall of the shop was "Chemist. H. Slogie, Druggist." On the lintel of the shop door were the words "McEwen and Co.," while on the door of a small consulting-room was a brass plate bearing the name "Dr. Owen" in large letters. Respondent said his full name was Richard Jones Owen. Witness asked him if he was a duly qualified medical practitioner, and he replied that he was. Witness told him that he had failed to find his name on the Register of medical practitioners, and, in reply to that statement, respondent said he had been in the Army and also in Australia, and had in consequence allowed his name to lapse from the Medical Register, adding that he would take steps to have his name restored. Witness explained to him that if he could prove to him that he was a duly registered practitioner there could be no prosecution against him. Respondent showed him a medical directory for 1898, and pointed out an entry there of the name of Richard Jones Owen, 128, Farmworth Street, Liverpool, as qualifying in 1861. He said that entry referred to him. He then showed witness a sealed certificate bearing the name of the Registrar of the General Medical Council, and indicating that the person named on the certificate had been registered in January, 1862. He said that was his certificate as a medical practitioner. Witness made inquiry at the Registrar of the General Medical Council, and received the following reply:—

> July 23, 1903.
>
> Referring to your letter of 22nd inst., investigation shows that in 1890 Richard Owen, who alleged himself to be Richard Jones Owen, fraudulently obtained restoration to the Medical Register by assuming the latter name, and, the circumstances having been examined, his name was erased on May 28, 1890. The address then given was 128, Farmworth Street, Liverpool, and the assumed qualification M.R.C.S., Eng., and L.S.A., 1861. I believe that a prosecution was impossible, owing to his leaving the country.—Yours faithfully,
>
> H. E. Allen, Registrar.

He was satisfied respondent had no medical qualification. Witness produced the Register of qualified chemists and druggists, which did not bear the name of defendant. Respondent said he had qualified to enter for the Modified Examination of the Pharmaceutical Society. He claimed to have been an assistant at the time of the passing of the Act. Witness found from an old list of candidates for the Modified Examination that one named Owens had gone up in 1871, and failed to pass. Although the name was Owens, the address was the same as given by respondent to witness on calling at his shop. In consequence of those investigations, witness took steps to have a purchase of poison made at respondent's shop. On August 4 an analysis was made of the contents of a small bottle handed to him by a Mrs. McKellar. It was labelled laudanum, and contained 16 gr. of opium, or several fatal doses.

Handing witness a document, respondent's agent asked Mr. Hill if it did not show that his client had passed in chemistry and materia medica with honours.

Witness replied that he did not think it showed anything of the kind.

Mr. Mackie asked if it was not the fact that Mr. Owen had but to pass the Modified Examination to qualify him to sell any kind of poison.

Witness said the document had nothing to do with the pharmaceutical qualification. It was a mere admission to a medical examination, and not a qualification of any kind.

Joseph Tait corroborated Mr. Hill's evidence as regards the contents of the bottle.

Accused asked witness what the proportion of opium should be in half an ounce of laudanum.

Witness said the proportion should be about 16 gr.

Mrs. Ellen McKellar, residing at 70, Cambridge Drive, Kelvinside, Glasgow, spoke to the purchase of the laudanum on May 29. Respondent, she said, was in charge of the shop. He had some hesitation in selling it to her, saying that if he knew the person he would not mind selling as much as two shillingsworth of laudanum. Ultimately he went to the counter and filled out the quantity she asked for, and labelled it as shown by the production. She handed the bottle to Mr. Hill.

Andrew Miller Stewart corroborated.

Respondent elected to give evidence on his own behalf. He said the incident just described happened when he had had the shop about two months. To look after the shop he engaged a duly qualified and registered chemist, who left because he suffered from heart disease. In response to an advertisement, he got another qualified man, whom he was under the necessity of dismissing because of drunkenness. He advertised for a third qualified man, and it was while he was unassisted that the last two witnesses visited his shop. During the period he had no assistant he was very careful not to dispense poisons unless to persons he had every confidence in. He had passed an examination in chemistry and materia medica. It was the case that he had only to pass the Modified Examination of the Pharmaceutical Society to enable him to dispense poisons. He had taken honours and prizes in most of the subjects in the medical curriculum.

Cross-examined, respondent gave the names of Maxwell and Ralston as those of the two qualified assistants he had had. It was shown, however, that these were not registered persons. He had appeared in London to pass this Modified Examination in 1871. Asked why he took the name of Owens, witness said he could not say. It was a common thing in Wales for people to call themselves Owen or Owens. He had not made claim to Mr. Hill that he was entitled to sell poisons.

The Sheriff said he thought this line of cross-examination should not be pursued further.

Respondent admitted that he had no registered qualification.

This concluded the evidence.

Mr. Morison, addressing the Sheriff, said respondent had been masquerading for some time as a person entitled to sell poisons, and the prosecutor had found the greatest difficulty in discovering who he was. Respondent represented to Mr. Hill that he was a qualified man, and it was only after a strong reply from the General Medical Council that he thought it discreet to give up that alleged qualification also. He thought this was a case in which an exemplary penalty should be imposed.

Mr. Mackie, for respondent, said his client had done his best to keep a registered chemist in his shop, and he had told the Court quite truly that he had been extremely careful about the sale of poisons.

His Lordship said he had no hesitation in finding the charge proved. The fact that there was a difficulty in getting a fully qualified assistant was no reason for imposing a small penalty; on the contrary, it should be heavy enough to force people not to sell until they had overcome that difficulty. In the whole circumstances, he thought the fine should be £3, with two guineas of expenses, or twenty-one days' imprisonment.

The fine was paid "under protest."

Proceedings at Leicester under Section 15.

Pharmaceutical Society v. Hodgson.

On Tuesday, August 11, 1903, at the Leicester County Court, before Judge Wightman Wood, the Council of the Pharmaceutical Society of Great Britain brought an action against Alfred Hodgson, of 57, Biddulph Street, Leicester, for £5, the amount of penalty incurred by the defendant on May 1, 1903, by having sold poison—namely, laudanum, contained in a liniment—contrary to the provisions of the Pharmacy Act of 1868.

Mr. J. T. Hincks, who appeared for the Society, said defendant, who was not a qualified chemist, admitted the claim.

Defendant said he had taken over the business from his father, who was a qualified chemist. He admitted the claim, and said he had now stopped selling poisons entirely.

Judge Wood told defendant it was a pity he did not admit the claim several days ago, as he would then have saved himself expense. Judgment would be given for the plaintiffs, with costs.

Sale of Food and Drugs Acts.

White Pepper.

On Wednesday, August 5, 1903, at Colne, Lancashire, John Walmsley, grocer, Brierfield, was summoned for selling white pepper not of the nature, etc., demanded. The analyst's certificate had stated that the pepper contained not less than 10 per cent. of bleached husks.

Mr. F. W. Beck, for the defence, said that the pungency and aroma of pepper were depreciated by using only the inner kernel and rejecting the rest. A man was justified in altering the colour of pepper to suit the taste of the public.

Dr. Otto Hehner and other analysts said that the pepper was quite genuine, and only had an unusual quantity of the light inner skin, not the husk.

The Magistrates found the case proved, and inflicted a fine of £5 and costs.

Mr. Beck gave notice of appeal.

Orange Wine.

At Pontypridd, recently, a grocer of Cilfynydd was summoned for selling orange wine adulterated with 10 gr. of salicylic acid. The analyst said that the acid was a drug, and was put in for the purpose of preserving the liquid in the absence of alcohol. Defendant was fined 1s. and costs, formal application being made for leave to appeal.

Blaud's Iron Pills.

On Friday, August 7, 1903, at the North London Police Court, before Mr. Mead, the hearing was resumed of a case in which the Islington Borough Council, through Mr. W. W. Ward, inspector under the Sale of Food and Drugs Acts, summoned Parkes' Drug Stores, Limited, for the sale of Blaud's iron pills not of the nature, etc., demanded (*vide ante*, p. 119). Mr. Bramall, solicitor, conducted the case for the Borough Council, and Mr. H. D. Bonsey, instructed by Messrs. Neve, Beck, and Kirby, was counsel for the defence.

Mr. Bramall said there were two alternative summonses for the same sale. One charge was based on the wording of the label, "Iron Tonic Pills, Blaud's formula," and the second on a verbal statement made by the assistant who sold the pills that they were "Blaud's Iron Pills."

Mr. Bonsey objected to both summonses being taken together, whereupon

Mr. Bramall decided to proceed on the ground of the verbal statement that the pills sold were "Blaud's Iron Pills." Three weeks ago the case had been adjourned in order that the analysts at Somerset House might report on the third sample; the report had now been received, and was practically the same as that of the public analyst. Blaud's pills, continued Mr. Bramall, were not a "patent" medicine, and were largely used, being a recognised popular remedy for chlorosis and anæmia. But they were only of value when they contained 20 per cent. of ferrous carbonate. The pills sold by the defendants contained only 4·3 per cent., and there was thus a deficiency of 78·5 per cent. The price paid was 1s. 4d., including a bottle. On the bottle was a label bearing the words, "These pills are not prepared according to the formula of the British Pharmacopœia," but on the label there were also the words, "Iron Tonic Pills, Blaud's formula." On the invoice they were described simply as "Blaud's Pills," and the assistant said to the inspector, "These are Blaud's Iron Pills." In Camberwell recently, the defence had been successfully raised that Blaud's formula did not exist, and in that case the prosecution could not prove what Blaud's formula was.

Mr. Bonsey, interrupting, said there were a number of formulæ, but no one recognised formula.

Mr. Bramall said it was dishonest of defendants to use the label, "Blaud's formula," if no such formula existed. Three weeks ago he had told Mr. Kirby that he should call Dr. Blaud's nephew, who was in the South of France, if the magistrate thought it necessary. If his worship was not satisfied with the other evidence which would be given as to the original Blaud's formula, he would ask for an adjournment in order to bring Mr. Blaud from France. He produced the *Bulletin Général de Thérapeutique* for 1831 from the library of the Royal College of Surgeons.

Mr. Mead could not allow the book to be put in.

Mr. Bramall said that in this leading French journal of the time Dr. Blaud had set out his formula, and this had been copied, with very slight modifications, into the French Codex and the British Pharmacopœia. One of the witnesses whom he proposed to call was Mr. Humphrey, Editor of the *Phar-*

maceutical Journal, who had investigated the origin of Blaud's pills, and written an article quite independently of any litigation on the subject. There could not be said to be any mistake in the sale, as in 1901 a director of the company found that the pills were deficient, and wrote letters of protest to the general manager and secretary.

The Magistrate held that the statement was premature, and Mr. Bonsey asked that prejudice should not be introduced.

Mr. Bramall replied that he was only putting the magistrate in possession of the facts. The difficulty had always been to administer iron in such a form that it might be absorbed into the system. Blaud discovered that ferrous carbonate met this requirement and it was ferrous carbonate, not iron simply, which was the essential. The analyst said there was some ferric oxide present, but this was medicinally useless. Added together, there must have been originally a deficiency of 50 or 60 per cent. of ferrous carbonate, and prejudice to the purchaser would therefore be clearly established.

Evidence.

After a short discussion, in which the chemical reactions involved were explained to the magistrate,

Mr. W. W. Ward, inspector under the Acts, was recalled, and his former evidence of purchase was read over. He now produced the invoice and identified the bottle. The price paid was 1s. 4d., which he considered a high price.

Cross-examined: The usual price was 6d.; sometimes 8d. or 10d. was charged, but, he thought, not more. He never heard of 2s. being charged. He intended to buy the iron pills of the B.P. The shop-assistant said, "We have the Blaud's iron pills," and he took those because he thought them the same as those of the B.P.

By the Magistrate: They were wrapped in paper and handed to him without his attention being called to the notice that the pills were not made according to the B.P. He expected to get pills which were so made. He did not see others of the kind on the counter.

Mr. Frank L. Teed, D.Sc., a member of the Bar, and public analyst for the City of London, Camberwell, and Islington, gave evidence in support of his analysis. His certificate would have been the same if he had worked on the Pharmacopœia. He had worked out the amount of ferrous carbonate on the basis of the formula in the French Codex; that formula was practically the same as that of the B.P. as regards the strength of the pills in ferrous carbonate. He had worked out the proportion of ferrous carbonate in the formula given by Dr. Blaud in 1831 in the *Bulletin*, and the proportion was practically the same as in the other formulæ—*i.e.*, 20 per cent. He had been public analyst for fifteen years, and had studied analytical chemistry for thirty years. Previous to the employment of ferrous carbonate, there was a difficulty in getting iron assimilated into the system. The other ingredients of Blaud's pills were immaterial, but ferric oxide would not have much good effect in the system. The pills as sold would not have any medicinal value. At the time of manufacture there would be at most 8·4 of ferrous carbonate.

Cross-examined: He was not a doctor of medicine. Blaud's formula was well known among chemists. In the 1898 B.P. there was no mention of Blaud, but in the addendum to the previous edition there was a statement that the official iron pills were commonly known as Blaud's.

Mr. Bonsey read to witness from the *Pharmaceutical Journal* of May 9, 1903 (see p. 653) the evidence that he gave at Camberwell in a similar case, when he said that the formula for Blaud's pills had never been published.

Witness had since altered his opinion from reading the article by Dr. Blaud in the *Bulletin Général de Thérapeutique*. There were a number of formulæ for Blaud's pills, differing as to the vehicle, but not as to the essential ingredients. He considered it immaterial what was in the Pharmacopœias of Germany and the United States. Nine medical men out of ten, when they ordered Blaud's pills, expected the B.P. pills. The tenth might want the pills made strictly according to the original formula. There was always practically the same quantity of iron present.

A long discussion here took place as to the formulæ of different countries, as given in Martindale's 'Extra Pharmacopœia,' and

The Magistrate said he would have to consider whether, when the essential ingredient was the same, it would be necessary for a particular formula to be followed in detail.

Witness, continuing, defined Blaud's pills as pills containing about 20 per cent. of ferrous carbonate, made by chemical action between ferrous sulphate and an alkaline carbonate. He was not aware that the pills were sold as a proprietary medicine, and he did not consider them as such. With Beecham's pills it was quite different.

Mr. Bonsey contended that Blaud's pills were a proprietary medicine, which he defined as a medicine sold under any name other than that of the drug. Under Section 6 of the Acts, proprietary medicines were specially excluded.

Dr. Teed, continuing, did not know that there was a Blaud manufacturing firm, which had threatened proceedings against other makers, nor that Blaud's pills had been held by the Inland Revenue authorities, in a letter sent to the Editor of the *Pharmaceutical Journal*, to be a proprietary medicine.

Re-examined: A Blaud's pill with 4·5 or 8·4 per cent. of ferrous carbonate would not be what was expected in England. There was no substantial difference in the amount of ferrous carbonate in the formulæ of the Addendum to the B.P. of 1885 and of the B.P. 1898.

Mr. John Humphrey, pharmaceutical chemist, and Editor of the *Pharmaceutical Journal*, said that he had written an article in that Journal on the origin of Blaud's pills, having investigated the subject quite independently of this case. Blaud's formula was a formula for making pills containing about 20 per cent. of ferrous carbonate, produced by chemical reaction in the course of manufacture. The formula of the French Codex was recognised in France to be Blaud's. He had found the original formula, published by Dr. Blaud in the *Bulletin Générale de Thérapeutique*, in 1832, in the library of the Royal College of Surgeons. The *Bulletin* was the organ in which were published papers read before the Royal Academy of Medicine, Paris. That original formula was substantially the same as, though differing in details from, the formula for Pilula Ferri in the British Pharmacopœia of 1898. If he were dispensing a prescription for Blaud's pills, he should dispense pills according to the B.P., but he should not say that another pharmacist would be wrong who dispensed them according to another formula, such as that of the French Codex.

Cross-examined by Mr. Bonsey: He knew that the formulæ of the Codex and B.P. differed from the original in details, but the proportion of ferrous carbonate was practically the same in all.

Re-examined: He did not consider that Blaud's pill was a proprietary medicine.

Further cross-examined by Mr. Bonsey, witness defined a proprietary medicine as a medicine in which some one possessed proprietary rights, so that he could prevent others from selling a similar article under the same name.

Mr. Joseph Ince, of Acton, who was for fourteen years lecturer in pharmacy to the Pharmaceutical Society of Great Britain, said that he had investigated the history of Blaud's pills. He corroborated the evidence of the last witness as to what Blaud's pills were generally understood to contain.

Cross-examined: He did not personally know Dr. Blaud, nor was he studying medicine in 1831. The formula had been well known since 1866, when first it appeared in the Codex. Blaud's formula was essentially, but not actually, the same as that of the British Pharmacopœia. If he were ordered Blaud's pills by a physician and were given iron pills of the B.P., he personally would not be satisfied.

Mr. Mead suggested that Mr. Ince would evidently be a fastidious customer.

Re-examined: The difference was not a substantial difference. If he bought Blaud's pills, and the label said that the pills were not prepared according to the British Pharmacopœia, he would expect them made according to the original formula. He certainly should not expect to get pills containing only 4·3 per cent. of ferrous carbonate.

DEFENCE.

Mr. Bonsey, in addressing the Court for the defence, said he did not propose to call witnesses, but he wished the consideration of the case to be entirely divested of the prejudice which his friend had sought to impart into it. The contention of the defendants was as follows: They knew from recent decisions that if they were asked for a drug which was mentioned in the Pharmacopœia they should supply the B.P. article, or give notice to the purchaser that the drug was not so prepared. Consequently, in this case, the label on the bottle absolved defendants from any responsibility. There was no Blaud's formula in the British Pharmacopœia, and of all the formulæ that had been published, it was impossible to say that any one formula was recognised. If a person asked for Blaud's pills, it was necessary, for a conviction, that some definite standard formula should be proved to be known as Blaud's formula.

The Magistrate interposed, with the remark that if there were no such thing as Blaud's formula, defendants should not have stated on the label that the pills were prepared according to Blaud's formula.

Mr. Bonsey contended that it was not for him to say what Blaud's formula was, but the onus was on the prosecution to prove (1) what Blaud's formula is, and (2) that the pills were not prepared according to such formula.

Mr. Mead said that it should be shown what a private patient or ordinary customer took to be Blaud's formula. If defendants said there was no Blaud's formula, then there was distinct misrepresentation on the label, and the sale was certainly to the prejudice of the purchaser.

Mr. Bonsey repeated that the prosecution should prove that a particular formula was in all respects Blaud's formula. This they had failed to do. All that the evidence of "these experts" amounted to was that Blaud invented a pill, and that "Blaud's pill" was a general designation of a pill containing iron in the form introduced by Dr. Blaud. If Blaud's formula and the B.P. formula were the same thing, then he claimed protection under Section 8 of the Sale of Food and Drugs Act, 1875, on the ground of disclosure.

The Magistrate thought that Section 8, which dealt with admixture with a foreign ingredient, did not apply.

A legal argument ensued, as to whether Section 6 or Section 8 afforded protection to the defendants. The Magistrate held that Section 8 only applied where a specific harmless ingredient had been added, as with butter containing an excess of water.

Mr. Bonsey argued that if there was less of ferrous carbonate in the pills there must have been an excess of other harmless ingredients, such as gum or tragacanth, added to the mass. A proprietary medicine, again, was, in his opinion, merely a medicine sold under a name other than that of the drug itself. Blaud's pill was thus a proprietary medicine, and, as such, exempt from the provisions of the Acts. The mere fact that someone else had discovered its composition did not make it any the less a proprietary medicine. It was quite easy for a chemist to discover the ingredients of any proprietary medicine.

JUDGMENT.

Mr. Mead, in giving judgment, said he was of opinion, first, that, when the inspector asked for iron pills, he was entitled to pills of the B.P. nature, substance, and quality. The verbal statement that the pills were Blaud's pills did not alter the case. The ejaculation was used as a synonym in an explanatory sense. As to Section 8 of the Acts, the disclosure on the label did not furnish a sound defence, as no evidence had been tendered that any specific ingredient had been admixed. Then, with regard to Section 6, there had not been sufficient notice, because the bottle was wrapped in paper, and the inspector's attention was not drawn to the disclosure on the label until after he had stated who he was. If he had been an ordinary purchaser, he would not have discovered that the pills were not "B.P." till he got home. Section 6 did not, he thought, furnish an answer to the charge. If he (the Magistrate) were wrong in thinking that the inspector was entitled to the B.P. pills, then there could be no doubt that the pills should have conformed to the original formula of Dr. Blaud, because of the wording on the label. He was satisfied, from the evidence of the scientific witnesses, that there was a *prima facie* assumption of the existence of the formula. It was recognised in France under the inventor's name, the essence of the formula being ferrous carbonate made by chemical action of the ingredients. It was perfectly clear that such a formula existed and required substantially 20 per cent. In this case, owing to improper manufacture, there was much less, in fact, a tremendous deficiency. Mr. Bonsey had asked questions about the various formulæ used abroad, but they had nothing to do with any foreign nation, except France. Substantially, the pills were the same everywhere. If he accepted the argument that there was no such formula as Blaud's formula, then there was distinct misrepresentation on the label. It was too strong a statement to make that any medicine called after its inventor was a proprietary medicine—the statement was absurd. There was no evidence that Blaud's pills were a proprietary medicine. On both summonses an offence had been committed.

Mr. Bramall said he was sorry to be obliged to call attention to several previous convictions, and was about to give details, when

Mr. Bonsey said he held in his hand a warranty from Cox and Co., Brighton, the makers of the pills, dated October, 1901. He had another warranty which had been received from the same firm a month ago.

Mr. Bramall said that a former partner of Parkes had left them partly in consequence of the Blaud's pills which they were selling. He had given his friends the solicitors for the defence notice to produce certain letters, written in September, 1901, by Mr. Lorimer to the secretary and managing director of Parkes' Drug Stores, Limited, in which he warned them that the pills were deficient, and would get the company into trouble. Mr. Lorimer had the pills analysed by Mr. Joyce, and, subsequently, by Dr. Paul and Dr. Muter. The firm, however, continued to buy from the same manufacturers.

Mr. Bonsey said that Mr. Lorimer was now a wholesale chemist, who was trying to damage Parkes and to sell his own pills. Parkes wrote to Messrs. Cox, in September, 1901, and they replied, disputing the analysis which had been made by Mr. Joyce. In a letter, dated October 12, 1901, Messrs. Cox wrote:—"We are quite willing to guarantee that the iron tonic pills are made according to Blaud's formula."

Mr. Mead said he held strongly that when the managing director received Mr. Lorimer's letter he should have had an independent analysis made, to ensure that Cox's were dealing honestly.

Mr. Bramall said that there were previous convictions against defendants for the sale of sweet spirit of nitre in 1898, of oil of juniper-wood in 1899, and of almond oil in the same year.

Mr. Bonsey, interrupting, remarked that all of these were supplied by Mr. Lorimer.

Mr. Bramall added that in January, 1902, the company was fined £20 and £10 10s. costs for selling methylated soap liniment.

Mr. Bonsey thought it strange that a local authority was obliged to call in the help of a late partner who had quarrelled with the firm.

Mr. Mead held that the Borough Council was quite justified in accepting any evidence that furthered the course of justice.

Mr. Bramall having read the section of the Act which fixed the maximum penalty, when a fine of £20 had already been inflicted, at £50,

The Magistrate imposed a penalty of £50 and £10 10s. costs.

Customs Consolidation Act.

Another Saccharin Prosecution.

On Tuesday, August 11, 1903, at the Wigan Borough Police Court, George Enoch Skidmore, describing himself as manager of the Palatine Mineral Water Company, Wigan, was charged with carrying and conveying and having in his possession a quantity of saccharin in contravention of Section 186 of the Customs Consolidation Act on August 10. A confidential agent of His Majesty's Customs stated that when questioned the prisoner said he did not know where he got the saccharin from.

In answer to the magistrates, the accused said he thought the duty had been paid.

It was stated that the value of the saccharin seized with the duty was £336.

The prisoner who was remanded, was granted bail in two sureties of £200 each.

High Court of Justice—Chancery Division.

Alleged Infringement of Mineral Water Labels.

On Friday, August 7, 1903, Mr. Justice Byrne heard the case of Schweppes *v.* Gibben and Co. The plaintiffs moved for an interim injunction to restrain the defendants, who carry on business as mineral water manufacturers at Plymouth, from infringing the label the plaintiffs affix to bottles containing their mineral waters. The defendants denied infringement.

Mr. Levett, K.C., who appeared in support of the motion, submitted that looking at the plaintiffs' and defendants' bottles and labels they were so similar as to enable the defendants' soda water to be passed off as the plaintiffs', the colour, printing, lettering, and border being practically the same. There was evidence that defendants' bottles had by mistake been returned to the plaintiffs.

Mr. Rowden, K.C., for the defendants, read evidence directing attention to the dissimilarities between the plaintiffs' and defendants' bottles.

After some discussion it was agreed that the defendants should keep an account, his Lordship saying that he would give facilities for an early trial. It was arranged that pleadings should be delivered in the vacation, and no order was made upon the motion, except that the costs should be costs in the action.

"Creolin" Trade Mark.

On Friday, August 7, 1903, before Mr. Justice Kekewich, a motion in an action of Jeyes' Sanitary Compounds Company, Limited, *v.* Pearson's Antiseptic Company, Limited, was mentioned. It was arranged, after a short discussion, that the motion should stand to the trial, which should take place as early as possible after the vacation, the defendants giving an undertaking, without prejudice, not to use the word "Creolin" in England until the trial, or to issue a certain advertisement of which plaintiffs complained.

Mr. Ruegg, K.C., appeared for the plaintiffs, and said that Mr. Pearson was for many years selling agent to the plaintiffs, and as such had then the right to use the word "Creolin." His agreement terminated in March of the present year, and an action was pending against him for infringement of trade mark.

NOTES IN PARLIAMENT.

The "Open Door" for Sugared Products.

The decision on Wednesday, August 5, in the House of Commons, in Committee, on the Sugar Convention Bill, brought out a somewhat unexpected interpretation of the Convention. Mr. Lough had moved an amendment to Clause I., with the object of making specific provision to the effect that the undertaking of the parties to the Convention to prohibit the importation of sugar should include "sugared goods." It was argued that unless this were done British manufacturers of goods into which sugar enters will be subject to more serious foreign competition than now, because, whilst as a result of the Convention the price of sugar—their raw material—will be raised, there will be a stronger inducement than ever to manufacturers of sugared goods in bounty-giving countries to send those goods into our markets. It then transpired from statements of Mr. G. Balfour that to alter the Bill as proposed would make the measure inconsistent with the terms of the Convention, and that the prohibition of sugared goods was not provided for. In reply to strong protests from Mr. Asquith and other Opposition members, and to remonstrances from Sir J. Gorst and other Ministerial members, Mr. G. Balfour and also the Chancellor of the Exchequer expressed themselves confident that serious competition in bounty-fed sugared goods was not to be apprehended from non-contracting States, and they added that if such competition were found to arise, the Government would be quite ready to deal with it by taking special action in the nature of fiscal arrangements which would counteract the evil. A rather lively debate was only brought to an end by the use of the closure, and then the amendment was negatived by 156 to 88.

"Made Abroad."

It was a unanimous recommendation of the Select Committee of 1897 on Merchandise Marks that the words, "Made Abroad" should be substituted for the specification of the country of origin upon goods marked in accordance with Section 16 of the Act of 1887. Sir Howard Vincent has asked the President of the Board of Trade why no action has been taken on this recommendation, and whether, having regard to the statement by the Committee that the specific declaration of country operates as an advertisement of the merchandise and products of foreign countries, and to the loss and discouragement of British business enterprise he would undertake to deal with the matter next session. Mr. G. Balfour replied that if Sir Howard was prepared to bring in a Bill to give effect to the recommendation of the Select Committee on Merchandise Marks, 1897, it would receive careful consideration from the Government. It was, however, by no means clear that the recommendation could be carried out consistently with existing Treaty stipulations.

Medical Officers in Ireland.

A reply made by Mr. Wyndham to Mr. Patrick O'Brien in the Commons the other day threw a rather interesting light on the position of affairs in Ireland in respect to medical officers. A vacancy was created in the Ballinasloe Union on June 20. The Guardians advertised for a medical officer at a salary of £120 a year! They were not successful in getting the precious services which they desired on these terms. Two gentlemen offered their services at £200 a year. The Guardians, however, decided to readvertise at the former salary. There are eight other vacancies; two occurred in November last, and the remaining six are of very recent creation. Temporary medical officers in charge of the districts where the vacancies exist are usually paid £4 4s. a week.

Sheep Scab Bill.

This Bill, after discussion, passed its third reading in the House of Commons on Monday night, and has since then been read a third time in the Upper House.

Alleged Dispensing Mistake.

The Home Secretary was on Monday asked by Mr. Moss whether a judge of the High Court had in any, and, if so, in what case or cases, exercised the power conferred on him by Section 12 of the Cruelty to Animals Act, 1876, by ordering experiments to be made on living animals for the purposes of justice in a criminal case. The Home Secretary replied that the only case of this nature of which he had any record was one in which a Scotch judge made an order in 1883 with the view of ascertaining the nature of a poison alleged to have been dispensed by mistake.

The Duty on Cacao Butter.

Sir Howard Vincent has asked the Chancellor of the Exchequer when the duty on cacao butter was first imposed, and what has been its total yield to July 31, 1903. Mr. Ritchie's answer is to the effect that the duty on imported cacao butter was first imposed on August 7, 1896, and yielded, from that date to the 31st ultimo, £20,877.

Lead Poisoning.

The Home Secretary, replying to Sir C. Dilke, has stated that the formal arbitration of the lead poisoning rules had been closed. It was hoped that the new rules would have been promptly published. In view, however, of the fact that a scheme of insurance which was contemplated was somewhat detailed, the umpire gave an undertaking that the persons interested should have an opportunity of considering, before it came into operation, the probable effect of the scheme. Unfortunately, a difficulty had arisen in respect to a meeting for the purposes of such consideration, but the umpire, notwithstanding the approach of the recess, would press the matter on as strenuously as possible.

POISONING CASES AND INQUESTS.

The deaths by poisoning reported during the seven days ended Wednesday, August 12, 1903, numbered sixteen, thus:—

Poison.	Accident.	Suicide.
Carbolic Acid	—	2
Chloral Hydrate	1	—
Hydrochloric Acid	—	1
Hydrocyanic Acid	—	2
Laudanum	1	—
Oxalic Acid	—	3
Phosphorus	—	2
Ptomaine	1	—
Salt of Lemon	—	1
Sulphuric Acid	—	1
Weed Killer	—	1
Total	3	13

Carbolic Acid.—A woman at Greenock and another at West Hartlepool died from carbolic acid poisoning. In the latter case the coroner told a local chemist that he thought carbolic acid was a poison which should be entered in the poison-register. It is satisfactory to note that the *Northern Daily Mail* has put the coroner right in the matter, and pointed out that no possible blame attached to the chemist and druggist.

Chloral Hydrate.—Dr. W. B. Macdonald died on board a yacht, near Cowes, from the effect of taking four tabloids of chloral hydrate. A verdict of "accidental death" was returned.

Hydrochloric Acid.—A woman at St. Pancras committed suicide by taking spirit of salts.

Hydrocyanic Acid.—A veterinary surgeon died in a train between Sheffield and Bridlington from prussic acid poisoning. A clerk at Lindfield poisoned himself with the same substance.

Laudanum.—A woman at Wrexham died "from misadventure," after drinking about an ounce of laudanum. The jury expressed the opinion that "restrictions should be placed upon the sale of opium."

Oxalic Acid.—A man at Marylebone, and a woman at Barry, committed suicide by taking oxalic acid. A woman at Melyncrythan also committed suicide with the same acid. At the suggestion of the coroner the jury recommended that oxalic acid should be placed in Part I. of the Schedule of Poisons. The packet had been duly labelled "poison" by the chemist and druggist who supplied the oxalic acid.

Phosphorus.—A young woman at Bradford and a woman at Leith both died from the effects of drinking an infusion of match-heads.

Ptomaine.—A man at Islington died from ptomaine poisoning, set up by the consumption of something at present undetermined.

Salt of Lemon.—A woman at Newington Causeway took salt of lemon with fatal effect.

Sulphuric Acid.—A man near Manchester poisoned himself with this acid.

Weed-Killer.—A weed-killer, containing some corrosive poison, caused the death (suicide) of a master gardener near Bradford.

Attempted Suicides.—Laudanum (2), strychnine and vermin-killer did not serve the purpose intended by those who took doses.

Sixty Years Ago.

From the PHARMACEUTICAL JOURNAL, August, 1843.

THE SALE OF SPIRITS OF WINE.

Several correspondents have written to us on this subject, and a few cases have recently been reported in which fines have been inflicted to the amount of £10 or £12. We have also been called upon to explain the meaning of the Acts of which we gave extracts in Vol. II., No. 10; for this purpose we have thought it right to reduce the said extracts to plain English, by omitting the legal technicalities and repetitions, in which amended state we subjoin them.

9th Geo. II., cap. 23.—No person shall presume to sell or retail any brandy or any other distilled spirituous liquors or strong waters, unmixed or mixed with themselves, or any other ingredients, and by whatsoever name or names they are or may be called, publicly or privately, in any less quantity than two gallons without first taking out a licence for that purpose, as is hereinafter directed, within ten days at least before he shall sell or retail the same, for which he shall pay down for the same the sum of £50 (Sec. 1).

Every person who shall take out such a licence is required to renew such licence from year to year; and if any person or persons shall presume to offer to sell or retail any of the said spirituous liquors, in any less quantity than aforesaid, without taking out such licence and renewing the same yearly, he shall forfeit the sum of £100 for each offence (Sec. 2).

No licence shall be granted to any person or persons whatsoever, for selling by retail any spirituous liquors or strong waters whatsoever, except to such persons only who shall keep public victualling houses, inns, coffee-houses, ale-houses, or brandy-shops, and use or exercise no trade whatsoever (Sec. 10). This Act shall not extend to any physicians, apothecaries, surgeons, and chemists, as to any spirits or other spirituous liquors which they may use in the preparation or making up of medicines for sick, lame, or distempered persons only (Sec. 12).

16th George II., cap. 8.—This Act shall not extend to any physicians, apothecaries, surgeons, or chemists, as to any spirits or spirituous liquors, which they may use in the preparation or making up of medicines for sick, lame, or distempered persons only; and no person shall be deemed or taken to be a retailer of spirituous liquors who doth not retail the same to be drank or consumed in his warehouses, shops, etc. . . . . or that shall otherwise retail or send the same abroad in less quantities than one pint (Sec. 12).

We have not heard of any cases in which a chemist has been fined for selling spirits of wine for *medicinal* use; in all the cases, the particulars of which have been reported to us, the parties have known or had reason to suspect that the spirit was required for other purposes, and the quantity sold has, in most instances, been a pint and a-half. In our opinion, every penalty which has been inflicted for the sale of spirit in *less quantity than a pint*, to be consumed or used *off the premises*, has been a violation of the Act.

Iodo-Eugenol.—Since eugenol is a much more active antiseptic and germicide than thymol, E. Liotard proposes to employ its iodo-compound in place of aristol, dithymol diiodide. Iodo-eugenol, prepared in a similar manner to aristol, forms a yellowish powder, melting at 78° C. It is a powerful disinfectant, specially applicable to the treatment of lupus and cancer.—*Nouv. Remèdes*, **19**, 243.

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

North Kent Chemists' Association.—The delegates from this Association to the British Pharmaceutical Conference at Bristol were Messrs. B. U. Still, Vice-President; R. Feaver Clarke, Hon. Sec.; and A. Goldthorpe.

Grocers and Drugs.—At a recent meeting of the Manchester Grocers' Association, the Secretary said that the subject of the sale of medicines by grocers had been referred to the Emergency Committee, which would probably be able to present a report to the next General Committee meeting.

Opium Smoking.—The firm of dispensing chemists, of whose advertisements with regard to a pipe for opium smoking the *Lancet* recently complained, has now withdrawn from circulation, except among medical men, the pamphlet to which exception was taken. It appears that very few pamphlets have been sent out, and those were in all cases applied for.

An Over-Confident Dispenser.—A patient at the Shoreditch Infirmary, after taking a strychnine mixture, is said to have developed unmistakable signs of an overdose. The dispenser, when consulted, was confident that no error had been made, and took a dose of the medicine himself. Symptoms of strychnine poisoning promptly developed, but the administration of an antidote prevented the consequences being fatal.

Home Counties Nature-Study Exhibition.—The Home Counties Nature-Study Exhibition will be held, by kind permission, at the offices of the Civil Service Commission (formerly the buildings of the University of London), Burlington Gardens, London, W., from October 30 to November 3. Prospectuses, regulations, and prize lists may be obtained from Mr. Wilfred Mark Webb, Hon. Secretary, 20, Hanover Square, London, W.

The Lister Institute of Preventive Medicine.—At an extraordinary general meeting of the members of the Jenner Institute of Preventive Medicine held on Friday, 7th inst., in the board room of the institute, Chelsea Bridge Road, under the presidency of Sir Henry Roscoe, hon. treasurer, the resolution passed at the meeting on the 22nd ult. to alter the name of the institute to "The Lister Institute of Preventive Medicine," was on the motion of the Chairman, seconded by Sir Joseph Fayrer, unanimously confirmed.

Trade in Ladybirds.—At the British Pharmaceutical Conference at Bristol Mr. E. M. Holmes, in his instructive paper on "Agricultural and Horticultural Insecticides," suggested that more attention might be paid by British gardeners to the cultivation of such "insect-friends of man" as the ladybird. By a curious coincidence, the same suggestion was made by a correspondent in the *Gardeners' Chronicle* for August 1, two days after Mr. Holmes's paper was presented at the Conference.

Cattle Poisoning.—Mr. F. U. Moore, of the Botanic Gardens, Glasnevin, Dublin, would be glad of information concerning any authentic case of cattle being poisoned by eating the butterwort (*Pinguicula vulgaris*). He is inclined to believe that this plant is harmless, and that it is not eaten by cattle, but there is such a widespread belief in Ireland to the contrary, and he is so often asked for information how *Pinguicula* can be eradicated and its baneful influence on cattle counteracted, that any information throwing light upon this belief would be acceptable.

Staffordshire Analyst's Report.—The Staffordshire County Analyst reports that during last quarter the inspector submitted to him 508 samples of food and drugs, 485 of which he passed as genuine, and twenty-three he certified to be adulterated. Eighteen different kinds of articles were analysed, but complaint had lain with only six kinds, viz., beef-lard, butter, camphorated oil, dripping, milk, and spirits. Speaking of beef-lard, the analyst states that this is a novel commodity, the name indicating a substance like lard made of beef-fat. In the two samples submitted he found 50 per cent. of cotton-seed oil, which he considered was a foreign substance, and he had so certified it. The cases have still to come into Court.

The Paris Disaster.—M. Toledo, a chemist in business on the Boulevard de Belleville, told a *Daily Telegraph* correspondent that at about eight o'clock on the evening of the disaster on the Metropolitan Railway, several persons who were half-suffocated were taken to his establishment. They were restored by means of careful treatment, and, thinking that other sufferers might follow, he decided on keeping the shop open all night. At half-past two in the morning a fireman, in a state of semi-asphyxiation, was taken to M. Toledo's house, and was only revived with considerable difficulty. M. Lépine, Prefect of Police, who tried several times to get as far as the platform, resolved on making another effort to get below at five o'clock, and M. Toledo, who accompanied him, and subsequently gave a description of the scene, declared that the spectacle which they witnessed was simply awful.

University Extension Meeting.—The first week of the summer meeting of the University extension and other students at Oxford was completed on Saturday, when Professor Sims Woodhead, Professor of Pathology in the University of Cambridge, in the introductory lecture of the course on bacteriology, took "Pasteur" as his subject. Sir John Burdon-Sanderson presided. Professor Woodhead said those who had read Professor Tyndall's work on spontaneous generation would have been struck by the importance he attached to Pasteur's work in combating the theory of spontaneous generation or abiogenesis. How important this was could be gathered from the fact that for twenty centuries, from Aristotle downwards, no theory of spontaneous generation was too outrageous to be believed. Pasteur's name would always be associated with a process by means of which large industries had been saved and an enormous amount of food material preserved and rendered available for use.

British Trade Marks in China.—The Foreign Office has informed Mr. R. W. Barker, British and Foreign Patent Agent, 56, Ludgate Hill, E.C., that a telegram has been received from His Majesty's Chargé d'Affaires at Peking, stating that ratifications of the Commercial Treaty of September 5, 1902, between Great Britain and China were exchanged on the 28th ult. By Article VII. of the Treaty, the Chinese Government undertake to afford protection to British Trade Marks against infringement, imitation, or colourable imitation by Chinese subjects, and further undertake to establish a system of registration for foreign trade marks. This will be a distinct boon for British traders, as hitherto, owing to the omission from former treaties of any reference to trade marks, and for lack of a proper register, great difficulty has been experienced in obtaining the punishment of Chinese traders forging or imitating foreign trade marks.

Enteric in the Army.—The report of the Commission appointed by Mr. Brodrick in 1900 to inquire into the nature, pathology, causation, and prevention of dysentery and its relation to enteric fever was issued this week. The cost of enteric fever, excluding dysentery, in the South African campaign is estimated at about four millions. The cause of enteric fever and dysentery in the Army in South Africa is attributed to a combination of circumstances rather than to any one specific insanitary condition; but it is considered sufficient to regard both diseases are essentially filth diseases, and that both may have a common origin. Among other sanitary reforms the following is insisted upon:—"The organisation of a cadre of men for scavenging work. This point is practically the pivot on which the whole question of camp sanitation turns. We have no such organisation in peace, when all this class of work, so far as the Army is concerned, is performed for it by civil contractors. The result is that the moment the British soldier leaves his lines and the contractor he is unable to deal with and dispose of his own refuse material." Among other things, the report points out that the comparative immunity of Boers from enteric fever during the war is attributed to the fact that they almost invariably boiled their drinking water.

Radium and Cancer.—Dr. Alexander Graham Bell, the inventor of the telephone, makes a suggestion regarding the application of radium rays for the cure of cancer. In some experiments performed in Washington Dr. Z. T. Sowers found that the Röntgen rays and those emitted by radium appeared to have a marked curative effect upon external cancers, but when tried upon deep-seated cancers have hitherto failed to produce satisfactory results. Dr. Graham Bell, therefore, wrote to Dr. Sowers that one reason for this failure might arise from the fact that the rays had to pass through healthy tissues to various depths in order to reach the cancerous matter. He observed: "The Crookes tube from which the Röntgen rays are emitted is, of course, too bulky to be admitted into the middle of a mass of cancer; but there is no reason why a tiny fragment of radium sealed up in a fine glass tube should not be inserted into the very heart of the cancer, thus acting directly upon the diseased material. Would it not be worth while making experiments along this line?" Dr. Sowers replied that he thought such experiments should be made, and had no doubt "they would prove successful in many cases where we now have failures."

Cheap Pills in Peril.—The Inland Revenue has certainly earned the gratitude of the lay press for providing material for numerous articles on medicine stamp duty. Some provincial papers have interpreted the changes in practice of the Board in an amusing, if not strictly accurate, fashion. Under the title of "Cheap Pills in Peril," the *Newcastle Chronicle* has published the following:—"Cheap physic is in peril, for an immediate increase of 150 per cent. in the price of a penny box of pills is to be exacted. In casting about for fresh sources of revenue the Inland Revenue authorities have been led to a closer study of the Patent Medicines Stamp Act of George the Third, and under this old statute a stamp is in future to be charged on all drugs and medicines sold by unqualified retailers. Chemists and druggists will not be affected, except that the definition of 'patent medicines' will be more comprehensive than at present, but those who have been accustomed to purchase their pills and draughts, their drugs and medicines, their salves or potions, at the village general shop will henceforth have to pay for a three-halfpenny stamp in addition to the price of their medicaments. The penny box of antibilious or liver pills is therefore doomed, while salts, senna, rhubarb, Gregory's mixture, and all the homely remedies of the careful housewife will be increased in value 150 per cent."

Edible Fungi.—The Royal Horticultural Society proposes to introduce a somewhat novel feature in its exhibition. On September 15, there will be held an Educational Exhibition of Edible Fungi in the Drill Hall of the London Scottish Volunteers, Buckingham Gate, Victoria Street, Westminster, and a lecture upon them will be given by the veteran fungologist, Dr. M. C. Cooke. All interested in extending or acquiring the knowledge of the edible species are invited to send collections. Collections for exhibition should be sent to the Drill Hall on Monday afternoon, September 14, or brought on the following morning before 9 a.m., so that they may be properly grouped and arranged by fungus specialists. Each specimen should be wrapped separately in thin or tissue paper, and packed so as not to get loose or shaken in transit. When the names are known, they should be neatly written on card and enclosed. The Society will pay the carriage of all collections, and will award medals according to merit. The best collection will be considered to be that which includes the largest number of edible species in the best condition. All specimens will be destroyed at the close of the meeting, unless removed by the senders. Intimation of an intention to exhibit should, if possible, be sent a few days before to the Secretary, Royal Horticultural Society's Office, 117, Victoria Street, London, S.W.

PERSONALITIES, BUSINESS CHANGES, ETC.

Messrs. J. T. Davenport, Limited, have removed from 33, Great Russell Street, W.C., to 117, Union Street, S.E.

Dr. Chattaway has been appointed an Examiner in Chemistry for the Matriculation Examination of the University of London, in the place of Mr. H. B. Baker.

Salters' Research Fellow.—The appointment of Mr. James Stuart Hills as Salters' Research Fellow has been approved by the Court of Assistants of the Salters' Company.

Mr. Thomas Scott, at present one of the representatives of Parke, Davis and Co., has arranged to take over at the end of the month the business of Mr. Matthew Grey, Dumbarton Road, Partick.

Messrs. J. B. Barnes and Son announce that, in accordance with the order of the London County Council for re-naming Trevor Terrace, their premises will henceforth be known as 225 and 227, Knightsbridge, S.W., where all communications should be addressed.

Mr. Alexander Fraser, chemist and dentist, who retired in ill-health from "South Morningside Pharmacy," 84, Comiston Road, Edinburgh, has built and opened an up-to-date pharmacy with dark room, etc., also a dental department at West Linton, a favourite health resort in Peeblesshire.

Alderman H. H. Pollard, J.P., of Ryde, Isle of Wight, an ex-member of the Ryde School Board and Vice-President of the Ryde Science and Art Council, has been elected by the Isle of Wight County Council as a member of the Education Committee under the new Act. Alderman Pollard was placed at the head of the poll.

Bailie Alexander Spence, of Linlithgow, was the recipient, on Tuesday, August 4, of a presentation from the Linlithgow Town Council, of which he is a member, on the occasion of his marriage. The presentation consisted of a timepiece, which was handed to Bailie Spence by the Provost of Linlithgow, on behalf of the members of the Council.

Mr. George Senter, Ph.D., etc., formerly Bell Scholar and Pereira Medallist of the Pharmaceutical Society, who was in 1901 granted a Science Research Scholarship by the Royal Commissioners for the Exhibition of 1851, has been granted an "exceptional renewal" of his scholarship for a third year on the nomination of University College, London. The place of study is the University of Amsterdam.

Mr. George Williams, chemist and druggist, 131, Embden Street, Manchester, has closed that pharmacy, the business having been transferred to 17, Preston Street, where Mr. Williams has another pharmacy. The shop in Embden Street was established about 1870 by the late Mr. James Hart, pharmaceutical chemist, who carried it on for twenty-five years, when it passed into the hands of Mr. Williams.

Mr. F. W. Short, B.Sc. (Lond.), formerly demonstrator in the chemical laboratories of the Pharmaceutical Society of Great Britain, has reached Bulawayo, Rhodesia, where he contemplates taking up assay work. Mr. Short was advised to leave England on account of his health, and his many friends and well-wishers will rejoice to learn that there is already a marked improvement in his physical condition. We hope to receive from time to time news of Mr. Short's success.

Dr. John Attfield, F.R.S., on Thursday, July 30, underwent an operation known as gastro-enterostomy. The operation was completely successful, and the veteran chemist, now sixty-eight years of age, is making a rapid and satisfactory recovery in a private nursing home near Cavendish Square. A new edition of Dr. Attfield's 'Manual of Chemistry,' in the preparation of which Dr. Dobbin has assisted, will be published on September 1. This will be the eighteenth edition of that well-known text-book in thirty-six years.

Sir Thomas Hanbury, K.C.V.O., of La Mortola, has purchased for presentation to the Royal Horticultural Society the estate and garden of the late Mr. G. F. Wilson, F.R.S., at Wisley, near Woking. The total area of the estate is sixty acres, part of which is used for agricultural purposes. There are also various suitable buildings on the estate. In a letter to the *Times*, Sir Trevor Lawrence, President of the Society, states that there is now every reason to hope that 1904, the centennial year of the Society, will see it provided with a new garden.

Honorary Degrees at Heidelberg.—On the occasion of the jubilee celebrations of the Heidelberg University, says a Reuter's telegram, a great number of honorary degrees have been conferred, including the following:—Medical Faculty, Professor Sir William Ramsay, of London; Philosophical Faculty, Mr. Henry Bradley, President of the Philological Society, and Professor Lindsay, of St. Andrews University; Faculty of Natural Sciences and Mathematics, Professor Richard Glazebrook (Director of the National Physical Laboratory at Richmond), Sir Williams Huggins (President of the Royal Society), and Professor Pickering (Director of the Harvard College Astronomical Observatory, United States).

THE ADVANTAGES OF COMBINED ASSOCIATIONS.*

BY GEO. P. POND.

The need of combination and the absolute necessity of a central governing body could not be better illustrated than at the present moment. There never was a time when the trade felt the need of advice and help as it now does, after the recent decisions of the Law Courts and of the Inland Revenue officers. What a benefit it would be to the trade to feel that it had a Society to which its members could apply for guidance in our present and future troubles. The ease of mind and the common advantages we should all experience would more than repay us for any little trouble and expense we might be put to in supporting such a Society. And if there are some of us who could stand on one side because we are in a more happy position than others, what a great pleasure it is to feel that we have benefited others. But I am sure there are very few indeed who would not be materially assisted by belonging to and supporting a strong society.

And without combination and unity there can be no strength nor permanency in any society. And for the common good and prosperity of the whole trade there can issue no benefit from a branch association which is not linked to a head. A branch cut from the stem will not even benefit itself, and it is impossible that it should be of use to the whole body. If any branch association is to be of any real advantage to the trade it must be united in combination to a central authority. Branches are powerless to do anything worth speaking of for the good of the whole trade. A branch can and does do a great deal of good locally; and of course it should be quite democratic, free, and independent while supporting its head executive. But a branch can have no power beyond its local influence, and therefore it is folly to pretend to be independent if it seeks the welfare of the trade generally.

For example, a branch would fail to bring pressure upon the inhabitants of its own district, but if this branch is part of a great national combination its strength and influence are more than quadrupled even for its own local interests. The greater the combination and the more united, the greater the power and the influence of each branch unit.

With a well-organised federation, each and every branch may well be proud of itself. Any branch to act independently and have no lien with a head society cannot be for the general good, and its policy would be selfish and even suicidal. How powerless would be a deputation of a branch to any important body in the country. The first question asked is, How many do you number? To have to confess a small number and that you are only a local association will at once take the wind out of the sails of your deputation. From courtesy you may be heard, but there ends your influence. Such a confession gives at once the impression to the body you appear before of want of unity, and therefore of weakness. With separate associations, each independent of the other, all work for the general good will be thrown away. For the general good there must be a consolidation of branches and of all our forces in a combination of united interests.

Unity is Strength.

Until this consolidation and unity are effected we are powerless to move or influence Parliament, or even a single member of that all-powerful House. The sooner the branches understand this, and that branches are increased under the protective care of a central national society, the sooner we shall become a power in the State. And until considerable progress is made in consolidation by federation of branches it is no use trying to move or influence any body stronger than ourselves.

I would venture to suggest a name—

"The National Society of Chemists."

The National Society should assist the Pharmaceutical Society in every possible way, and strengthen and support it, but it should be the right and privilege of the N.S.C. to look after all trade interests while seeking the approval of the Pharmaceutical Society, working separately, but always in agreement with that Society, that each may benefit the other. Look at the trade interests at the present time that are before us which require handling, and which can scarcely be considered the work of the Pharmaceutical Society to touch. Yet they need prompt attention, and we are not able to do anything with them solely for want of combination and unity.

Look at the journals of this very week, or rather month, and read the number of hasty meetings and resolutions passed and to be sent to certain public authorities, which resolutions will do probably more harm than good to our cause, but which would never have been sent, I feel sure, if we had had a central authority.

Do away with the principle of independent branches and we shall become a strong power in the country. We then should be able to talk and to act, and to introduce our terms to the public, to manufacturers, to societies, to Parliament. We should certainly be in a better position to obtain what we want. At present we are only able to talk about what we want, and often thereby do more harm than good.

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* Read before the London Chemists' Association (North London Branch), on Thursday, July 23, 1903.

REVIEWS AND NOTICES OF BOOKS.

'Utility Fowls: Their Selection, Improvement, and Diseases.' By H. Francklin. No. 6 of 'Rural Handbooks' series. Pp. 36. Price 6d. net, 7d. post free. London: Dawbarn and Ward, Ltd., 6, Farringdon Avenue, E.C. 1903.

Chemists are frequently applied to for remedies for diseases affecting poultry, and in the book under notice many useful hints may be found on the treatment of these diseases. Thus, apart from the information concerning poultry generally, this little book will well repay perusal by chemists and druggists, particularly those in country districts.

'The Photo-Miniature,' May, 1903.—Studio Construction.—Pp. 49-96. Price 6d. London: Dawbarn and Ward, Ltd., 6, Farringdon Avenue, E.C. 1903.

The May number of the *Photo-Miniature* is devoted to studio construction, a short account being given of the evolution of the photographic studio from 1839 onwards. Special attention is given to the construction or modification of skylights and the location of the studio of the professional photographer, and plans are given for studios suitable for amateurs.

'Portraiture for Amateurs Without a Studio.' By Rev. F. C. Lambert, M.A. In two parts. Pp. 176. And 'The Elementary Chemistry of Photographic Chemicals.' By C. Lordes Ellis, F.I.C., F.C.S. Pp. 120. 1s., net, each part. London: Hazell, Watson, and Viney, Limited, 52, Long Acre, London, W.C.

These little volumes form Nos. 27, 28, and 29 of "The Amateur Photographer Library." The two former, which are profusely illustrated, contain valuable hints to the beginner, and give minute instructions as to posing, lighting, suitable background, etc., etc. 'The Elementary Chemistry of Photographic Chemicals' will undoubtedly prove interesting to those who wish to know the why and the wherefore of the various chemical processes used in developing and toning. The reactions which take place are explained in a manner which can be understood by one with the most elementary knowledge of chemistry.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

General Markets.

London, Thursday Night, August 13, 1903.

There is some consolation in knowing that things at their worst are sure to mend, and signs are not wanting that the deplorable state which has of late characterised the markets in Drugs and Chemicals cannot last much longer. There are only signs, however, for business during the week has been extremely slack, not only in the drug and chemical world, but at Lloyds, on the Stock Exchange, and, in fact, everywhere. In Chemicals the most important change is a decline in the Salts of Mercury, following the reduction in the price of Quicksilver duly recorded in last week's issue of the Journal. The prices of the various Mercurials are lower by from 2½d. to 3½d. per lb. Opium is firm, but no transactions of importance have been made. It was thought by some that should the troubles in Eastern Europe assume a more serious aspect, the value of this drug would be effected, but seeing that practically the whole of the gum is collected, it is difficult to understand how the Balkan struggle can interfere with it in any way. Morphine and Codeine are both firm and quiet. Menthol is rather depressed in consequence of cheap offers for later shipment from the other side, which naturally tends to make holders somewhat nervous, although the article is in by no means excessive supply on the spot. Quinine has not excited much interest, but closes to-day slightly firmer; it is anticipated that when the August deliveries are completed a better feeling will ensue. The new crop of chamomiles will shortly arrive, and prices are quoted on a slightly lower scale. Cod Liver Oil is nominally unchanged, but no business of importance has been done in this article. Cream of tartar is slightly easier. Cascara is much dearer, as also is Senega, but the chief topic on Mincing Lane is Shellac, the price of which is rising hourly.

ALUM.—Lump, £5 12s. 6d., and ground £6.

ARROWROOT.—At the auctions 200 barrels St. Vincent were offered, and the bulk oil sold at 2d. to 2¼d.; "Owia" at 3¾d.

BENZOLE.—50 per cent., 7½d. per gallon; 90 per cent., 9d. per gallon.

BISMUTH CARBONATE.—7s. 10d. to 8s. 1d. per lb.; Subnitrate, 7s. 1d. to 7s. 4d. per lb.

BORACIC ACID.—Powder, 24s.; crystals, 22s.

BORAX.—13s. 6d. to 14s. 6d. per cwt. for crystal and 14s. 6d. for powder. Howard's powder is quoted at 15s. 6d. to 16s. 6d.

BROMIDES—unaltered. Potassium, 1s. 11½d.; Sodium, 2s. 2½d.; Ammonium, 2s. 3d.

CAMPHOR.—Bells, 2s. 2d. per lb.; Flowers, 2s. 1d. per lb.

CANTHARIDES.—Russian are very scarce, and are quoted at 2s. 6d. per lb., f.o.b. Hamburg.

CARBOLIC ACID—Steady. Crystal, 34° to 35° C., 5d.; 39° to 40° C., 5¼d.; detached crystals, 39° to 40° C., 6¾d. per lb. in 2½-cwt. drums; crude, 60° F., 1s. 6½d. per gallon; liquid (95 to 98 per cent.) of pale straw colour, 1s. 2d. per gallon.

CASCARA—Is very much dearer; 65s. to 70s., according to age, is the spot quotation, but very little can be had in this position. There are no quotations for forward delivery, and, from cables received, it appears that the season of peeling is over, and the bark is very scarce.

CASTOR OIL.—Quiet and unchanged. Belgian firsts for Aug.-Dec. delivery, £19 10s.

CHAMOMILES.—This season's foreign crop is a good one, but the recent storms have done considerable damage. The rain has the effect of rendering the keeping properties of the flowers not so good. A quantity of the new crop has been sold for delivery during the second half of this month, and prices are rather low. The first pickings of the new crop are being sold for 60s.; this is for fine white bold flowers. A considerable trade has been done in old flowers at from 35s. to 40s., but there is not much more old to be had.

CINCHONA BARK.—The London auctions were held on Tuesday, and the supplies were much larger than those offered at last sale. The packages catalogued numbered about 1,450, being more than double the quantity put up at the preceding auctions. The bark sold fairly well, the average unit being 1¼. East Indian: 860 bales were offered and 690 sold; Succirubra stem chips at 3d. and root at 2½d.; Officinalis, natural stem chips and shavings at 3½d. to 5½d., root at 4¼d. to 6¼d. Ceylon: Only a small quantity sold, Ledger natural stem chips at 4⅛d. to 5d. Java: 14 packages sold, hybrid branch at 4½d. Of South American, 200 bales soft Columbian sold at 2⅞d. The next London sales are announced for September 15; the Amsterdam auctions will be held on September 13.

The amount of Peruvian Bark imported into the United Kingdom during the month of July 31 last was 6,819 cwt. less than the amount imported during the corresponding month of 1902. The half-monthly shipments of bark from Java amount to 416,000 Dutch lbs. This is considerably less than the quantity shipped during the corresponding period of last year.

CITRIC ACID.—1s. 1d. per lb.

CINNAMON.—19 bags Ceylon were catalogued at the sale, and all sold, good cuttings at 8d., quillings at 7d.

CLOVES.—18 bales Zanzibar were offered at auction; these were held, good bright for 4⅝d. 15 cases Penang sold fair picked 8½d.

COCAINE.—For the Hydrochlorate 17s. 6d. per oz. is the price quoted.

COCO-NUT OIL.—Steady, Ceylon spot, £25; Cochin spot, £32.

CODEINE—Is unchanged at 10s. per oz.

COD LIVER OIL—Is nominally unchanged, with very little business passing.

CREAM OF TARTAR.—Quiet and slightly easier; 98 per cent. foreign powder, 90s.

CREOSOTE.—1¾d. per gallon.

GINGER.—At Wednesday's auctions, 430 packages of Cochin were offered, and only nine cases were sold, these without reserve, bold very wormy and limed at 43s. 6d. Jamaica: 180 barrels offered, and about 50 sold at previous sale's rate, fair to good bright at 52s. to 56s., middling 56s., ordinary at 41s. Japan: 230 packages were offered and none sold. Bengal: 19 bags offered and all sold, good bold rough at 36s.

GLYCERIN.—For ton lots, 67s. 6d.; for half-ton lots, 68s. During the month of July last 4,949 cwt. of Glycerin were imported into the United Kingdom, and 8,992 cwt. were exported.

IODIDES—Unchanged. Potassium, 8s. 9d.; Sodium, 9s. 10d.; Iodoform, 11s. 8d.; Iodine Resublimed, 10s.

IPECACUANHA.—A large quantity has this week arrived from Rio.

LINSEED OIL.—Barrels, £20; London spot pipes, £19 15s.

MENTHOL—Is nominally quoted at 23s. to 23s. 6d. per lb., spot. It is reported that offers for September shipments have been made at 16s., c.i.f. Buyers, however, appear to be holding off.

MERCURIALS—Are lower, owing to reduction in Quicksilver. Calomel, 2s. 10d.; Corrosive Sublimate, 2s. 5½d.; White Precipitate, 3s. 3½d.; Red Precipitate, 3s. 2d.; Mercuric Sulphate, 2s. 5d.; Hydrarg. Sulph. Nig., 2s. 4d.

MORPHINE HYDROCHLORIDE.—4s. 6d. for large quantities, 4s. 8d. for quantities below 500 oz.

NUTMEGS.—West Indian fetched higher prices at the spice auctions on Wednesday. 110 packages were offered and sold, 60's at 2s. 6d., 68's at 2s.; 100's to 106's at 11d. down to 160's at 6d. Penang did not sell, neither did Singapore.

OLIVE OIL.—Mogador, £32.

OPIUM—Continues firm, but there is practically no business passing in the article. Prices for all qualities remain unchanged.

OTTO OF ROSES.—Virgin Serail: Finest Kezanlyk is quoted at 18s. 6d. per Turkish oz. This is equivalent to about 15s. 7d. for the English ounce.

PEPPER.—Tellicherry sold without reserve at slightly cheaper rates. No white pepper was sold.

PEPPERMINT OIL.—Small sales of H.G.H. have been made at last sale's rates—11s. 3d.; Wayne Co. pure, 12s.; dementholised, 6s. 6d.

PIMENTO.—Quiet at sales. 7 bags fair sold at 2⅜d.

QUICKSILVER.—£8 10s. per bottle. The following is the monthly statement issued by Mr. Alexander S. Pickering:—

Imports.	1903.	1902.	1901.	1900.
July—Bottles	619	84	6,619	200
January to July—Bottles	33,691	31,659	33,133	4,408
Exports.				
July—Bottles	932	1,446	861	946
January to July—Bottles	12,916	14,027	16,059	13,381

Average Price.

	1903.	1902.	1901.	1900.
July	£8 12 6	£8 15 0	£9 1 6	£9 7 6

QUININE—Steady and quiet. To all intents and purposes the price remains the same, small sales of B&S and Brunswick Sulphate for September delivery are reported at 11d. Howard's Sulphate is quoted at 1s. 3d. to 1s. 4d. per oz., in vials.

During the month of July last the total amount of Quinine and Quinine Salts imported into the United Kingdom was 39,023 oz. less than the amount imported during the corresponding period of last year.

SAFFRON.—The flowers will be ready for harvest about the end of October, and there is every prospect of a short crop. It is reported that the bulbs are rotting in the ground, and, curious as it may seem, this is not accounted for by the rains, but by the drought which has recently prevailed in Spain.

SENEGA.—The market is exceedingly firm. Quantities have been sold at 2s. 9d. and 2s. 11d., c.i.f. and 3s. 2d., c.i.f., is now quoted. Sales have been made at the last-named price.

SHELLAC.—The London market continues to move higher. The business done is not large; some spot sales have, however, been made. For fair T.N. 156s. spot is asked.

TARTARIC ACID.—English on the spot, 1s. 1½d.; foreign, 1s. 1¼d.

TURPENTINE.—Firm. American spot, 40s.

Foreign Markets.

RUSSIA'S CHEMICAL INDUSTRY.—The characteristic feature of the chemical industry in Russia last year was the almost total suspension of the import of chemical products and the very perceptible decrease in their prices, largely due to the growth of competition and improvements in manufacture. According to *Commercial Intelligence*, home manufacturers chiefly supplied the demand for mineral acids, salts, and alkalies, the import being limited and confined to small ports and frontier towns. In addition to the works at Moscow and Warsaw, a new plant with modern improvements came into operation at St. Petersburg, this causing a reduction of 30 per cent. in the price of sulphuric acid and its by-products. There was a marked increase in the amount of sulphur and sulphuric pyrites produced, and the import fell from 15,349 tons of sulphur, and 60,048 tons of sulphuric pyrites in 1901, to 1,512 tons, and 50,504 tons respectively in 1902. On the other hand, chloride of lime was imported (notwithstanding the duty of 2s. 6d. per 36 lb.) to the extent of 1,305,000 tons last year, as against 1,544 tons in 1901. A plant has been recently erected at Kiteshma, in the Kostroma Government, for manufacturing benzol and aniline from petroleum.

THE TRADE OF CHEFOO.—"Foreign opium has ceased to be much in demand in the province of Chefoo, only 723 cwts. having been imported in 1902 and 1,094 cwts. in the previous year," says Mr. Consul Herbert F. Brady, in his report on the trade of Chefoo for the year 1902. A heavier drop, however, has occurred in the native drug, which figures only to the extent of 391 cwts. This can only represent a fraction of what is actually consumed locally, and the balance doubtless comes in by junk, or by land from the interior, where the poppy is extensively cultivated, and thus escapes the cognisance of the foreign customs. The importation of such luxuries as aërated waters shows an increase. Amongst other articles of foreign import may be mentioned soap and soda, which, although showing a decrease on 1901, seem to be growing in favour with the Chinese. Of soap, £7,300 worth was bought in in 1902, whilst the value of soda imported was £5,200. This last was mostly of British manufacture.

DRUGS WERE EXPORTED FROM BARCELONA to the extent of 2,925 tons during the year 1902. This was a very slight decrease on the exports of the two preceding years.

CAMPHOR.—The value of camphor exported from Formosa in 1902 was £387,349, as against £245,195 in 1901. The contract for the sale of camphor under the monopoly expired on March 24, 1903, but has been renewed for a term of three years. An attempt has been made by the Government to monopolise the camphor produce of the Fokien Province in China, and a late member of the Formosa Government resides at Amoy in that province for the purpose of supervision.

OPIUM.—The value of opium imported into Formosa during last year fell from £240,669 in 1901 to £153,822. It is asserted by the authorities that the consumption of this drug is decreasing in Formosa.

U.K. Imports and Exports of Chemicals, Drugs, &c.

During the month ended July 31, 1903, chemicals, drugs, dyes, and colours to the value of £921,076 were exported from the United Kingdom. This was a decrease of £34,227 on the same month of last year, and an increase of £40,942 on July, 1901.

During the month of July, 1903, chemicals, drugs, dyes, and colours to the value of £745,129 were imported into the United Kingdom. This was a decrease of £7,440 on July, 1902, and an increase of £61,194 on the same period of the year 1901.

During the seven months ending July 31, 1903, chemicals, drugs, dyes, and colours to the value of £7,217,755 were exported from the United Kingdom. This was an increase of £333,791 on the corresponding period of the year 1902, and an increase of £643,658 on the first seven months of the year 1901.

During the seven months ending July 31, 1903, chemicals, drugs, dyes, and colours to the value of £5,285,131 were imported into the United Kingdom. This was a decrease of £258,650 on the corresponding period of last year, and a decrease of £287,383 on the same period of the year 1901.

TRADE NOTES.

Robert Gibson and Sons, Limited, the Manchester firm of lozenge manufacturers, have secured more commodious London premises at 4, New Zealand Avenue, Barbican, E.C. This step was rendered necessary by the continued increase in business, and the premises in Aldersgate Street were found to be insufficient to meet their requirements.

Veronal "Merck" is meeting with the approval of the medical profession. The demand for this new preparation, which has not as yet been advertised, is, we understand, very considerable. The Darmstadt works are much behind in deliveries, and in consequence a new plant for its manufacture is in course of erection. For fuller particulars concerning this product application should be made to 16, Jewry Street, London, E.C.

Blaud's Pills, containing 20 per cent. of ferrous carbonate, and prepared according to a recognised formula, will, if one is to judge by the result of a prosecution reported in this issue, be expected and required when a chemist or other retailer sells iron pills with the name Blaud on the label. Among the firms which are able to supply iron pills answering to the above requirements are Messrs. J. Woolley Sons, and Co., Limited, of Manchester; J. Lorimer and Co., London, N.; Willows, Francis, Butler, and Thompson, London, E.C.; Parke, Davis, and Co., London, E.C.; and Evans, Sons, Lescher, and Webb, Limited, Liverpool and London, E.C.

PATENTS AND TRADE MARKS.*

New Patent Applications.

MANUFACTURE OF SODIUM OXIDE (No. 17,609 of 1902).—J. Y. Johnson, 47, Lincoln's Inn Fields, W.C. (Communicated by Badische Anilin and Soda Fabrik, Ludwigshafen o/Rhine, Germany). Molten metallic sodium can be added to the molten sodium nitrate or sodium nitrite, the temperature of which should be kept below its decomposing point. If desired, the reaction can be carried out in the presence of a suitable diluent, such as caustic alkali. When sodium nitrite is used instead of nitrate the reaction proceeds more quietly and less metallic sodium is required. The reaction appears to proceed in accordance with the following equation:—

$$(1)\ 3Na + NaNO_2 = 2Na_2O + N.$$

$$(2)\ 5Na + NaNO_3 = 3Na_2O + N.$$

MANUFACTURE OF SODIUM HYPOCHLORITE (No. 18,947 of 1902).—J. T. Conroy, B.Sc., Ph.D.; J. H. Shores, M.Sc., Ph.D.; and the United Alkali Co., Ltd., all of 30, James Street, Liverpool. Relates to the removal of the water of crystallisation which is formed in the ordinary course of manufacture of sodium hypochlorite by dehydrating or partially dehydrating the compound in a partial vacuum in conjunction with a current of dry or warm air or gas. As an alternative, sulphuric acid or other matter having the power of taking up water may be used. The removal of the water increases the richness of the chlorine contained in the sodium hypochlorite.

DISINFECTANT WATER SOFTENER FOR TOILET OR OTHER PURPOSES (No. 20,791 of 1902).—C. Crocker, Norman House, Cockett, Swansea; and W. T. Lougher, Hawarden Crescent, Swansea. Dry soap powder is mixed with potassium permanganate and the mixture ground together and prepared as a powder. Any proportion of potassium permanganate may be used according to the purpose for which the preparation is intended.

Note.—Opposition to the grant of any of the above-mentioned Patents must be filed at the Patent Office on or before September 1, 1903.

OXIDISING PROCESSES AND THE MANUFACTURE OF ALDEHYDES, KETONES, AND QUINONES (No. 18,215, of 1902).—W. Lang, Wilhelmstrasse, Selbke-on-the-Elbe, Prussia. Relates to (1) the manufacture of organic compounds resulting from the oxidation of other bodies, which consists in using as an oxidising medium a manganic salt, preferably obtained by the electrolytic oxidation of a manganous salt, or in using a double salt of manganic oxide; (2) the manufacture of aldehydes, ketones, and quinones by the oxidation of the corresponding hydrocarbons, alcohols, and analogous compounds by means of a manganic salt (either alone or in the shape of double salts); (3) the manufacture of organic compounds obtainable by the oxidation of other compounds. The latter consists in alternately oxidising by electrolysis and using for the oxidation of the raw material the same manganic salt and acid mixture.

DENTAL SWAGES (No. 19,790, of 1902).—C. D. Grundy, Park Street, Ripon, Yorks. Relates in the first place to the use of soft soap as a new medium for transmitting the pressure to the metal plates laid upon the mould, and in the second place to the combination with a co-operating loose bottom cup or bed on the base of a press of a tapering loose cylinder of somewhat larger diameter at the upper than at the lower part, and containing in the lower part a rubber or flexible diaphragm with upturned flange and an internal flat flexible or rubber ring, and containing in the upper part a flexible cup with depending circular flanges and solid metal plunger plate, for the purpose of providing a force to hold down the swage case against the mould case, instead of bolting the two cases together, which is the usual practice.

EXTRACTION OF ALBUMEN FROM SUBSTANCES CONTAINING THE SAME (No. 22,254, of 1902).—Dr. D. Finkler, Wortstrasse, Bonn-on-the-Rhine, Germany. Consists in washing out the collogenic tissue, the fat, and other impurities from substances containing albumen by the employment of suitable diluted acids (such as hydrochloric, nitric, sulphuric, or organic acids), the said acids being employed at a temperature approaching or exceeding boiling point or at the boiling point, and not being neutralised, but being gradually diluted and washed away by the addition of a fresh warm or hot solvent, the substances being, if desired, first treated with alkali.

Note.—Opposition to the grant of any of the above-mentioned patents must be filed at the Patent Office, or before September 15, 1903.

New Trade Mark Applications.

"OZIDE" for photographic films, chemicals, and substances included in Class 1, by Kodak, Ltd., 43, Clerkenwell Road, E.C. 255,618.

"ORGO" (252,667) for chemical substances used for veterinary purposes; **"EMBRO"** label (253,145) for a medicinal oil for veterinary purposes; **"HUSKO"** label ("husk" disclaimed) (253,147) for a medicinal drink for veterinary purposes, by B. C. Tipper and Son, 43, Homer Street, Balsall Heath, Birmingham.

"INSA," for a chemical powder for horticultural purposes, by W. D. Hawdon, Front Street, Chester-le-Street. 254,825.

"KANNIN," for chemical substances used for agricultural, veterinary, etc., purposes, by T. B. Greenwood, 25, Tamworth Road, Ashby-de-la-Zouch. 255,916.

Bird and Snake coat-of-arms label, for a medicine for human use, by C. de Koning Tilly, Achterstraat, 13, Haarlem, Holland. 252,603.

"ANTIPHLOGISTINE" ("Antiphlogistic" disclaimed), for a compound drug for human use, by the Denver Chemical Manufacturing Co., 110, Cheapside, E.C. 253,831.

Two Shields, containing a griffin and a triangle respectively, for pharmaceutical products, by F. Hoffmann, la Roche and Co., Greuzacherstrasse, 184, Bale, Switzerland. 254,582.

"VIP," for a medicine for human use, by C. F. York, Grove Avenue and Railroad Street, Warrior's Mark, Penns., U.S.A. 254,735.

"DERSEE" label, for a medicated preparation for human use, by H. E. Beton, 73, Haverhill Road, Balham, Surrey. 255,311.

"NIZO," for chemical substances prepared for use in medicine and pharmacy, by Schülke and Mayr, Moorfurtweg, 13-15, Hamburg. 255,938.

"COMPLEXO," for liquid toilet soap, by R. Price, 13, Station Parade, Queen's Road, Peckham, S.E. 255,223.

"RADIUM," for perfumery, etc., by Thomas Grosert, 1, Rupert Street, W. 255,502.

"KEMO," for perfumery, etc., by Thomas Grosert, 1, Rupert Street, W. 255,752.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and 'Patent Notes for Inventors' free on application.

"FASCINO," for perfumery, etc., by Marshall and Wilson, 22, Porchester Gardens, Bayswater, W. 255,633.

Note.—Opposition to the registration of any of the above-mentioned Trade Marks must be filed at the Patent Office on or before September 2, 1903.

BRONKURA, for veterinary preparations, by F. Hewthorn and Co., Limited., 70, Finsbury Pavement, London, E.C. 255,800.

ULCERINE ("Ulcer" disclaimed), for an ointment for human use, by A. L. Rae, 4, Grosvenor Terrace, Teignmouth. 254,994.

SANTALOID ("Santal" disclaimed) for medicine for human use, by E. B. Lupton, 14, East Parade, Leeds. 255,628.

MEL-MAROBA ("Mel" disclaimed), for a medicinal preparation for human use, by Sharp and Dohme, 41, John Street, New York, U.S.A. 255,674.

GLYCOSOLVOL ("Glyco" disclaimed) for a chemical substance used in medicine and pharmacy, by M. J. Matthaei, 12, Cullum Street, E.C. 255,652.

NEVERRIP and device ("Neverrip" disclaimed), for bandages (medical and surgical), and other like articles, by H. A. Kaysan, 4, Wilhelmshoher Allee, Cassel, Germany. 253,997.

ROBA, for photographic printing papers, by G. H. Roberts, 122, Albert Road, Walthamstow, Essex. 255,668.

Note.—Opposition to the registration of any of the above-mentioned Trade Marks must be filed at the Patent Office, on or before September 12, 1903.

VETERINARY NOTES.

BY "CENTAUR."

Gapes in Chicken.

One of the neglected branches of study by the country chemist is the ailments of poultry. They are many, not to say obscure, but the one thing needful is disinfection, and who can better advise or supply the required substances than the man of drugs? At the present time of year the agricultural papers publish notes from farmers respecting their loses from the gapes, and these are not confined to domesticated fowls; great numbers of pheasants and partridges are annually lost from this parasite of the trachea and larger bronchi. It is known as the *Syngamus trachealis*, or, in the older works on helminthology, as *Sclerostoma syngamus*. It is a curious fact that this parasite was unknown until 1799, when attention was called to it in America. The male is much smaller than the female, and they are permanently joined together, the smaller male looking like a branch of the female. Both are small red worms, and each has an oral attachment to the membrane of the host. They are easily enough identified with the naked eye, as the female is about half an inch in length; the male about one-fith of an inch. Blood-sucking is their business, and the frequently large numbers found infesting a single individual soon cause anæmia and prostration. Their presence in the trachea sets up an intolerable irritation, and to relieve itself the chick extends the head and opens the mouth, hence the name "gapes." On land where birds have had the disease one year it is almost sure to increase the next, and from this circumstance it is supposed that an intermediate host is usual. It is not, however, necessary, as it has been demonstrated that the eggs escaping from the mature female can develop in the trachea of the same bird. Sick birds should be separated from the rest of the flock without delay, and placed in a warm, well-ventilated place in which thorough disinfection can be insured. The importance of segregation will be seen when it is remembered that the females when full of eggs rupture, and the eggs are taken in upon the food of other chicken. Treatment of individuals badly affected may be attempted by drawing out the tongue until the open glottis displays the parasites, and a feather or horse hair dipped in terebene is quickly brought in contact with them. The chick is then liberated, and frequently coughs up the writhing worms. Some of the patients die from broncho-pneumonia brought about by the remedy, but a skilful operator will save a considerable number. The ground should be limed and salted, and another breeding ground selected next year. The administration of tonics, especially ferruginous ones, helps materially to strengthen the victims to overcome the trouble until such time as the developed worms would voluntarily quit, but any hope of destroying them through the agency of remedies taken into the stomach must be remote.

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

Liability to Medicine Stamp Duty.

I rather fancy that the remark made by Mr. Glyn-Jones at this week's Council meeting, regarding the attitude taken up by the Board of Inland Revenue towards the recognition of books of formulæ, may be applied, in a wider sense, to the whole question of the I.R.'s new interpretation of the Medicine Stamp Act. The Board may certainly "be compelled to read the Act as they like," but it seems to me that, as in the old French proverb, "*L'homme propose, Dieu dispose,*" the learned gentlemen who sit on the King's Bench will have the final word in the matter. These same learned gentlemen may have something to say when the Board want them to convict on labels which hitherto they (the Board) have recognised in the interests of public convenience to be duty free. Nevertheless, I am inclined to welcome the new interpretation generally, as I feel convinced that, as matters now stand, we have a more accurate reading of the Act, and I feel sure that in the end this reading will turn out to our advantage. But when we hear that doctors' prescriptions will be subject to duty under certain conditions, then I feel inclined to say "Let 'em try," and "Don't forget the King's Bench." Were I a betting man I should be prepared to put a fairly substantial sum on the defendant.

Hampstead, August 7, 1903. C. E. Franklin Vallet.

While offering no opinion as to the new interpretation put on descriptive names of put-up remedies by the Inland Revenue officials, I do think there is one phase of it which we ought to fight tooth and nail, and that is their claim that liability to duty is incurred in a physician's prescription where, in the directions, the name of any disease is mentioned, *e.g.*, "When the cough is troublesome, etc." I think the attempt to cast the net of liability to stamp duty over such cases as these is monstrous. Liability, if any, would be incurred by the wording of the directions, and this is the act of the prescriber, which we are bound to follow and copy in full. Let Somerset House try and impress its views in this respect on Harley Street and the medical profession generally. I fancy there would be no small outcry, and I also fancy I can see a doctor dispensing his own prescriptions, sending his medicine out and, where he is obliged to use such directions as those quoted, carefully pasting a 1½d. or 3d. medicine stamp, as the case may be, over the neck of the bottle. We shall have to be very careful in this matter, or else they will soon discover that simple terms used in dispensing, such as "The Mouth Wash," "The Eye Lotion," without any directions at all, are liable, as indicating organs of the body. If our "Stomach Pills" or "The Stomach Pills," when applied to put-up and stock goods, are liable, they will also discover that "The Eye Lotion," etc., when used in dispensing, is liable. Again, let us know where we are. If stamp duty is incurred in such prescriptions, are they to be stamped *ad valorem* according to the price charged? Thus the same prescription dispensed in a low-class cheap neighbourhood, where, say, 10d. was charged for it, would require a 1½d. stamp, while, if put up by our more fortunate *confrères* of Bond Street, would call for a 3d. stamp (if charged over the 1s.). Furthermore, I do not fancy our medical friends would be over-pleased at seeing a special prescription of theirs turned out with a medicine stamp over the cork, looking for all the world like a bottle of "Father Catchgull's Syrup for Escaped Lunatics." I merely raise these important points for discussion and consideration.

Tewkesbury, August 11, 1903. L. L. Stroud.

A False Cusparia Bark.

In the article on "A False Cusparia Bark," by Mr. Pollard, B.Sc., in last week's *Pharmaceutical Journal*, he says that the false Angostura bark contains an alkaloid, and that he has no information concerning the physiological action of the alkaloid extracted. I have a book on medicine in my possession, written by T. Lindley Kemp, M.D., and published in 1853; therein he says that "There is, or was, a spurious Angostura bark, sometimes confounded with the right kind, and this false bark is a pretty active poison." It is in my mind that I have somewhere seen another account of this false bark, which stated that the alkaloid resembled brucine in its action. I would therefore suggest that the tests for strychnine and brucine be applied to this alkaloid, and that a solution of the same strength as liq. strychninæ be prepared and tried upon some of the lower animals.

Sheffield, August 5, 1903. R. Owen Daine.

The Major Examination.

The proposed alteration of the Major Examination syllabus came as a surprise to most members of the Society. Putting aside the injustice that men who pass the examination of the future in two subjects will be on a level with men who passed in four, is the proposed division desirable? There seem to me strong arguments against it. First, the only advantage of possessing the Major certificate lies in the fact that the holder has, or should have, not only a deeper knowledge, but greater range of subjects than the Minor man. This will be done away with by the new proposals. Second, how can a man know materia medica at all well without a deeper knowledge of chemistry and botany than he gets for the Minor Examination? Third, of what value will a deep mathematical knowledge of physics be to a pharmaceutical chemist? The object of the Major Examination was to make a competent pharmacist, not a specialist in physics! Fourth, suppose a man does specialise in chemistry and physics, what use are they going to be to him? Is the future Major man going to pose as a professor of chemistry, physics, or botany? Or will he be preferred to a man with a university degree in these subjects? No, certainly not! The pharmaceutical examinations will never be recognised outside their own calling. If the Board wants to alter the examination, rather let the number of subjects be slightly extended than diminished. For instance, no one can over-estimate a knowledge (it need not be a deep one) of biology in these days of animal extracts and serums.

August 11, 1903. E. C. Bennison.

I think if the recommendation of the Committee "to allow candidates to pass in two subjects" be adopted, as is allowable by the Bye-laws, it will result in an increased number of entries for the above examination, as many who, after passing the qualifying examination, go into business are not able to leave for three or four days, but would be able to spare the time required for two subjects examination. There are many who continue the study of chemistry and botany after qualifying but are unable to take the Major for the above reason.

August 11, 1903. "M.P.S." (216/36).

Pharmacy in the Transvaal.

In the *Pharmaceutical Journal* for June 27 I find an advertisement for an assistant for Johannesburg. It is required that the applicant should—(1) possess the Minor qualification, (2) have all-round experience, (3) have a knowledge of photography, (4) be able to extract teeth, (5) regard sobriety an essential feature. We are comforted with the fact that there are good prospects for a steady man with undeniable references, but I venture to state they are not immediate. The salary offered to this must-be-model young man is—first year, £16 10s. per month; second year, £18; second-class passage paid out, *conditionally on a two years' agreement.* Probably to a young qualified man receiving, say, £2 10s. per week at home this may seem a very fair offer. As one who has had an unfortunate experience of an agreement of this kind, I would like to point out what this really means in this part of our glorious empire. As a rule, the wholesale firms, who act as the agents for a client in a distant land, know mighty little about their man, and, as a matter of business, they are most anxious to fix him up, and, therefore, draw very largely upon their imagination as to the possibilities and probabilities of the berth. The firm's foreign representative, desiring to make himself most agreeable, does not press for any particulars, so that the available information is of the scantiest.

Since the future employer states very definitely what sort of a man he desires, I consider that, in all fairness to the second party, the following information should be forthcoming:—(1) Where is the place, (2) what is the population, (3) what is the nationality of the proprietor, (4) what are the hours week-days and Sundays, (5) what time is allowed off, (6) what is the class of business, (7) what are the duties, (8) what is the standard salary for a qualified chemist in these parts, (9) if, at arrival at destination, it is discovered that the above statements are not accurate, then the assistant should have the right to refund the expenses in full, and consider himself under no further obligation. Now we take the berth in question. I presume a man cannot equip himself for such a journey under £20, and he must reckon that to return as he came it will cost him £40; that is £60 he has got to reckon on his salary during the two years. Now to deal with the expenses of living. Be he the very embodiment of Scotch thriftiness he cannot live respectably in Pretoria or Johanesburg under £11 10s. per month, distributed as follows:—Board, £7; sharing bedroom, £2; washing, £1; pocket money, boots, etc., £1 10s.—total, £11 10s. For the first year he clears £60, which covers the expenses incurred; and in the second year he clears £80, and for this meagre sum he comes so far from home and friends, and puts up with the comfortless monotony of colonial life, and, furthermore, he will be quite convinced that he has had to put in days of real hard toil. How very comforting to find in a few weeks that a carpenter makes from £30 to £35 a month, a bricklayer anything up to £30, and that even a railway porter is receiving the same wages as you, a full-blown qualified chemist! We presume the assistant is one who has mastered the art of pharmacy, and has expended, say, some £200 on his pharmaceutical education, and has had, as desired, a good all-round business experience, and is desirous of giving his employer his best services, and is anxious to do the right thing by him. What an inspiration to find your market value is £25 per month (with probably comfortable free quarters thrown in), and to be made to feel you are bound by your sense of honour (a fact your employer takes good care to press home) to abide by your agreement, often with a man whose disposition is such as to make each day's labour a mental burden.

To me this agreement business is an enticing form of slavery thrust upon educated and intelligent men in this twentieth century. If a man's sense of honour is sufficient to make him stick to the bargain, then he must be little short of an archangel, and is fit to be translated. If, however, the foregoing facts are accurately stated, then a very different tale might be told, and the "good prospects for a steady man" might be more than a phantom march. What a mistake in a country of such possibilities as South Africa to come out under contract! You have the right to open for yourself, and are free to take on the best thing that is going. In a country where, as stated, sobriety is an essential feature, and where there are not too many really well-trained chemists, there is always a good berth waiting for the man who will. If you have decided to come out to South Africa, after considering the matter from all sides, come out a free man, and bring your undeniable references, with a letter of introduction to the best men. The general hours of business in Pretoria and Johannesburg are from 8.30 a.m. to 8.30 p.m., with an hour off for lunch and an hour for dinner, a half-holiday weekly, and Sunday duty every other week from 9 a.m. to 1 p.m. and 5 p.m. to 7.30 p.m. In outside places the hours are longer—from 7.30 a.m. to 9 p.m. The would-be colonial pharmacist must be prepared for plenty of hard work; since labour is so expensive, each man employs as little as possible, and it is necessary to be able to give a hand with the rougher work, and not to be above packing a box. Life in Pretoria and Johannesburg passes pleasantly, but in some of the outlying districts it is very monotonous. There are pharmacies in this country which are second to none, whereas in some of them you can buy anything, from a pin to a steam roller, and pharmacy gives first place to pipes and stationery.

The one great recompensing feature of life out here is the grand climate. This is a land of glorious sunshine and perfect blue sky, day in, day out. Provided a man is doing well financially, it is a country to settle in. Before leaving the Old Country, I read the following in one of the monthly magazines:—"Everything that comes from a chemist's shop must be regarded as a luxury. No mixtures at 8½d. are made up in Johannesburg, the usual price for making up a prescription being 7s. 6d.; the chemists can ask what they like, for really good and reliable men are few and far between." This is, of course, considerably overstated. The usual price for an 8-oz. mixture, tablespoonful dose, is 3s. 6d., and 6-oz. ditto 3s.; lotions 2s. 6d., and pills 1s. 6d. per dozen. The 1s. 1½d. patent medicines are sold at 1s. 6d., and the 2s. 9d. at 3s. 6d., drysaltery at double the home prices, and galenicals not much more than at home. For the man of small capital pharmacy in these parts is much more congenial than at home. Here you escape the everlasting pennyworth, since the threepenny piece is the lowest value coin which is handled. Since the medical men only prescribe, the pharmacy is the permanent home of dispensing. At present business is at a low ebb, and the labour market (except the native) is overcrowded in every department—in quantity, at any rate, if not quality. Taking everything into consideration, the mortar and pestle fraternity are doing fairly well in these parts.

Pretoria, July 20, 1903. Edward S. Francis, M.P.S.

The Conference at Bristol.

The letter which appeared in your issue of August 8, signed by Oliver C. M. Davis, was quite uncalled for. During his paper, read at the Bristol Conference, Mr. Nicholls made, somewhat thoughtlessly and hastily, disparaging remarks about a condenser designed or used by Professor Sydney Young, and, on being reprimanded by Mr. Davis, a very complete and full apology was immediately forthcoming from Mr. W. S. Nicholls, and the subject should have been at once allowed to drop. The word "ungentlemanly" need not have appeared in the very unnecessary letter referred to. I hold no brief for Mr. Nicholls—indeed, I should scarcely know him again if I were to see him; but we all like fairness in these matters, especially on occasions such as the Conference meetings, when the best of good feeling prevails.

Cambridge, August 8, 1903. E. H. Church.

⁂ The letter sent by Mr. Davis was published simply because he seemed anxious to accept responsibility for remarks which had been attributed inadvertently to another person. No further letters on the subject can be inserted.—[Ed. *P.J.*]

PUBLICATIONS RECEIVED.

Portraiture for Amateurs without a Studio. By Rev. F. C. Lambert, M.A. Parts 1 and 2. Pp. 176. Price 1s. each part. London: Hazell, Watson and Viney, Limited, 52, Long Acre, W.C. From the Publishers.

The Elementary Chemistry of Photographic Chemicals. By C. Lordes Ellis, F.I.C., F.C.S. Pp. 120. Price 1s. London: Hazell, Watson and Viney, Limited, 52, Long Acre, W.C. From the Publishers.

Carbon Photography Made Easy. By Thos. Illingworth. Pp. 154. Price 1s. net. London: Iliffe and Sons, Limited, 3, St. Bride Street, E.C. From the Publishers.

Rural Handbooks, No. 6.—Utility Fowls: Their Selection, Improvement, and Diseases. By H. Francklin. Pp. 36. Price 6d. net. London: Dawbarn and Ward, Limited, 6, Farringdon Avenue, E.C. From the Publishers.

Guide to the Search Department of the Patent Office Library, with Appendices. 2nd Edition. Patent Office Library Series, No. 4. Pp. 7-126. Price 6d. London: The Patent Office, 25, Southampton Buildings, Chancery Lane, W.C. 1903. From the Publishers.

A Few Facts About Food, being a lecture delivered at the Father Mathew Hall, Dublin, by J. C. McWalter, M.A., M.D., D.P.H. Pp. 3-31. Dublin: The *Nation* Printing Works, 90, Mid-Abbey Street. From the Author.

Good Health. Vol. 2, No. 3. August, 1903. Pp. 67-96. Price 1d. Will Power in the Treatment of Disease. London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited, 23, Paternoster Row, E.C. 1903. From the Publishers.

The Midwives Act, 1902, and the Teaching of Midwifery to Students of Medicine. An address at the beginning of the course of obstetrics at Owens College, April 23, 1903. By Professor W. J. Sinclair, M.A., M.D. Pp. 3-39. Price 3d. Manchester: Sherratt and Hughes, 27, St. Ann Street. From the Publishers.

REPLIES TO CORRESPONDENTS.

INFORMATION required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Terms for Dilution ("Interested").—If you will send your name and address, not for publication, your letter will be considered.

Optics (G. B. W.—93/3).—Any one may style himself an optician. The examinations you mention are of much the same standard and value.

Zinc Oleate (W. B.—92/33).—You will find it better to reduce the cold oleate to a granular powder, and dry it in an air oven at a temperature not exceeding 60° C.

Compendium (E. W. B.—216/32).—Your suggestion is already under consideration, but we are unable to say at present what will be done in the direction indicated.

Chemical Apparatus (H. P. H.—93/4).—Messrs. A. Gallenkamp and Co., Limited, 19 and 21, Sun Street, Finsbury Square, London, E.C., will be able to meet your requirements.

Crookes Tube (J. E.—92/30).—This is a glass tube exhausted to about one-millionth of an atmosphere, with electrodes between which a discharge can be passed through the rarefied air or other gas in the tube.

Lava (J. W. D.—92/29).—We are, unfortunately, in the same position as yourself as regards the needful appliances, and regret, therefore, that we cannot undertake the analysis. Your specimen has been returned.

Boot Polish (G. G.—92/25).—We do not know the preparation you mention, and you do not say anything about the nature of the article. If you send a specimen for examination we may be able to assist you.

Washing Cream (S. W. B.—92/27).—There does not appear to be anything in the preparation except turpentine and ammonia. Try equal parts of spirit of turpentine, strong solution of ammonia, and water, emulsifying thoroughly.

Balance (W. B.—92/32).—Inexpensive balances for dispensing are supplied by Mr. W. Stone, 41, Gloucester Street, London, W.C.; Messrs. Philip Harris and Co., Edmund Street, Birmingham; and Messrs. J. E. Becker and Co., Hatton Wall, London.

Registration (J. M.—93/5).—It will be necessary for you to place the facts before the Registrar of the Pharmaceutical Society, 17, Bloomsbury Square, London, W.C. Without a knowledge of the nature of your business before 1868, it is impossible to give an authoritative opinion.

Microscopes (W. B.—92/31).—See pages 14 and 16 of the Supplement to the *Pharmaceutical Journal* for March 28 of the present year, where full particulars are given. Messrs. F. Darton and Co., 142, St. John Street, E.C., or Mr. C. Baker, 244, High Holborn, W.C., can supply you with what you require.

Formula on Label (G. C. R.—214/16).—(1) An abbreviated Latin formula on the label, with quantities, similar to an ordinary prescription, will be regarded as an adequate disclosure of the composition of the preparation. (2) We are making inquiry on this point. (3) The authorities say not.

Spray Fluid (J. B. M.—92/28).—The mixtures containing sodium carbonate are considered to be inferior in practice to the Bordeaux mixture prepared with lime. You will find very full information on the subject in Strawson's 'Standard Fungicides and Insecticides in Agriculture' (Spottiswoode, 1s. 6d.).

Sale of Quinine Wine (J. R. V.—216/45).—There must be some mistake in the matter, as we have been informed at Somerset House that no change is contemplated in the arrangement by which chemists and druggists are permitted to sell without a licence wines which are sufficiently medicated to render them unfit for use as beverages.

Microscopical Slides for the Minor (G. T. D.—93/1).—Mr. Newsholme, High Street, Sheffield, supplies collections of slides suitable for your purpose. Also, in the catalogue published by Mr. C. Baker, 244, High Holborn, London, W.C., you will find full particulars of the slides, which that firm is prepared to supply for pharmaceutical students.

Standardising Bichromate (W. B.—92/33).—The reactions involved in the process are as follow:—

(1) $K_2Cr_2O_7 + 14HCl + 6KI = Cr_2Cl_6 + 8KCl + 7H_2O + 3I_2$.

(2) $2Na_2S_2O_3 + I_2 = Na_2S_4O_6 + 2NaI$.

You will notice that six molecules of sodium thiosulphate correspond to one molecule of potassium bichromate.

BIRTHS.

Stead.—On August 6, at 87, Derby Road, Thornbury, Bradford, Yorks, Clara, the wife of Mr. W. Stead, M.P.S., of a daughter.

Vallet.—On August 3, at 8, Belsize Park Terrace, Hampstead, the wife of C. E. Franklin Vallet, of a daughter.

MARRIAGES.

Forbes—Bulloch.—On August 5, at the Windsor Hotel, Glasgow, by the Rev. John Fairley, minister of Larbert and Dunipace, John J. Forbes, chemist, Denny, to Agnes Brown, elder daughter of Mr. William Bulloch, Denny.

Ironmonger—Hughes.—On August 10, at St. John's Church, Notting Hill, W., Herbert Lovell Ironmonger, M.P.S., of Chiswick, to Janet, youngest daughter of Mr. S. T. Hughes, of Oxford.

DEATHS.

Stocker.—On August 12, George Stocker, Chemist and Druggist, Exeter. Aged 42. Mr. Stocker, who was a member of the Pharmaceutical Society, was the President last year of the Exeter Association of Chemists and Druggists, but owing to ill-health he was unable to carry out the duties of his office to his satisfaction. He succeeded several years since to the business carried on previously by Mr. Passmore, and some forty years ago by Mr. Palk. He was a careful dispenser, and by his industry had increased the prosperity of this old-established business. He leaves a widow and family.

Stroud.—On August 10, John Stroud, Pharmaceutical Chemist, Bristol. Aged 72. Mr. Stroud, who had been a member of the Pharmaceutical Society since 1856, was for many years local secretary for his district, but he retired from that position when the Society's local officers were reorganised a few years ago.

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Sir James Blyth, Messrs. Anderson, Attfield, Barnes, Battle, Beckwith, Blyth, Boorne, Bowness, Brown, Bührer, Bullivant, Church, Clark, Coombie, Davenport, Downie, Edwards, Eminson, Farrer, Farrall, Francis, Fraser, French, Gadd, Hudson, Hutchens, Ironmonger, Kirkby, Lawrenson, Lennox, Lindemann, Lloyd, Lorimer, Lyon, Martin, McVitie, Naylor, Nicholls, Osborne, Pattison, Peck, Pitcher, Pollard, Proctor, Rossiter, Sage, Sell, Smart, Squire, Stead, Still, Temperton, Timmins, Todd, Turner, Turney, Volans, Walker, Walton, Ward, Wood.

Telegrams "PHARMACEUTICAL JOURNAL LONDON"
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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, August 20, 1903.

Potassium Chlorate is not usually considered a poison, but a child at Morecambe, who was given a dozen tabloids, died from the effects.

The Obituary Column this week includes the names of Mr. W. H. Gilkes, of Oxford, Mr. H. J. Parson, of Cambridge, and Mr. Thomas White, of Liverpool.

The Dispensing Difficulty is still being discussed in "London's best"; whilst the *Daily Chronicle* has selected "Do Tradesmen Cheat" as its topic for the gooseberry season.

Under the Sale of Food and Drugs Acts only two prosecutions are reported this week. In neither of these cases, which related to pepper and vinegar, was a chemist concerned.

Excursions and Picnics are the order of the day among the local associations, and the chemists of West Ham and District, Torquay and Peterborough, have held social gatherings of that nature.

The Chemistry of Milk is the subject of an article in this issue. The Board of Agriculture has interested itself with regard to the analysis of sour milk by public analysts, and the verification of milk-testing apparatus.

For Being Concerned in Carrying 56 Pounds of Saccharin, for which duty had not been paid, the manager of a Wigan Mineral Water Company was on Tuesday of this week fined the full penalty of £336, or in default six months' imprisonment.

A correspondent says he intends to distribute copies of the Pharmaceutical Society's proposed 'Compendium of Medicines' among the medical men in his neighbourhood. This appears to be a good idea, and the example will doubtless be followed by other chemists.

With the Prorogation of Parliament on Friday, the 14th inst., the fate of the Pharmacy Acts Amendment Bill was for the present finally sealed. As already announced in the Journal, it is proposed, before the Bill is introduced next Session, to insert a clause specifically exempting medical practitioners from the provisions of the Bill.

For Selling Cough Mixture and two other compounds containing methylated spirit, a Maidstone chemist has been fined £6, with 30s. costs. Defendant, it was stated, had rendered himself liable to a penalty of £100 in each case; for the defence it was pleaded that the recipes and preparations were among the stock taken over from the former proprietor of the pharmacy.

The Conclusion of Mr. J. F. Tocher's Scheme of territorial representation on the Council of the Pharmaceutical Society is now published, together with two illustrative maps. Whatever may be thought of the principles or details of the proposal, there can be no question that the subject will appear on the agenda-paper of many a local association during the coming session.

The Inland Revenue Authorities state that it will not be necessary to specify on the label the exact composition of remedies to avoid stamp duty. An adequate indication of the ingredients will suffice. The question of medicine stamp duty has this week received attention from the lay press, which appears singularly well informed on the subject. *The Daily News* has twice referred to the matter, while the *Daily Chronicle* and the *Morning Leader* have also published interesting paragraphs, which appear to have been widely copied in the provincial press.

At To-day's Drug Auctions, bids for the most part were slow in coming. There are few changes of note to record. Cape Aloes are again dearer, whilst Peppermint Oil and Menthol are rather cheaper. Senna sold at good prices. The bank rate remains unchanged.

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KNOWN, ADMITTED, AND APPROVED.

It was intimated in last week's Journal that the Board of Inland Revenue was endeavouring to rearrange, upon a satisfactory basis, matters connected with the sale of known, admitted, and approved remedies, and expression was given to the conviction that important developments might shortly be expected to take place. That anticipation has already been realised, and it is now possible to state definitely what are the present intentions of the Board. It will be remembered that in May last the Board voluntarily and unreservedly decided to assist chemists and druggists to obtain the fullest possible benefit that could reasonably be expected from the new interpretation placed upon the Statute by the High Court decision in the case of Farmer *v.* Glyn-Jones. It was not compulsory upon the Board to regard the judgment in question as having absolutely decided that all compounded medicines in common use, when not rendered liable to duty by special circumstances, fall within the special exemption in the Medicine Stamp Duty Act, if sold by a duly qualified chemist and druggist. After careful consideration, however it was decided to give chemists the benefit of any doubt, and to regard as falling within the special exemption medicines composed of drugs the denominations, properties, qualities, virtues, and efficacies of which are known, admitted, and approved. The onus of proving that any medicine sold by a chemist and druggist falls within this category might have been thrown upon the seller in each particular case, but the Board of Inland Revenue further decided to waive the necessity of such proof being given, provided that (1) the medicine has not been specially rendered liable to duty by the first vendor thereof, and (2) that the composition of the preparation is disclosed, either by a statement of the formula upon the label, or by an indication on the label that the medicine is prepared in accordance with a formula in the British Pharmacopœia or some other well-known book of reference.

It was originally intended that the statement of the formula upon the label should be a complete statement of all the ingredients of the medicine, and the exact quantity present of each ingredient. But the first paragraph of the following letter shows that the Board of Inland Revenue has now reconsidered the point, and made what cannot but be regarded as a very important concession to chemists and druggists:—

> Inland Revenue, Somerset House, London, W.C.
> August 14, 1903.
>
> Sir,—Adverting to the recent decisions of the Court in the cases of Ransom *v.* Sanguinetti and Farmer *v.* Glyn-Jones, I am directed by the Board of Inland Revenue to acquaint you that they have now decided not to regard a full statement of the formula as a condition necessary to bring a medicine within the scope of the exemption in favour of "known, admitted, and approved" remedies, and they will be satisfied if the label contains an adequate indication of the ingredients of the medicine.
>
> The Board would regard as being *prima facie* within the scope of the exemption medicines described by such titles as "Quinine and Iron Tonic," or "Compound Rhubarb Pills," provided the titles in each case disclose the principal active ingredients of the preparation.
>
> I am to add that in view of the impossibility of determining from an inspection of a label whether the ingredients of the medicine to which it relates are thereby adequately disclosed, the Board must in future decline to advise chemists whether or not the terms of a particular label are such as to bring the medicine within the scope of the exemption.
>
> I am, sir, your obedient servant,
> E. E. Stoodley,
> *Secretary.*
>
> The Editor of the *Pharmaceutical Journal.*

To put the matter briefly, the letter conveys the information (1) that the Board of Inland Revenue has now decided to admit what may be regarded as a third alternative to the payment of medicine stamp duty upon preparations recommended for the prevention, cure, or relief of disease, and (2) that the Board now declines to indicate whether or not the wording of labels for medicines is such as to incur liability to stamp duty. The disadvantage attending the change in practice indicated in the concluding paragraph of the letter should be obvious to everyone, but the difficult position in which the Board now finds itself placed, owing to the recent recognition of the chemist's privilege, is said to render it quite out of the question that labels should be marked as formerly. For the future, therefore, chemists and druggists must determine for themselves whether the wording of their labels for compounded medicines is likely to render the preparations liable to duty, unless they choose to submit specimens of the labels, with full particulars regarding the preparations, to such persons as the Secretary of the Pharmaceutical Society or the Editor of the *Pharmaceutical Journal*, both of whom will at all times be glad to give advice on such matters.

An adequate indication of the ingredients of the medicine upon the label should be taken to mean an enumeration of all the active medicinal substances present, without any reference to quantities. As stated in the letter from Somerset House, such titles as "Quinine and Iron Tonic" and "Compound Rhubarb Pills" will only be considered within the scope of the exemption if the preparations contain no important ingredient other than those named in the titles. Such a description as "Cough Mixture—containing Ipecacuanha, Squills, and Tolu" may or may not be within the scope of the exemption, according to the special circumstances of the case; if any important drug be present as an ingredient, other than ipecacuanha, squills, and tolu, the disclosure will be regarded as insufficient, and the only safe rule that can be suggested is to specify upon the label the names of all the active medicinal substances contained in the preparation. Thus, pills consisting of equal parts of blue pill and compound extract of colocynth, without any other active ingredient, will be adequately described upon the label as "Antibilious Pills—containing Pil. Hydrarg. and Ext. Coloc. Co." So far as medicines dispensed from medical prescriptions are concerned, we understand that the Board of Inland Revenue has no intention of interfering with legitimate dispensing practice, though it is held by the Board that liability to duty is actually incurred when such words as "Cough Mixture," "Indigestion Mixture," or "To be taken when the cough is troublesome," appear upon labels for medicines dispensed. But as the outcome of recent interviews with the Inland Revenue authorities, we are in a position to state that no claim to medicine stamp duty is likely to be made in respect of medicines *bonâ fide* dispensed and labelled in accordance with medical prescriptions. In conclusion, it may be pointed out that verbal recommendations do not render medicinal preparations liable to duty in any case, and that—as liability to duty is only incurred in the case of non-proprietary medicines when they are held out or recommended on labels, etc.—a chemist and druggist will incur no liability if, when asked for antibilious pills or cough mixture, he supplies those articles labelled simply as "The Pills" or "The Mixture," just as is customary in regular dispensing practice.

THE ANALYSIS OF MILK.

The Board of Agriculture has issued a circular to loca authorities in Great Britain in regard to the analysis of milk. The fact that samples of milk referred to the Government Laboratory, under the provisions of the Sale of Food and Drugs Acts, are invariably sour when received, has occasionally given rise to inquiries as to the practicability of making a satisfactory analysis of sour milk. The Board states that, except in a limited number of exceptional cases, there is no practical difficulty in accurately inferring the composition of the milk when fresh from the analysis of the milk when sour. The change which takes place in a sample of milk kept from contact with air, as in a bottle nearly full of the sample, and fitted with a good sound cork sealed with wax, is, as a rule comparatively slight. The changes which affect the analysis are concerned with the non-fatty solids only, and more particularly with the milk-sugar. The milk-sugar gives rise either proximately or remotely to a variety of products, the most important of which are lactic acid, ethyl alcohol, and acetic acid; but the only quantitative determinations which need be made in order to determine the loss in the non-fatty matter by keeping are the proportion of alcohol, and the amount of free volatile acid, together with the ammonia derived from the alteration of the casein in the milk. The slight alterations in weight consequent on the hydrolysis and conversion of lactose into lactic acid, and the formation of certain so-called bye-products of alcoholic fermentation, are partly positive and partly negative in direction, but their joint effect is too small to have any appreciable influence on the result. The entire correction, which, of course, is always additive, in the case of a properly preserved sample from three to six weeks old is fairly constant, and may be said to range from 0·2 to 0·3 per cent. In a few cases it has been found to be as low as 0·1 per cent., and in very exceptional cases, as in badly-secured samples, or in bottles only partially filled, it has risen to 0·7 or 0·8 per cent. If the fermentation has passed into the butyric acid stage, the amount of free acid is greatly increased, and owing to the separated casein it is sometimes impossible to get the sample into a proper and uniform condition for analysis. In such cases the Government laboratory declines to proceed with the examination. Such a result, however, practically never happens in the case of samples which have been properly taken and kept by the inspectors pending the appeal to the Government laboratory. The Board of Agriculture has also made arrangements with the Committee of the National Physical Laboratory for the examination of the Lister-Gerber milk-testing apparatus; and the Committee of the Laboratory is now prepared to receive, for the purpose of verification, the pipettes, measuring-glasses, and test bottles used in the Lister-Gerber and other similar methods of testing milk. Standards of accuracy have been laid down, and all instruments which pass the test will be marked with the Laboratory monogram. The fees which will be charged are as follow:—Test bottles, or pipettes, with one mark, 6d.; measuring-glasses with one mark, 9d.; graduated pipettes tested at five points, 1s. 6d.; and measuring-glasses tested at five points, 1s. 9d. Half these fees are charged in the case of instruments failing to reach the required standard. Copies of the regulations for the examination of such testing apparatus can be obtained upon application to the Director, National Physical Laboratory, Bushy House, Teddington.

THE EUCALYPTS.

The growing use of the timber of the eucalypts, and the increasing interest which is being taken in their classification, are matters of far-reaching importance. The work of Messrs. **Baker** and **Smith**, recently reviewed in these columns, and the critical revision of the genus *Eucalyptus* which Mr. J. H. **Maiden**, an eminently practical botanist of high reputation, is now producing, have put botanists in possession of much information which was formerly wanting. In a letter to *Nature*, the eucalypts are further discussed at some length by Messrs. D. E. and E. **Hutchins**, who remark that in a few years, if the present rate of progress continue, there will be more eucalypt plantations in South Africa than in all other countries combined. At this moment eucalypt sleepers are rapidly displacing metal and creosoted-pine sleepers on the railways, and soon "South Africa will be paying out something like a quarter of a million pounds yearly for eucalypt timber imported for railway sleepers and mining timber (little or none of this, by-the-way, *E. globulus*), so that any delay in the prosecution of eucalypt planting in South Africa would be a most expensive proceeding. . . . So long as the eucalypt is properly fitted to its climate, it seems to grow better in South Africa than in Australia." Messrs. **Hutchins** suggest that it is worthy of consideration whether plantations of young trees of *Eucalyptus Macarthuri* might not be cultivated profitably for the preparation of its valuable geranyl-acetate oil. It is considered probable, also, that the cultivation of some species, *E. Smithii*, for instance, could be undertaken with profit, and that there could be distilled from the young growth an oil which would compete, both in price and eucalyptol content, with any European oil of that class. In many instances it is a pity that the trees should be felled for their leaves alone, as by judicious lopping a fresh supply of leaves could more quickly be obtained, so that a permanent supply might be assured. With regard to the possibilities of other countries in respect of the plantation and cultivation of the genus, it is remarked that "there is a woeful neglect of scientific forestry in the field" in the Australian Colonies, particularly in the older settlements of East Australia. In spite of the very different attitude adopted in America, it is not considered likely that there will ever be any great production of eucalypt timber in North America, South California being the only district which quite repeats any Australian climate. It is doubtful if eucalypts will ever do much in the eastern states. "Eucalypt culture in America is still in its infancy; they have not yet discriminated the valuable from the many worthless species, nor fitted, as far as may be, the species to the climate."

THE STRENGTH AND ORIGIN OF BLAUD'S PILLS.

It now seems likely to be generally accepted that Blaud's pills, by whatever process made, should contain about 20 per cent. of ferrous carbonate. Such a standard has not been universally recognised heretofore, and the fact that pills containing a lesser proportion have been manufactured and sold for some time past does not, therefore, necessarily reflect upon the makers, since an impression has prevailed that any pills containing, as the chief ingredient, ferrous carbonate produced by chemical reaction in the course of manufacture, were entitled to be named Blaud's pills. The uncertainty on this point was largely due to the supposition that Dr. Blaud's original formula for the pills had never been published. A statement to that effect appears in 'Pharmaceutical Formulas,' where also the modified formula due to Simonin (1841) is incorrectly said to be the "original" formula. But Dr. Blaud had himself given a copy of his prescription in a letter published in the *Bulletin Général de Thérapeutique* of April, 1832, as well as in the *Journal de Pharmacie* of the same date. The letter was printed in full in the former journal, but in a condensed form only in the *Journal de Pharmacie.* The same formula, however, appeared in each case and must undoubtedly be regarded as the original one. Subsequently, it underwent several modifications and, ultimately, was included in the 'Codex Medicamentarius,' the formula therein appearing being now accepted in France as representing Dr. Blaud's original formula, modified in such a way as to improve the keeping properties of the pills. That fact was made clear in an article contributed to the *Pharmaceutical Journal* of August 18, 1894, by Mr. Joseph Ince, who may well have been surprised that the article then published should have led to his appearance as a witness at the North London Police Court (see *ante*, p. 278) after a lapse of nine years. In that article the origin of the formula for Blaud's iron pills, so far as was then known, was given in some detail, but further information on the subject was given in the *Pharmaceutical Journal* of May 9, 1903, when another article was published, which dispelled, once for all, the uncertainty which had existed. It is not altogether a matter for surprise that credit for the discovery of the original formula has been claimed elsewhere, but, as a matter of fact, that formula has never yet been published in any English journal except this.

PRISON DISPENSING IN IRELAND.

On Thursday, August 13, 1903, Dr. MacDonnell, M.P., asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the case of poisoning in Maryborough Prison, and to the fact that the medicines required for the use of the inmates were under the charge of and dispensed by a person without medical qualification; and, if so, whether he would consider the advisability of appointing a duly qualified pharmaceutical chemist to this prison. The Chief Secretary's reply ran as follows:—"The honourable member doubtless refers to the occurrence of January last in Maryborough Prison. On that occasion a number of persons took ill from the effects of hellebore powder inadvertently placed in their food. The powder, which is not a scheduled poison, was not kept in the prison as a medicine, but in the general stores as an insecticide for use on the prison farm. No permanently injurious results followed, and the use of the powder has since been discovered. All medicines for the use of the inmates of the prison are under the charge of the medical officer who dispenses them. It is not considered necessary to give him the assistance of a pharmaceutical chemist."

Mr. George Wyndham is one of the few Cabinet Ministers who are generally conceded to have added to their Parliamentary reputation during the session which has just closed. It may be assumed that the broader questions of Irish government in which he has interested himself with such success leave him little time to make himself familiar with pharmaceutical problems. It might have been wished, however, that he had studied a little more closely the statement which the officials of the Irish Secretary's Office prepared for him as an answer to Dr. MacDonnell's question. That answer, it may be observed, implies that only the medical officer at Maryborough Prison dispenses medicines there. If that is so, Dr. MacDonnell's "fact" that the medicines are dispensed by a person without medical qualification is, as an Irishman might say, not a fact at all. When it is remembered that a duly qualified pharmaceutical chemist is the only person, other than a medical man, entitled to compound prescriptions in Ireland, the complacent self-satisfaction of the authorities and their strange reluctance to place matters at the Maryborough Prison dispensary on a proper footing are all the more inexplicable. If the Government servants in the Irish Secretary's Office themselves had to take the medicine dispensed by a person without qualification, it is possible that a more sensible and satisfactory reply might have been given.

PILLS IN THE PRESS.

The British public woke up one morning last week and discovered that in future a penny packet of antibilious pills might cost twopence halfpenny. Through that well-informed medium, the *Daily News*, as well as from other sources, it learnt some of the details of the new policy of the Board of Inland Revenue, and no doubt could hardly believe its own eyes. The news has now become widely circulated in the provincial press, and it remains to be seen what attitude the physic-taking public will assume. Whether it will passively resist, or refuse to swallow pills of known and approved composition, time alone will show.

THE DISPENSING DIFFICULTY.

It is unfortunate that the discussions on the prescribing chemist and dispensing doctor which continue to claim the attention of the daily press should have assumed such a disagreeable aspect. Anything likely to estrange the members of each calling ought to be eschewed, and no useful purpose can be served by bickerings as to whether the doctor or the chemist should be allowed to make the most mistakes. As a matter of fact when the subject was re-opened in these columns it was never intended even to refer to such matters; nor, indeed, was it thought necessary to make use of such arguments to bring about the end which a host of medical practitioners and a multitude of chemists have in view. The largest circulation in Bouverie Street has recently been affording space to correspondents who seem to consider the best way to solve the difficulty is to point out each other's shortcomings, and one who adopts as a *nom de plume* the name of the father of medicine goes so far as to call the prescribing chemist a criminal. It is pleasing to note, however, that in its editorial comment this same periodical takes a more Christian view of the doctor than does the letter-writing chemist, and regards the chemist more favourably than do certain alleged doctors who appear to be suffering from a grave attack of *cacoethes scribendi.* Everyone will agree with the statement that doctors and chemists are "two classes of men who ought to work harmoniously together." It is to be hoped that means will be found whereby complete harmony may be produced, and that, during the coming winter session, local associations will, if this subject appear on the programme, leave enmity out of the way and approach the difficulty with open minds.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Detection of Saccharin in Beers and Wines.

Boucher and Boungne destroy tannin and colouring matter in beer and wine by oxidation with permanganate before shaking out the saccharin with ether. Beer is first acidified with a few drops of H_2SO_4, then treated, in the cold, with excess 1 per cent. solution of $KMnO_4$; when reaction ceases, excess of the oxidising agent is removed by the addition of SO_2 and the liquid shaken out with ether in the usual manner. Wine is treated in a similar manner, but with the application of heat. It is not necessary to effect the complete decolouration of the liquid as in the case of beer. Not only does this preliminary treatment destroy tannin and colouring bodies, but also salicylic acid, which, if present, may vitiate the results. Besides, the liquid thus treated does not form an emulsion when shaken up with ether.—*Bull. Soc. Chim.*, **29**, 411.

Some New or Little Known Fixed Oils.

J. A. Wijs gives the constants of the following fixed oils:—*Echinops oil* from the seeds of *Echinops ritro*. Specific gravity at 20° C., 0·9275; free acid number (as oleic acid), 4·38 to 7·31; saponification number, 189·2 to 190; iodine number, 138·1 to 141·2; acetyl saponification number, 211·2; acetyl number, 26·5. The oil is soluble in petroleum ether and other organic solvents, and in 15 parts of alcohol. *Perilla oil*, from the seeds of *Perilla ocymoides*, has the odour and taste of linseed oil. Specific gravity at 20° C., 0·9306; free acid number, 0·48; saponification number, 189·6; iodine number, 206·1. *Water-melon oil* from the seeds of *Cucumis citrullus*. The fixed oil obtained by benzol extraction was yellow in colour, bland in taste, and had scarcely any odour. Specific gravity at 20° C., 0·9160; free acid number, 1·20; saponification number, 189·7; iodine number, 118·0. *Tea-seed oil* from Japan had the specific gravity, 0·911 at 20° C.; free acid number, 8·07; saponification number, 188·3; iodine number, 88·9. The oil is yellow and has an aromatic odour and taste. *Garden-cress oil*. The oil extracted by benzol from the seeds of the garden-cress, in which it occurs to the extent of 25 per cent., has the following characters:—Specific gravity at 20° C., 0·9212 to 0·9221; free acid number, 0·51 to 0·56; saponification number, 185·6 to 186·4; iodine number, 133·4 to 139·1. It has the characteristic odour of the plant. *Radish oil* extracted by cold pressure from radish seed has the specific gravity at 20° C., 0·9142; free acid number, 1·68; saponification number, 179·4; iodine number, 112·4. It is yellow in colour and had the odour and taste of rape oil. *White mustard oil*, expressed, had the specific gravity at 20° C., 0·9121; free acid number, 1·27; saponification number 174·6; iodine number, 103·0. Expressed *black mustard oil* had the specific gravity at 20° C., 0·9143; free acid number, 1·10; saponification number, 175·8; iodine number, 122·3. Both were dark yellow in colour and devoid of marked taste or odour. —*Zeits. für Untersuch. der Nahrungsm.*, through *Pharm. Zeit.*, **48**, 563.

Artificial Civet.

Muehlethaler, of Nyon, Switzerland, has introduced an artificial civet, which although containing only one-third the amount of the natural article, is claimed to exactly reproduce the odour, which is so valuable for blending in perfumery. For perfumery a 5 per cent. solution of the artificial product in 95 per cent. alcohol is recommended. In general aroma value three parts of the artificial product are equivalent to two parts of natural civet.—*Seifensieder Zeit.*, **30**, 363.

Bacterium Fragi.

This name has been given by M. Eicholz to an organism which he has succeeded in isolating from milk which had spontaneously developed a flavour of strawberries. It measures $\frac{2}{1000}$ of a millimetre, exhibits lively movements, and to different culture media (except the potato) it communicates a taste of strawberries. It propagates more readily on certain media, especially on sugar of milk or gelatin. It produces peptonisation of the albuminoids of milk. The aroma disengaged during the culture is strongest between 14° and 18° C.; a low temperature, such as 3° to 4° C. retards completely, or nearly so, the development of the bacillus, and a temperature of 29° C. has the same effect. A temperature of 75° C. continued for ten minutes destroys the microbe. The author is of opinion that the condition of temperature throws some light on the development of the aroma in the strawberry.—*Schweiz. Woch.*, **41**, 295.

Seed Fungus of Darnel.

The poisonous properties of the seed of *Lolium temulentum* have long been known, and the poison has been extracted by ether. The result of recent investigations tends to show that there is a relation between the poisonous properties of the seed and a fungus the hyphæ of which are found in the remains of the nucellus, between the exterior wall of the aleurone layer and the hyaline layer of the grain. Two other species of *Lolium* have been found to yield poisonous seeds, and in both of these the fungus has been detected. The curious fact has been pointed out by E. M. Freeman in a recent number of the 'Philosophical Transactions of the Royal Society,' that the fungus and host plant constitute an interesting case of symbiosis, since grains that do not contain it often appear incompletely developed, and the germination of the infected seeds is excellent. Spore forms of the fungus have hitherto escaped observation, and it appears that the fungus can live for a considerable time without forming spores, passing from plant to embryo through succeeding generations by the hyphæ penetrating the end of the aleurone layer and hence coming into direct contact with the embryo.—*Gard. Chron.*, **33**, 306.

New Method of Tannin Determination.

P. Feldmann modifies the Neubauer-Loewenthal method by substituting a standard solution of chlorinated lime for the oxidising agent, instead of potassium permanganate. The author has directed his attention particularly to the determination of tannin in wine. Since the hypochlorite solution is without action on alcohol, glycerin, sugar, and other organic bodies, the wine may be treated direct, without previous distillation. Ten C.c. of wine is diluted with water to 190 C.c., 2 C.c. of indigo solution, 5 per 1,000, and 2 C.c. of 20 per cent. sulphuric acid are added, and the mixture titrated with the standard hypochlorite solution, which is prepared by treating 12·5 Gm. of commercial chlorinated lime with water, and making up the volume to 1 litre. Another 10 C.c. of the wine is meanwhile heated on the water-bath with 30 C.c. of water and 3 Cgm. of animal charcoal. The animal charcoal retains the whole of the tannin. The mixture is filtered, the filter washed with warm water to 200 C.c., and then titrated as before, after adding the acid and indigo, with the hypochlorite solution. The difference in the two titrations gives the amount of hypochlorite used up by the tannin. The hypochlorite solution is then standardised against a solution of pure tannin of known strength; in this manner its equivalent to the tannin in the wine is known. With other substances containing tannin the two determinations are made in a precisely similar manner, but the tannin is removed before the second titration by treating the solution with a few grammes of raw hide powder.—*Pharm. Zeit.*, **48**, 155.

A SCHEME OF REPRESENTATION, BY TERRITORIAL DISTRICTS, ON THE PHARMACEUTICAL COUNCIL.*

BY J. F. TOCHER, F.I.C.

Variation in Numerical Magnitude.

Turning now to the variation in the numerical magnitude of the proposed pharmaceutical districts, while the range is from 600 to 800, the variability in general amounts to only fifty-six. If both variations are expressed in terms of the same magnitude, it is found that the proposed pharmaceutical grouping has a degree of precision four and a-half times greater than the Parliamentary grouping. If the mean value of each was 100, instead of 11,000 and 694 respectively, the variation in the numerical magnitude of a Parliamentary constituency would be thirty-seven, and that of a pharmaceutical district, eight, which means that while the average of both is the same, Parliamentary constituencies are spread out four and a-half times more among smaller and larger groups of voters than the proposed districts. The degree of concentration round the figure selected as the size of a constituency is, therefore, the true estimate of a proper distribution of seats, and in our case a theoretically correct distribution would exist if every district had 694 chemists and 266 members. It is obviously impracticable to have this, but we must try to approach as nearly as possible to these figures. It may be interesting to know that if a redistribution of seats were effected in Parliament with the same precision as is here proposed for pharmaceutical purposes, the constituencies would number almost entirely 10,000, 11,000, or 12,000 voters, and no constituency would number less than 8,000 or more than 14,000. So far, the distribution of seats has been discussed on the numerical strength of the chemists—the possible electorate in each district; but it would be well to indicate briefly how the representation works out with respect to membership—the actual electorate. Each name in the lists given in the last four successive Calendars was treated with respect to the county in which the member resided, precisely in the same way as the Register was treated for chemists, and this necessitated the re-arranging of almost 24,000 names. The number of chemists in business in Scotland were also ascertained through the kind and prompt action of the Scotch Divisional Secretaries in replying to enquiries addressed to them on the point. In cordially thanking every Divisional Secretary in Scotland for so kindly obliging the author, he wishes to explain that the figures are not given here, because distribution on such a basis would not be a suitable one. The results, otherwise interesting, can be published at some future time. The total membership on this basis amounts to 5,809, of which 5,591 are known to be resident in Great Britain, while 218 were either abroad or residence was not specified. The first figure represents 37·4 per cent. of registered chemists, and the latter figure 38·3. Of the 5,809 members in Great Britain, 4,764 live in England, 603 in Scotland, and 224 in Wales. In the Metropolis there are 1,104 members, or 19·7 of the whole membership. In 1842, at the end of the first year of the existence of the Society, the membership (excluding associates) amounted to 1,640, of whom 411 were resident in London, or 25 per cent. of the then membership.

Membership of the Society.

The membership of the Society in 1903 is only three and a-half times greater than it was in 1842. Perhaps it is considered undesirable to have a large membership. It has been stated somewhere within the ranks that we should have only the best elements within the Society—the 15,000 are not wanted. It is not clear why the humbler elements should not be welcomed within our ranks. If every chemist were a member, the Society would have disciplinary powers over the whole body of chemists, while the finances of the Society would be improved, and any opinion expressed by the Society as a body would be more representative and have more weight. A select Pharmaceutical Society, forsooth! The Pharmaceutical Society does not exist for the select or the elect, but for all—for the betterment of pharmacy within Great Britain. If you look for a moment at the table (No. II.) and the membership map (No. 1, page 301), it will be seen that we are very far from realising a large membership at present. As already stated, the proportion of members who are chemists, amounts to 37 per cent., but the figure varies greatly in various districts. It will be seen from the table that in the metropolitan group of districts 47 per cent. of the chemists are members, while throughout the Midlands the ratio is 40 per cent. In the extreme districts of England, in Wales, and in Scotland, the ratio falls to about 30-35 per cent. It must be remembered that these are mean values over the areas or districts in question, and that parts in each district are higher or lower than the figures given. The average figure is given, because it shows the membership with respect to chemists in each proposed pharmaceutical constituency. The actual membership in each county and district is given in the table, and shows a range of variation for districts from 171 to 311. This represents a less degree of concentration round the mean value (266), compared with the chemists distribution; but the variability, on the whole, amounts to forty-two, as compared with fifty-six, with the chemists' basis, and is about three times as precise as Parliamentary distribution. It must be concluded, therefore, that the grouping into districts as here proposed is warranted by the numerical strength of the chemists resident in each district, by the membership, and by the general population in each district. The following table shows how far each district is represented by the present Council:—

Table III.

District.	Seats—Council.	Seats Filled by Present Council.	Present Council.
I.-V.	5	8	Mr. C. B. Allen Mr. M. Carteighe Mr. A. Cooper Mr. W. S. Glyn-Jones Mr. J. F. Harrington Mr. W. Hills Mr. R. A. Robinson Mr. A. C. Wootton
VI. Southern	1	1	Mr. S. R. Atkins
VII. Southwest	1	1	Mr. C. J. Park
VIII. Severn	1	1	Mr. W. G. Cross
IX. Midland	1	1	Mr. A. Southall
X. South Midland	1	0	—
XI. Fen	1	1	Mr. O. Corder
XII. North Midland	1	0	—
XIII.-XIV. Yorkshire	2	1	Mr. G. T. W. Newsholme
XV.-XVI. Lancashire	2	4	Mr. R. L. Gifford Mr. C. Symes Mr. J. Taylor Mr. J. R. Young
XVII. Tyne	1	1	Mr. J. Harrison
XVIII. Welsh	1	0	—
XIX. Scottish W.	1	1	Mr. W. L. Currie
XX. Scottish E.	1	1	Mr. D. Storrar
XXI. Scottish N.	1	0	—

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* Read before the Federation of Local Pharmaceutical Associations, and concluded from page 273.

A scrutiny of this table shows that London and Lancashire are both over-represented, the Metropolis having three more and Lancashire two more than a numerical distribution would grant them. Yorkshire wants one more representative, while the Tenth (South Midland), Twelfth (North Midland), Eighteenth (Welsh), and Twenty-first (Scottish, Northern) Districts are entirely unrepresented.

How to Effect the Change.

If we postulate a disposition on the part of the Council and members of the Society generally in favour of representation by districts instead of the present method, the question arises as to how the change should be effected. Will it be necessary to obtain powers from Parliament, or can we effect the change by bye-law ourselves? If the matter is considered of sufficient importance for discussion by the Council, then, with the aid of our legal advisers, that body must judge as to procedure. No harm, however, can be done by examining the provisions of the Charter and the Acts of Parliament with a view to forming an individual opinion on the point. The Charter provides for the election of Council as follows:—(Paragraphs 7, 8, 9) "And we do further will, grant, and declare, that the members of the said Society shall and may, on the third Tuesday of the month of May, ——, assemble at the then last or usual place of meeting of the said Society, and proceed by method of ballot to nominate and appoint the members of the Council in manner hereinafter provided, and five auditors of the accounts of the said Society." The next clause provides that two-thirds of the Council go out annually, but this was superseded in 1898 by Section 4 of the Pharmacy Acts Amendment Act, 1898, which provides that seven members who have been longest in office go out annually, while Section 5 provides that at the election all or any of the votes may be given either personally or by voting papers, in a form to be defined in the Bye-laws of the said Society, or in a form to the like effect. There does not seem, therefore, either in the Charter or in the Pharmacy Acts any clause or part of clause which would exclude the election of the Council by separate districts so long as the seven members who have been longest in office retire at the proper time. The only alteration in the Bye-laws which seem necessary would require to be made in one or two clauses of Section V. The following appears to the writer, after applying his mind—professedly a non-legal one—to the subject, to be a suitable amendment of Section V., the words in italics indicating where the Bye-law has been added to or altered, to suit the proposed change:—

Section V.

Election of Council and Auditors.

1. Seven members of Council shall go out of office in every year, and the vacancies shall be filled by election, the retiring members not being ineligible for re-election if duly nominated for that purpose. The seven members who so go out of office shall be the members of the Council who have been longest in office without re-election.

2. The retiring members of the Council shall be ascertained by and recorded of the minutes of the Council at the monthly meeting held in February of every year.

3. All members except honorary and corresponding members are entitled to vote for the election of auditors. Any life member or any member who has paid his subscription for the current year desirous of nominating any other life member or member who has paid his subscription for the current year for election as an auditor shall, on or before March 18 in every year, give a notice signed by him to the Secretary, with the name and address of the nominee. The Secretary shall, on or before March 20 then instant, address and send by post to each nominee a notice of his having been nominated, and inquiring whether he will accept office if elected, and in default of a written reply from such nominee being received on or before March 31 then instant, declaring his readiness to accept office if elected, such nominee shall not be deemed eligible or willing to be elected.

4. *For the purposes of the election of Council there shall be the following twenty-one districts, corresponding to the twenty-one seats on the Council:—*

No. and Name of Pharmaceutical District.	Names of Counties in each District.	No. of Counties.	No. of Parliamentary Divisions.
I.-V. Metropolitan	London, Middlesex, Hertford, Essex, Surrey, and Kent	6	102 (about 20 each)
VI. Southern	Wiltshire, Hampshire, and Sussex	3	27
VII. South-Western	Cornwall, Devon, Somerset, and Dorset	4	34
VIII. Severn	Shropshire, Hereford, Worcester, Monmouth, and Gloucester	5	31
IX. Midland	Stafford and Warwick	2	31
X. South Midland	Leicester, Rutland, Northampton, Oxford, Berkshire, Buckingham, Bedford, Huntingdon, and Cambridge	9	35
XI. Fen	Lincoln, Norfolk, and Suffolk	3	23
XII. North Midland	Cheshire, Derby, and Nottingham	3	29
XIII.-XIV. Yorkshire	Yorkshire	1	53
XV.-XVI. Lancashire	Lancashire	1	57
XVII. Tyne	Northumberland, Cumberland, Westmoreland, and Durham	4	32
XVIII. Wales	Anglesey, Brecknock, Carnarvon, Carmarthen, Cardigan, Denbigh, Flint, Glamorgan, Montgomery, Merioneth, Pembroke, and Radnor	12	30
XIX. Scottish-Western	Argyll, Dumbarton, Renfrew, Bute, Ayr, Wigton, Kirkcudbright, Dumfries, Lanark, and Stirling	10	31
XX. Scottish-Eastern	Fife, Clackmannan and Kinross, Linlithgow, Edinburgh, Peebles, Selkirk, Roxburgh, Berwick, and Haddington	10	17
XXI. Scottish Northern.	Caithness, Sutherland, Ross and Cromarty, Inverness, Nairn, Elgin, Banff, Aberdeen, Kincardine, Forfar, Perth, Orkney and Shetland	14	22

Every member of the Society (except an honorary or a corresponding member) is entitled to vote for the election of *one member of Council, and one only—namely, that for the pharmaceutical district in which the member of the Society resides, as shown by the calendar of the Society for the year then current.* Any life member or any member who has paid his subscription for the current year desirous of nominating any other life member or member who has paid his subscription for the current year for election *as a member of Council for the district in which the nominating member resides (such residence or address being that given in the calendar for the year then current)* shall, on or before March 18 of every year, give a notice signed by him to the Secretary with the name and address of the nominee. *No member of the Society shall have the power to nominate more than one person as a member of Council, and no member of the Society shall have the power to nominate any person as a member for any district other than his own, as indicated by his address in the calendar for the year then current.* The Secretary shall, on or before March 20 then instant, address and send by post to each nominee a notice of his having been nominated, *stating the district for which he has been nominated,* and inquiring whether he will accept office if elected, and, in default of a written reply from such nominee being received on or before March 31 then instant, declaring his readiness to accept office if elected, such nominee shall not be deemed eligible or willing to be elected.

5. The Council shall at its monthly meeting, held in April of every year, prepare a list of all members nominated for elec-

tion and willing to be elected members of the Council and auditors for the ensuing year; and in default of the nomination of a sufficient number of members willing to accept office, the Council shall nominate as many as may be required to form a complete list of members willing to fill all the *district* vacancies in the Council, and a complete list of five auditors. No nominations shall be received or made after March 18, except such as may be made by the Council, in the manner and under the circumstances aforesaid at the monthly meeting in April.

6. The Secretary shall send by post to every member qualified to vote, not less than ten days prior to the meeting at which members of the Council and auditors are to be elected, a voting paper for such elections. The names, addresses, *and districts* of the members willing to serve if elected shall appear in such voting papers.

7. At all elections of members of the Council and auditors, votes shall be given by ballot, either by personal delivery of the same voting papers at the annual general meeting, or by the said voting papers being transmitted, under cover, by the member, to the Secretary, so that the same shall be received by him not later than twelve o'clock noon on the day of the annual general meeting, and the voting papers shall be as near as conveniently may be in the following form:—

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN,
BLOOMSBURY SQUARE, LONDON.
VOTING PAPER.
For the election of *one* Member of the Council *for the District of*

*..
....
....
....
....

The name to which an asterisk is prefixed is that of the retiring Member of the present Council.

INSTRUCTIONS FOR VOTING.

Every member voting must erase the names of all the Members for whom he does not intend to vote. If more than *one name* be left, the Voting Paper will be void.

The Voting Paper must be transmitted, under cover, by the Member, to the Secretary, so that the same shall be received by him not later than twelve o'clock noon on the day of the Annual General Meeting, or delivered by the Member personally at the Annual General Meeting.

The Member voting under cover must write his name and address on the outside of the cover, or the Voting Paper will be void.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN,
BLOOMSBURY SQUARE, LONDON.
VOTING PAPER.
For the election of Five Auditors.

1 ....
2 ....
3 ....
4 ....
5 ....
6 ....
7 ....

INSTRUCTIONS FOR VOTING.

Every Member voting must erase the names of all the Members for whom he does not intend to vote. If more than five names be left, the Voting Paper will be void.

The Voting Paper must be transmitted, under cover, by the Member to the Secretary, so that the same shall be received by him not later than twelve o'clock noon on the day of the Annual General Meeting, or delivered by the Member personally at the Annual General Meeting.

The Member voting under cover must write his name and address *and district* on the outside of the cover, or the Voting Paper will be void.

Form of Address, etc., on Cover.
VOTING PAPER.

Member's Signature ....
Member's Address ....
Member's District ....

To the Secretary of the Pharmaceutical Society, Bloomsbury Square, London.

The Voting Paper must be returned to the Secretary, so that the same may be received by him on or before the day of May, 19 , or be delivered by the Member personally at the Annual General Meeting.

8. Before the votes are examined, the members constituting the annual general meeting shall appoint from amongst themselves five or more scrutineers, of whom five shall form a quorum.

9. The voting papers to be delivered personally shall be received at the general meeting, and the voting papers duly transmitted under cover to the Secretary shall be opened by or in the presence of the scrutineers.

10. The scrutineers shall ascertain the number of votes given for each member nominated for election, and shall make to the chairman of the meeting a return, signed by them, or five of them, of the names of the members nominated for election, and the said return shall disclose the number of votes given for each member named therein.

11. The chairman of the meeting shall declare the result of every election; and, in cases where there shall have been a poll, shall declare the election to have fallen on the members who, according to the return of the scrutineers contemplated by the last-preceding bye-law, shall appear to have a majority, and, in the case of an equality of votes *in any district*, the chairman of the meeting shall have a second or casting vote.

12. The chairman, at any meeting for the election of members of the Council or auditors, shall have the power of adjourning such meeting from time to time, with a view to the reception of the report of the scrutineers, but no such adjournment shall extend beyond a period of four days.

Parliamentary Divisions in Each Proposed Pharmaceutical District.

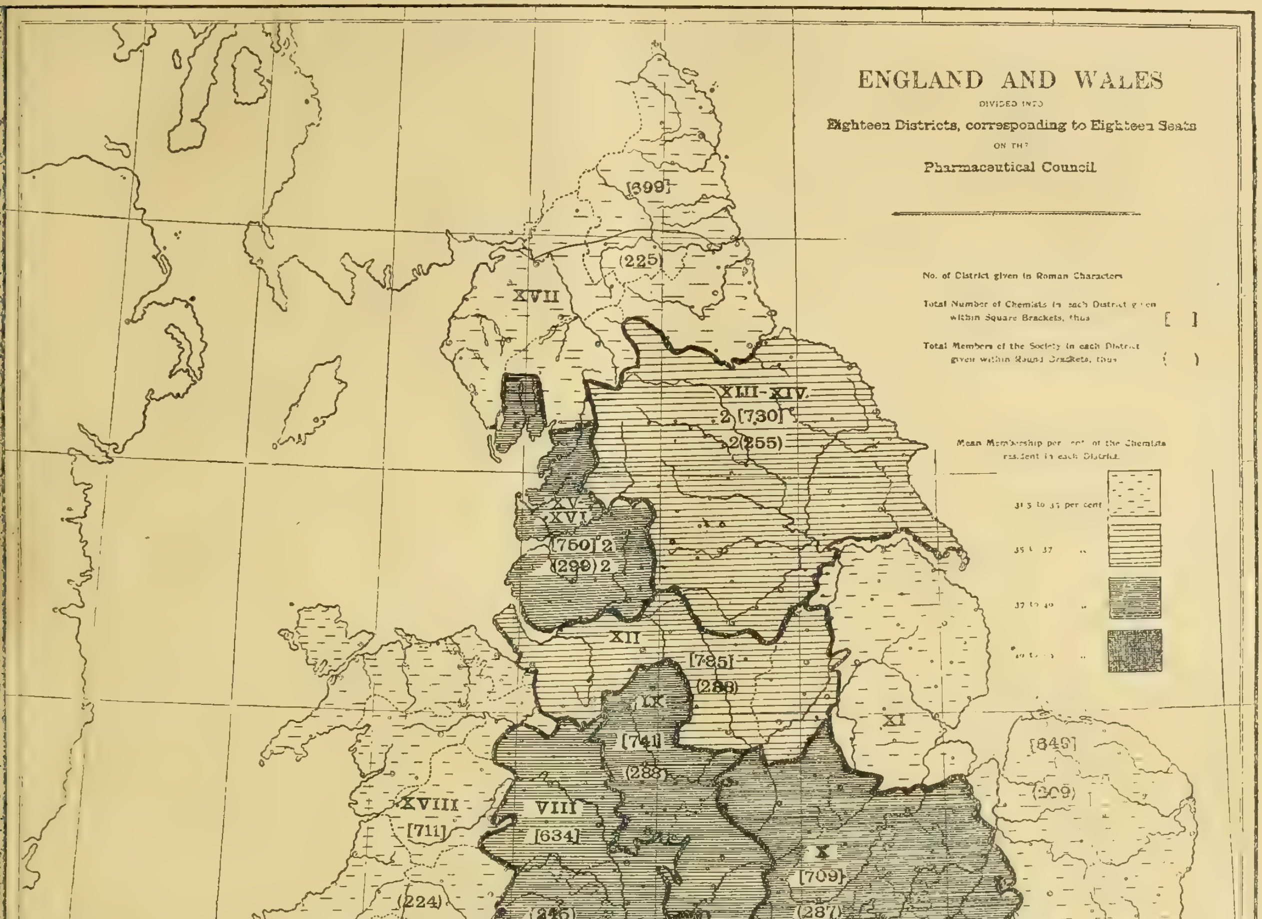
It will be seen from the foregoing suggested amendment to the bye-law that the method of division of the country is left open—the Council may adopt division by counties, or by Parliamentary constituencies. London and home counties constitute five districts, and could easily be divided, using Parliamentary constituencies. All that requires to be done is simply to enumerate the membership in each Parliamentary constituency, and make five comparatively equal groups. In the same way Yorkshire and Lancashire would have each two groups of Parliamentary constituencies.

As Divisional Secretaries are appointed in almost every Parliamentary division in Great Britain, the following table (Table IV.) will be found useful as indicating the district each Parliamentary division falls into:—

TABLE IV.

Number and Names of Parliamentary Divisions within each proposed Pharmaceutical District.

Name and No. of District.	Names of Counties in each District.	Names of Parliamentary Divisions in each District.
I.-V. — London and Home Counties	London	Bethnal Green N.E. and S.W., Bow, Bromley, Brixton, Dulwich, Clerkenwell, Finsbury East, Hackney C., N., and S., Hammersmith, Hampstead, Holborn, Islington E., N., S., and W., Kennington, Lambeth, Kensington N. and S., Lambeth N., Lewisham, Limehouse, London City, Marylebone, E. and W. Mile-end, Newington W., Norwood-Lambeth, Paddington N. and S., Peckham, Poplar, St. George, St. Pancras E., N., S., and W., Stepney, Strand, Walworth, Wandsworth, Whitechapel, Camberwell, N.
	Middlesex	Brentford, Chelsea, Ealing, Enfield, Tottenham, Haggerston, Harrow, Hornsey, Hoxton, Uxbridge, Westminster.
	Hertford......	Hertford, Hitchin, St. Albans, Watford.
	Essex	Chelmsford, Colchester, West Ham (N. and S.), Epping, Tilbury, Harwich, Maldon, Romford, Saffron Walden, Walthamstow.
	Surrey........	Chertsey, Clapham, Croydon, Battersea, Epsom, Guildford, Wimbledon, Kingston, Reigate, Rotherhithe, Southwark W., Bermondsey.
	Kent..........	Ashford, Canterbury, Chatham, Dartford, Deptford, Dover, Faversham, Gravesend, Greenwich, Hythe, Maidstone, Medway, Rochester, St. Augustine's, Sevenoaks, Isle of Thanet, Tonbridge, Woolwich. (London University 1.) **Total 103.**


ENGLAND AND WALES
DIVIDED INTO
Eighteen Districts, corresponding to Eighteen Seats
ON THE
Pharmaceutical Council
No. of District given in Roman Characters
Total Number of Chemists in each District given within Square Brackets, thus [ ]
Total Members of the Society in each District given within Round Brackets, thus ( )
Mean Membership per cent of the Chemists resident in each District
31.5 to 35 per cent
35 to 37 ..
37 to 40 ..
40 to ..
[699]
(225)
XVII
XIII-XIV.
2 [730]
2 (255)
XV-XVI.
[750] 2
(299) 2
XII
[785]
(288)
IX
[741]
(288)
XI
[849]
(309)
XVIII
[711]
(224)
VIII
[634]
(245)
X
[709]
(287)
I-V.
5 [658 each]
5 (312 each)
VI
[741]
(263)
VII
[812]
(294)

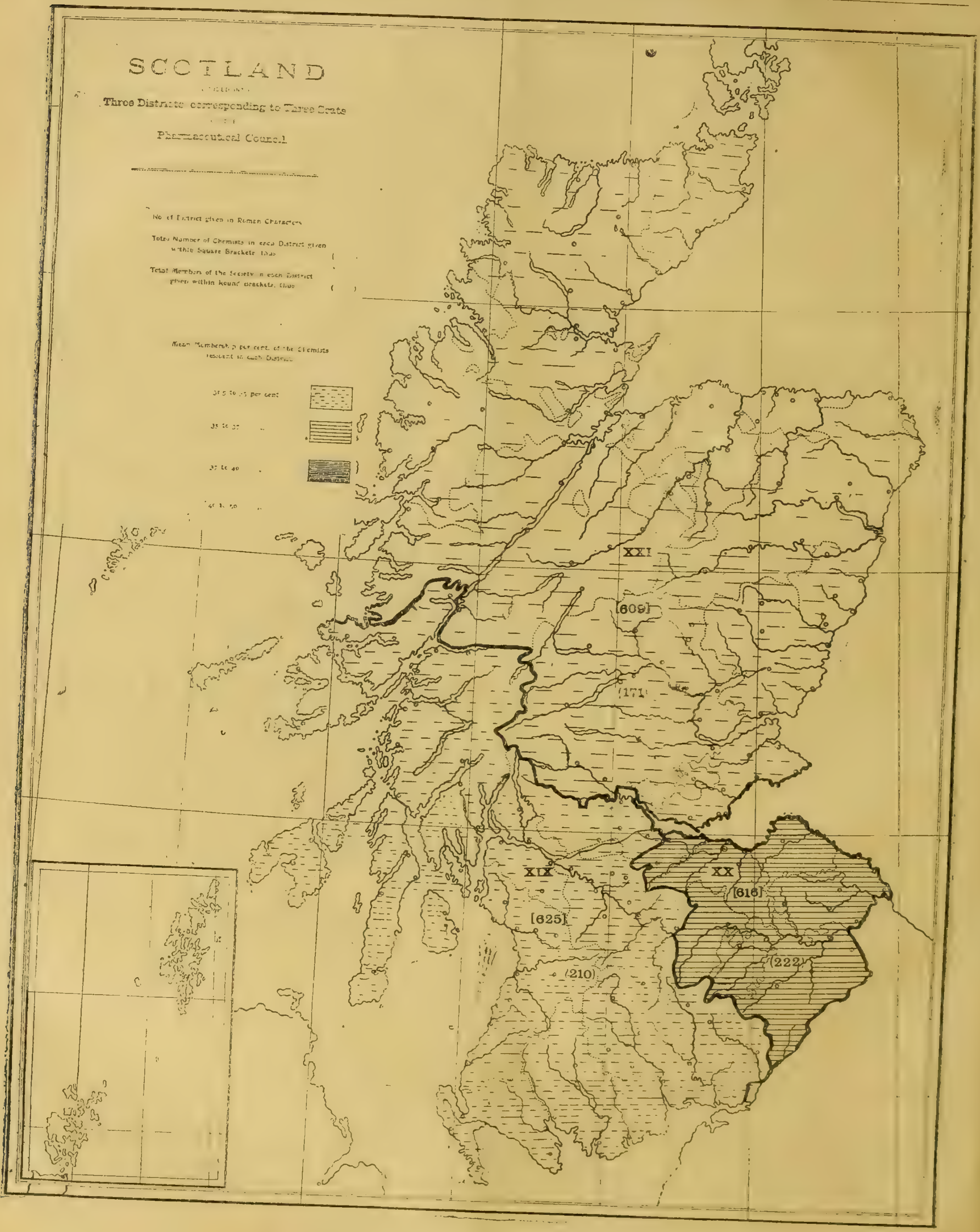

SCOTLAND
Three Districts corresponding to Three Seats
Pharmaceutical Council
No. of District given in Roman Characters
Total Number of Chemists in each District given within Square Brackets thus [ ]
Total Members of the Society in each District given within Round Brackets, thus ( )
Mean Membership per cent. of the Chemists resident in each District
31·5 to 35 per cent
35 to 37
37 to 40
40 to 50
XXI
[609]
(171)
XIX
[625]
(210)
XX
[616]
(222)

Table IV.—*continued.*

Name and No. of District.	Names of Counties in each District.	Names of Parliamentary Divisions in each District.
VI.	Wiltshire	Chippenham, Cricklade, Devizes, Salisbury, Westbury, Wilton.
	Hampshire	Andover, Basingstoke, Christchurch, Fairham, New Forest, Petersfield, Portsmouth (2), Southampton (2), Isle of Wight, Winchester.
	Sussex	Brighton (2), Chichester, E. Grinstead, Eastbourne, Hastings, Horsham, Lewes, Rye.
		Total 27.
VII.	Cornwall	Bodmin, Camborne, Launceston, Penryn and Falmouth, St. Austell, St. Ives, Truro.
	Devon	Ashburton, Barnstaple, Devonport (2), Exeter, Honiton, Plymouth (2), South Molton, Tavistock, Tiverton, Torquay, Totnes.
	Somerset	Bath (2), Bridgwater, Frome, Somerset E. and N., Yeovil, Taunton, Wellington, Wells.
	Dorset	Poole, Shaftesbury, Dorchester, Bridport.
		Total 34.
VIII.	Shropshire	Ludlow, Newport, Oswestry, Shrewsbury, Wellington.
	Hereford	Ross, Hereford, Leominster.
	Worcester	Bewdley, Droitwich, Dudley, Evesham, Kidderminster, Worcester, and Worcester E. and N.
	Gloucester	Bristol E., N., S., and W. (partly Somerset), Cheltenham, Cirencester, Forest of Dean, Gloucester, Stroud, Tewkesbury, Thornbury.
	Monmouth	Monmouth District, Mon. N., S., and W.
		Total 31.
IX.	Stafford	Burton, Handsworth, Hanley, Kingswinford, Leek, Lichfield, Newcastle-under-Lyme, Stafford N.W. and W., Stoke-on-Trent, Walsall, Wednesbury, West Bromwich, Wolverhampton E., S., and W.
	Warwick	Aston, Birmingham S., C., N., W., and E., Bordesley, Coventry, Edgbaston, Nuneaton, Rugby, Stratford-on-Avon, Tamworth, Warwick and Leamington.
		Total 31.
X.	Leicester	Bosworth, Harborough, Leicester (2), Loughborough, Melton.
	Rutland	Rutlandshire.
	Northampton	Northampton (2), Wellingborough, Northampton Mid, N. and S., Peterborough.
	Oxford	Banbury, Henley, Oxford, Woodstock.
	Buckingham	Aylesbury, Buckingham, Wycombe.
	Berkshire	Abingdon, Newbury, Windsor, Wokingham, Reading.
	Bedford	Bedford, Biggleswade, Luton.
	Huntingdon	Huntingdon, Ramsey.
	Cambridge	Cambridge, Chesterton, Newmarket, Wisbech. Oxford University (2), Cambridge University (2).
		Total 39.
XI.	Lincoln	Boston, Brigg, Gainsborough, Grantham, Great Grimsby, Horncastle, Lincoln, Louth, Sleaford, Spalding, Stamford.
	Norfolk	Dereham, Aylsham, Freebridge, Diss, Thetford, King's Lynn, Walsham, Norwich, G. Yarmouth.
XI.—*continued.*	Suffolk	Bury St. Edmunds, Eye, Lowestoft, Stowmarket, Ipswich (2), Sudbury, Woodbridge.
		Total 29.
XII.	Cheshire	Altrincham, Birkenhead, Chester, Crewe, Eddisbury, Hyde, Knutsford, Macclesfield, Northwich, Stalybridge, Stockport, (2), Wirral.
	Derby	Derby (2), Chesterfield, Belper, Eckinton, Repton, Wirksworth, Highpeak, Ilkeston.
	Nottingham	Bassetlaw, Mansfield, Nottingham E., S., and W., Newark, Rushcliffe.
		Total 29.
XIII.-XIV.	Yorkshire	Attercliffe, Sheffield, Barkston Ash, Barnsley, Bradford C., E., and W., Brightside, Buckross, Cleveland, Colne Valley, Derby, Dewsbury, Doncaster, Ecclesall, Elland, Halifax (2), Hallam, Sheffield, Hallamsh., Holderness, Holmfirth, Howdenshire, Huddersfield, Hull C., E., W., Keighley, Leeds C., N., S., W. and E., Middlesbrough, Morley, Normanton, Osgoldcross, Otley, Pontefract, Pudsey, Richmond, Ripon, Rotherham, Scarborough, Sheffield C., Shipley, Skipton, Sowerby, Spen Valley, Thirsk and Malton, Wakefield, Whitby, York (2).
		Total 53.
V.-XVI.	Lancashire	Abercromby Liverpool, Accrington, Ashton-under-Lyne, Barrow, Blackburn (2), Blackpool, Bolton (2), Bootle, Burnley, Bury, Chorley, Clitheroe, Darwen, Eccles, Everton, Liverpool, Exchange Liverpool, Gorton, Heywood, Ince, Kirkdale, Liverpool, Lancaster, Leigh, Manchester E., N., N.E., N.W., S., and S.W., Middleton, Newton, N. Lonsdale, Ormskirk, Preston (2), Prestwick, Radcliffe-cum-Farnworth, Rochdale, Rossendale, St. Helens, Salford N., S., and W., Scotland, Liverpool, Southport, Stretford, Toxteth, E. Liverpool, Toxteth W., Walton, Warrington, West Derby, West Houghton, Widnes, Wigan, Oldham (2).
		Total 57.
XVII. Tyne District	Northumberland	Berwick, Morpeth, Newcastle-on-Tyne, (2), Tyneside, Wansbeck, Tynemouth, Hexham.
	Cumberland	Carlisle, Cockermouth, Egremont, Penrith, Eskdale, Whitehaven.
	Westmoreland	Appleby, Kendal.
	Durham	Barnard Castle, Bishop Auckland, Chester-le-Street, Durham S.E., Darlington, Durham, Brancepeth, Lanchester, Gateshead, Hartlepool, Houghton-le-Spring, Jarrow, S. Shields, Stockton-on-Tees, Sunderland.
		Total 32.

Rights of Membership to Every Chemist and Druggist.

It will be seen that so long as the Act of 1898 remains unaltered, there can be no such thing as a "General Election" of pharmaceutical councillors, the provision being that seven must retire annually. There does not appear to be any special hardship in this. But while there could be no general election, the election would be general over a very large area every year. Let us now suppose for the moment that the proposed new bye-law has been adopted by the Society and has received the sanction of the Privy Council. The Council would allocate a territorial district to each sitting member, and this, by-the-way, may have to be provided for in the bye-law. The only difficulty confronting the Council would be how to fill the unrepresented districts. Perhaps it could be carried out in this way. Mr. Gifford, as the Lancashire member nearest to the Yorkshire border, could be given the second division of Yorkshire; Mr. Young, of Warrington, another Lancashire member, who is just on the Cheshire border, could be adopted as the North Midland representative; Mr. Glyn-Jones might appropriately take Wales, while another London member might accept the South Midland district. But who—he must also be a London member—would be long-suffering enough to take the Scottish Northern District, and be fired out at the first election under the new order of things? If the proposed change cannot be effected by bye-law, we must just add this reform to the list which we have begged Parliament to take notice of from time to time during the past twenty years and more. A Bill to effect the change should be loaded with no other contentious matter from the public point of view. One other provision should, in the writer's opinion, be contained in the Bill, and that refers to membership. It is highly desirable to secure an amendment of our Acts providing for the annual registration, with the rights of membership, of every person who in future qualifies for registration as a chemist and druggist. This is, without question, the first necessary step towards universal membership. The compulsory enrolment of persons, already on the Register, as members, is not such an easy matter. It might, however, be pointed out that, as a *quid pro quo*, registered persons in business indisposed to secure the benefits of full membership, could be enrolled as a temporary class of voting members in consideration of the payment of the small fee for compulsory registration of their shops contemplated under the present Bill. This would secure for each chemist in business the title of member, with the right of voting, but without being entitled to the weekly issue of the official Journal, unless he applied to be transferred to the permanent class. This temporary class would die out, as annual registration, with the rights of membership, would be compulsory on all future entrants. If this membership scheme were realised, the Pharmaceutical Society would have, instead of 6,000, 15,000 members, and the possible electorate in each pharmaceutical district would become the actual electorate, charging the Society with a greater vitality than ever it had in the past.

If Membership were Compulsory.

We could then say the craft is the Society and the Society is the craft. At the same time we must be on our guard, and not expect too much. For a Council of district representatives does not necessarily mean a more efficient Council, neither does a Society, where the terms "chemist" and "member" are synonymous terms, mean a more progressive Society. But it would mean a Council constituted on a basis satisfying both sentiment and reason, and both ought to be taken into account in the administration of affairs. Provincial sentiment would be satisfied without any sacrifice whatever. The dictates of reason will have been responded to, for the representation would be local and unitary, the best understood form. It would, therefore, be a Council more in touch with its constituents and more truly representative, while, with compulsory membership, the entire pharmaceutical craft would still more have itself to blame if the policy pursued by the Council was not in consonance with its views. In conclusion, it is perfectly clear to those who interest themselves, and who use their power of observation, that the Pharmaceutical Council has much arduous work to perform, and performs it well. It has been, as it should be, in the van of progress, but it is not called upon to thrust reforms upon an unconverted electorate. We look to it to administer the Pharmacy Acts for us, and to guide us; and when, as the result of patient teaching, it receives a mandate, to act upon it. If these proposals evoke no enthusiasm among the craft, they certainly will not attain the dignity of being even mentioned at the Council; but if they seem practicable and reasonable to practical and business men, let us, after due deliberation, act upon them and supply the mandate. Then the members of Council, as our representatives, will find the ways and means of effecting the change. When the change is effected, the Council will be still more fit to discharge the duties imposed upon it by the State—that of administering the pharmacy laws in the public interest and safety.

SOME CURIOUS OILS.[*]

BY LYMAN F. KEBLER AND DR. GEO. B. PANCOAST.

In the drug trade demands come from time to time for curious oils, some of which are exceedingly interesting. When such calls come many druggists are very loath to see an inquiring customer depart without having his wants supplied, knowing full well that some one will comply with his request by giving him something, which, as a rule, is not true to name. Many of these oils can be supplied in some localities, but in others it is practically impossible to secure them. The use of the oils is chiefly prompted by their traditional value for rheumatism, and this in a measure explains why some orders are filled as indicated below. For several years we have been collecting data from various sources, and below give our results to date:—

Adder Oil.—This is generally filled by mixing lard oil, 3 parts, skunk oil, 1 part.

Angle-worm Oil.—One formula reads as follows: "Linseed oil, 19 parts; animal oil, 1 part." Another formula for Oleum Lumbricorum directs that the angle-worm be smothered in wine, then digested in 2 parts of olive oil and expressed. According to another formula, angle-worms are sealed up in a bottle, the latter enclosed in bread dough, and then the whole baked in an oven. The decomposition fluid thus obtained from the worms is poured off. Hager's formula consists of rape seed oil, 25 parts, and oil of birch tar, 1 part. According to another formula, 1 part of worms is cut up in 1 part of sherry wine, then infused in 4 parts of olive oil. Angle-worm oil is sometimes supplied by slightly colouring olive oil with oil of amber.

Ant Oil or Oleum Formicum.—Digest 4 parts of ants in 16 parts of olive oil at a gentle heat, and then strain.

Bait Oil or Oil of Rhodium, is used in trapping wild animals, for the purpose of disguising the odour of the person handling the traps, and usually consists of balsam copaiba, 4 parts, salad oil, 1 part, oil of almonds, 5 parts, flavoured with from 5 to 10 drops of oil of rose or rose geranium for each ounce of the mixture.

Bat Oil.—Some form of bird oil is usually supplied, such as chicken fat.

Bear's Oil.—This can be obtained in the United States; coming usually from the black bear, but the cinnamon and grizzly bears often furnish some. Efforts should be made to secure a supply of the article during the bear-hunting season. The sample described below was obtained from a Philadelphia restaurant. The chef, for a consideration, saved the bear's fat for a season for one of us (P.). The article can, therefore, be reasonably considered genuine.

Bear's Fat is a pale yellow, semi-opaque, oily liquid at summer heat, but solidifies in cold weather; having a peculiar odour and a bland taste. At 15° C. it has a specific gravity of 0·913, an acid-number equal to 3·93, a saponification number equal to 203·4, an iodine figure of 80·43, and congeals at + 9° C. Bear's fat is credited with the property of strengthening and invigorating the growth of hair. Unfortunately, the scarcity of the article has caused substitution to be resorted to in many cases, such as purified beef marrow, lard, veal fat and almond oil thickened with spermaceti. Barbers frequently use petrolatum and call it bear's grease.

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[*] Read before the American Pharmaceutical Association.

Beaver Fat.—Neatsfoot oil is generally supplied.

Brick Oil.—As a rule this oil is not supplied by any one; but is supposed to be made by the following formula: "Quench red-hot bricks in olive oil, break them into small fragments, distil in a retort with gradually increasing heat, and separate the oil from the distillate."

Calendula Oil, like oil of hyoscyamus, cantharides, etc., is usually sold as an infused oil. That is, the drug is macerated in some fixed oil, like olive oil, at a slightly elevated temperature for a given time and the oil expressed and filtered.

Clover Oil consists of an alcoholic solution of indefinite proportions of coumarin, vanillin, heliotropin.

Catfish Oil.—This oil can easily be secured in localities adjacent to the Mississippi river, where large catfish are caught; but in other parts of the United States it is not so readily obtainable. Usually some fish oil is supplied.

Crocodile and Alligator Oils.—Fish oils are usually supplied.

Deer Oil.—This can usually be obtained from some of the restaurants where venison is served; but in general, the oil is not readily obtained.

Dog Oil.—This is a common household remedy, and may be found in many farmers' homes; but has not found its way into the trade channels to any extent.

Eel Oil is not readily procured, and usually some fish oil is supplied.

Fox Oil.—Skunk oil is frequently given; but Dippel's oil, with a little tincture of asafœtida, has also been supplied for this article.

Habacuc Oil.—For this the following mixture is usually put up: Chamomile oil, 1 part; oil of thyme, oil of rue, oil of tansy, each 6 parts; oil of wormwood (fatty), 200 parts.

Hedge Hog Oil.—Lard oil or neatsfoot oil, or mixtures of the two, are usually given.

Lobelia Oil.—A number of preparations are put up under this name. One is the true oil obtained from the lobelia seed by extraction with alcohol, and another is an alcoholic solution of the lobelia plant. Exactly how it is made we have been unable to ascertain.

Mullein Oil.—Several articles under this name are also found. One is an infused oil like calendula; another is said to made by collecting the flowers, placing them in a bottle which is tightly stoppered, and the whole submitted to the action of the sun; and it is said that the oil in time oozes out of the flowers. This we are told is the true oil of mullein.

Mink Oil.—Skunk oil is the article generally supplied.

Mercury Oil.—It is said an oil by this name has been supplied by placing some blue ointment in olive oil and agitating same. This is hardly creditable.

Mermaid's Oil is usually made up by mixing equal parts of cocoanut oil and lard oil, flavouring the same with cod-liver oil.

Ozonated Oil is made by passing oxygen into an oil such as cocoanut, sunflower, cod-liver, etc., until no more will dissolve, then exposing for some time to the direct rays of the sun. Used in phthisis.

Pickerel Oil.—Fish oil is usually supplied.

Porcupine Oil.—Orders are filled like those for hedge hog oil.

Porpoise Oil.—This is a regular article of commerce, and can be obtained at any well regulated oil dealing establishment.

Rabbit Oil.—It is not difficult to obtain this oil, inasmuch as rabbits are frequently very plentiful.

Rat Oil.—We have been unable to find what has been supplied when an order came for this product.

Raccoon Oil.—One of us (K.) has frequently seen this oil in his boyhood days, and it should be readily obtainable in certain farming communities. Lard oil is frequently supplied when raccoon oil is called for.

Rhodium Oil.—See bait oil.

Rattlesnake Oil is obtained from the Crotalus, a reptile peculiar to America, and much dreaded for its deadly venom, although it seldom attacks man unless molested, and its rattle usually gives timely warning of danger. Genuine rattlesnake oil can be obtained from those who make it a business to hunt the rattlers in mountains or marshy parts of the country where the hand of man has not yet devastated the forest or broken the soil for his crops. Twice a year the rattlers quit their haunts and spend from ten days to a fortnight close by the water. The hunter calls this habit their "Spring and Fall swims." They indulge in this custom soon after appearing in the spring, and just before hibernating for the winter. In August the snakes are blind, and necessarily sluggish in their movements. At this time they do not warn the intruder, and are, therefore, more dangerous, inasmuch as they strike without the customary warning or rattle, which if once heard will never be forgotten. During the hot weather the snakes get very thin, and it does not pay to catch them at this time, as the quantity of fat to be obtained is very small. In general, the oil of two dozen snakes is equal to that produced by one skunk. The forest fires kill many of them, and in consequence of this and other factors, they are decreasing in numbers every year, and one or more hunters are bitten every year by these snakes; but curiously enough, they seldom die from the effects of the poison; nevertheless they seldom recover entirely from its effect. Taking all these facts into consideration, it is not surprising that the genuine oil brings good prices; 2.00 dols. an ounce being readily paid. The demand appears to be continually increasing, while the source of supply is becoming exhausted, and in a few years it will no doubt be unobtainable. A quantity of this oil, which we have every reason for believing genuine, gave on analysis the following results: Specific gravity at 15° C., 0·9217; acid number, 3·57; saponification number, 210·9; iodine figure, 105·58.

Skunk Oil is obtained from *Mephitis varians*, one of the weasel family. They are about the size of a common cat, generally black or brownish-black, with white and black stripes along the back, and a white ring around the neck. The skunk is sometimes called a pole-cat, although this name properly belongs to its English cousin (*Putorius fœtidus*), also called foul martin or fitch. To artists the hair of the fitch or the fitchet is well known as that of which their best brushes are made; the long hairs which grow through the lighter coloured fur of the animal being used for this purpose. The American skunk, in common with the pole-cat, depends as a means of defence upon an exceedingly fetid fluid which is discharged with considerable force and some degree of accuracy when attacked, from secretory glands located near the root of the tail. The properly prepared oil is yellowish in colour, odourless, and of a bland taste, with occasionally a sediment of stearin at the bottom of the container. All the oils obtainable in commerce, however, have more or less of the odour peculiar to the animal. A number of samples examined during the past two years, gave the following results:—

Number.	Specific Gravity at 15° C.	Acid Number.	Saponification Number.
1	0·9120	2·85	207·57
2	0·9176	2·54	206·3
3	0·9234	18·9	220·12
4	0·9218	8·8	199
5	0·9166	31·0	206

No. 5 of the above is known to be genuine inasmuch as it was taken by one of us K directly from the animal. The acid number is a little high, which is probably due to a slight decomposition of the animal at the time the fat was removed. No. 3 seems to be of questionable purity.

Stillingia Oil.—An alcoholic extract of the root is at present supplied for this product. The exact manner in which it is made, we are not familiar with.

Stork Oil.—Some bird oil is usually supplied.

Sturgeon Oil.—Fish oil is usually supplied; but we see no reason why this oil cannot be obtained from the caviar factories, if application be made for it there.

Swallow Oil.—Some bird oil is usually supplied.

Sweet Cicily Oil.—Anise oil usually fills the requirement.

Turtle (Green) Oil is obtained from the *Chelonia mydas*, commonly found in the markets, weighing from 700 to 800 lbs., and from 6 to 7 ft. in length. In the proper seasons, the oil can be obtained from those who use these turtles for the tables in large hotels. These people are generally aware of the commercial value of this article, and use every effort to prepare it pure.

Viper Oil.—Usually filled like adder oil.

THE CHEMISTRY OF MILK.

The chemistry of milk has, during the last few years, been subjected to much investigation, both from the chemical and biological side. The results hitherto obtained are sufficient to show that caution must be exercised in forming any conclusion relating to the question. For, just when the matter appears to be in a fair way of settlement, new investigations either extend our knowledge or show that some modification must be made in the prevalent views relating to the milk question. Apart from the purely scientific aspect of the matter, our knowledge of the composition and constitution of milk has an important bearing upon the welfare of the community, since the milk of the cow or other animal is being used more and more as a substitute for mother's milk in the rearing of infants. Various methods of treating cow's milk with a view to approximating its chemical and physical characters to those of mother's milk have been suggested, and each method is claimed by its originator to have solved the problem of providing a perfect substitute for the material intended by nature for the nourishment of the suckling infant. How far were the earliest efforts in this direction from deserving the claims made for them is very evident from the results published on milk investigation within the last few years, and these investigations appear to show the almost insuperable difficulty of imitating simultaneously the chemical, physical, and biological properties of human milk by any artificial treatment of cow's milk. It may be some of the proposed modifications provide a substitute sufficiently successful in most cases, but when viewed from all sides it may be seen that the best is only an approximation to perfection and leaves much to be desired.

In a recent communication to the *Schweiz. Woch. für Chemie und Pharmacie*,* Franz Sidler publishes some results obtained in the examination of samples of various kinds of milk intended for infant-feeding, and gives a useful summary of the present state of knowledge relating to milk. Four varieties were examined—(1) Pasteurised, (2) sterilised, (3) centrifuged (Gärtners), and (4) humanised (Backhaus).

Pasteurised milk is prepared by heating the milk gradually and uniformly to a temperature of 60°-70° C., and maintaining it at this temperature for some time, not exceeding one hour. This treatment is based upon the observation that pathogenic organisms likely to occur in milk, particularly tubercle and typhoid, are destroyed, while the milk is not altered in appearance or taste if the temperature of 70° C. be not exceeded.

Sterilised milk is prepared by heating the milk to a sufficiently high temperature to destroy all organisms present in the fluid. This necessitates raising the temperature of the milk to about 110° C., under steam pressure, and maintaining it at this point for fifteen minutes, but this treatment gives it a yellowish tint, alters its flavour, and considerably modifies the chemical and physical characters of its constituents.

The centrifuged milk of Gärtner is prepared by diluting cow's milk with an equal bulk of water and centrifuging the mixture. The operation is conducted in such a manner that half the volume is obtained containing practically all the cream, while the other half, containing only 0·1-0·2 per cent. of fat is rejected. This Gärtner milk contains, therefore, the same proportion of fat as the original milk, but only half the proportion of the dissolved substances—viz., the proteids, sugar, and salts. A subsidiary advantage of the process is that all impurities such as dirt and hairs, which are denser than the milk, are accumulated in the rejected portion.

The humanised milk of Backhaus is prepared with a view of eliminating the excess of casein in cow's milk, which forms coarse curds difficult to digest. By means of the centrifuge the fat is removed and the fat-free milk subjected to the digestive action of trypsin in presence of sodium bicarbonate for about thirty minutes at 40° C. The undigested casein is then separated by means of rennet, the liquid filtered, and the filtrate heated to 80° C. to inhibit further ferment action. Sufficient cream and casein is then added so that the product contains 3·5 per cent. of fat and 0·5 per cent. of casein, and a further addition of milk-sugar is made so that it shall contain approximately the same as human milk.

The following table by F. Sidler shows the results obtained by the analysis of milks of the foregoing types, compared with human milk.

	Pasteurised Milk.	Sterilised Milk.	Gärtner's Milk.	Humanised Milk (Backhaus).	Human Milk.
Fat	4·06	3·34	3·40	3·32	3·78
Total dry solids	12·74	11·63	8·06	11·46	12·59
Total fat-free solids	8·66	8·29	4·66	7·82	8·81
Sugar	4·71	4·46	2·45	5·86	6·21
Ash	0·71	0·68	0·35	0·55	0·31
Total proteids	3·21	3·16	1·80	1·39	2·29
Casein	2·55	2·82	1·56	0·91	1·03
Albumin and globulin	0·56	0·24	0·13	0·36	1·26
Other nitrogenous substances	0·10	0·10	0·09	0·12	
Ratio of nitrogenous to non-nitrogenous substances	1 : 4·62	1 : 4·05	1 : 6·16	1 : 10·18	1 : 6·83

The figures in the lowest horizontal column for the non-nitrogenous substances (in relation to the nitrogenous) are obtained by taking the sugar + (fat ×2·5) in order to give the fat its food-value in sugar units. The ratios so obtained will be seen to vary widely, except in the case of Gärtner milk, from the ratio occurring in human milk. The Pasteurised milk shows the same composition as raw cow's milk. The percentage of fat in all varieties is about the same as in human milk, but the particles in the latter are much finer than in cow's milk, and the difference is accentuated after sterilisation. The sugar and ash also show marked variation from the human standard. The most marked variation is, however, shown in the relative proportion of casein and albumin+globulin, since in cow's milk the casein preponderates, while in human milk the proportions are approximately equal. Edlefsens has, however, made an interesting observation relative to this important point, and has shown that the proportion varies in woman during the period of lactation. At the third day he found the proportion of casein to other proteids as 67:33, while the total percentage was 2·69. At the 116th day the total proteids had diminished to 0·83 per cent., while the ratio of casein to other proteids had altered to 37:63, or almost the reverse to the proportion at the third day. Meanwhile the fat had increased progressively from 3·2 to 4·1 per cent. and the sugar from 3·59 to 5·95 per cent. during the same period. All this goes to show that the mother's milk is continually altering in composition to suit the needs of the suckling infant—a result which can hardly be obtained by any form of artificial treatment of cow's milk. The larger proportion of casein in cow's milk explains why the curd obtained by the addition of acids or rennet is so much coarser and difficult of digestion than the corresponding product from human milk. In Backhaus milk, although the proportion of albumin approximates more closely to human milk than that of untreated milk, it must not be forgotten that this albumin is not of the same nature, but consists partly of peptones produced by the partial digestion of the casein.

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* *Schweiz. Woch. für Chemie und Pharmacie*, 1903, pp. 205 and 217.

With regard to the bacteria in the milk, Sidler found that several samples of so-called sterilised milk were by no means free from organisms. Pasteurised milk, which will not keep good more than five days at the most, may be expected to contain certain resistent organisms not destroyed at 70° C., but the importance of organisms in fresh milk depends more upon their nature than number.

Sterilised milk is a valuable commodity under conditions when fresh milk cannot be obtained, but the possibility of the formation of toxines in the milk by the residual organisms must not be overlooked. It appears impossible to produce absolutely sterile milk without subjecting the fluid to such treatment as profoundly alters its composition and properties.

The ferments in milk have also been studied within recent years, and the results appear to show that in this direction lie certain very marked differences between the milk of various animals. It is evident that this hitherto unsuspected variation is of great importance in relation to the rearing of infants by cow's milk. The main difference between human and cow's milk appears to be that the former always contains diastase, but never any enzyme of the oxydase class, while in the latter the reverse holds good. Apart from their nature, the enzymes of human milk appear to be more active than those of cow's milk. Spolverini suggests that these differences are due to man being omnivorous, while the cow is herbivorous. A lipase, capable of splitting up fats, occurs in both kinds, but that in human milk is by far the more active.

THE ASSAY OF FERROUS CARBONATE PREPARATIONS.*

BY FRANK X. MOERK.

In recently assaying some samples of pill-mass and pills of ferrous carbonate results were obtained which show that it is impossible to determine accurately the quantity of ferrous carbonate in presence of organic excipients. Some of the results obtained are given in the following table :—

	I*a*.	I*b*.	II.	III.
Pills (293)	0·72 gr.	0·66 gr.	—	0·54 gr.
Pills (517)	0·60 gr.	—	0·644 gr.	0·525 gr.
Pill Mass	35·78 p.c.	—	38·10 p.c.	32·80 p.c

I*a*. Three pills, or about 1 Gm. of the pill-mass, were heated with 10 C.c. diluted sulphuric acid and 50 C.c. distilled water in a current of carbon dioxide to prevent oxidation of the ferrous salt; after complete disintegration resulted, the mixture was cooled and titrated with decinormal potassium bichromate V.S. and results expressed in grains per pill, or per cent. in case of the mass of ferrous carbonate.

I*b*. Carried out as under I*a*, with the exception that about 90 per cent. of the volumetric solution required in I*a* was added at once and then the titration completed by the careful addition of the volumetric solution.

II. *To Determine Total Iron.*—The same qualities as above were boiled for fifteen minutes with 10 C.c. hydrochloric acid and 50 C.c. water; after cooling, 10 C.c. stannous chloride solution (5 per cent.) were added (to reduce ferric to ferrous salt), the excess of stannous chloride oxidised to stannic chloride by the addition of 20 C.c. mercuric chloride solution (5 per cent.) and the mixture titrated with decinormal potassium bichromate V.S.; the results were expressed as above. The results, being higher than in I., were at first interpreted as showing the presence of ferric compounds.

III. To obtain a check on II., the same quantities were carefully ignited in *porcelain* dishes until free from carbon, allowed to cool, and then heated with 10 C.c. hydrochloric acid, with the occasional addition of a few drops of stannous chloride solution, until the ash was perfectly dissolved and a colourless solution produced (a yellow colour indicates ferric salt, which is easily reduced by the addition of stannous chloride); dilute with 50-75 C.c. water, add 10 C.c. mercuric chloride solution (5 per cent.) and titrate with potassium bichromate; calculate results as before.

The results obtained in III., which gives the total iron contents as ferrous carbonate, being the lowest of the several determinations, clearly prove the statement made in the beginning of this paper. Methods I. and II. give too high results, due to the action of the organic matter upon the volumetric reagent. Method III., while giving the quantity of ferrous carbonate originally present, cannot give the amount actually present at the time of the assay, although under no condition could the quantity found in III. be exceeded, as I. and II. would indicate.

Attention is directed to a source of difficulty which may be experienced in titrating ferrous salts with potassium bichromate. In preparing a fresh solution of potassium ferricyanide for use as an indicator, the crystal should be washed several times with small quantities of distilled water until these washings give *only a brownish colour* with a pure ferric salt, before making the solution; this is necessary to remove potassium ferrocyanide, which is produced by exposure of the ferricyanide to light and air.

THE PHARMACOLOGY OF THE SUPRARENAL GLAND.

BY J. C. MC WALTER, M.A., M.D., D.P.H.

Fifty years ago only anatomists knew that a little wedge of fleshy-looking substance, shaped like the cocked hat of a tin soldier, might be found in the mass of fat which surrounds the top of the kidney. Its function was quite unknown until Addison observed that it was almost the only organ invariably affected in a peculiar disease which bronzes its victim like a quadroon, and causes him to wither and waste away.

About a year later that great French physiologist Brown-Séquard concluded an exhaustive examination of the functions of these glands and demonstrated :—(1) That they are essential to life; (2) that they modify or destroy a substance which otherwise transforms itself into a pigment and stains the skin; (3) that when the organs are destroyed or removed this substance collects in the blood, and (4) that removal is rapidly fatal, and injection of the blood of an animal thus treated into a healthy animal leads to symptoms like those of removal.

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* Read at the annual meeting of the Pennsylvania Pharmaceutical Association, June, 1903.

* Communicated to the British Pharmaceutical Conference at Bristol, July, 1903.

Thus it becomes obvious how the skin should become bronzed when these glands were diseased, and not only was the pathology of Addison's disease made manifest, but a possible remedy was indicated.

The conclusions of Brown-Séquard were vigorously disputed; but by another series of experiments he demonstrated their correctness.

All this was interesting, but attracted only the attention of some pioneers in pharmacology, until in 1897, when Kelich found that blanching was produced when a solution or extract of the gland was dropped in the eye, or when placed on granulating surfaces.

Bates further investigated it, and concluded that as a pure astringent in all inflammations, as a hæmostatic, and as a tonic to muscular fibres, no therapeutic agent has yet been employed which can compare with extract of the suprarenal gland.

It was found that when an aqueous solution was injected into the veins of cats there resulted dilatation of the pupils, orbital protrusion and elevation of the eyelids—symptoms which indicate irritation of the ganglion of the sympathetic nerve in the neck. Cyon noticed under the same conditions an enormous rise of blood pressure, proving that the extract was a powerful stimulant to the sympathetic nervous system of the heart and the blood nerves. Finally Oliver and Schafer showed that the rise of blood pressure occurs after the cord has been sectioned high up, and the medulla has been destroyed, thus proving that it is the direct action of the extract on the muscular fibres of the heart and the blood vessels.

The observations of Dr. Auld, who investigated the properties of the gland at the Thames Embankment, go to show: (1) That many red corpuscles are destroyed in the gland; (2) that the medulla is the essential portion, and secretes a specific substance which is detectable in the veins.

Dr. Auld concludes that pyrocatechin is not the active principle, as Stockman and others had asserted, and that reactions point to its alkaloidal nature. More recently Dr. John J. Abel, of the Johns Hopkins University, arrived at the same conclusion, and separated the substance in the form of a benzoate. This basic or active principle of the suprarenal he has further isolated in the form of a bright grey powder, whose percentage composition is expressed by the formula $C_{17}H_{15}NO_4$. It is a fine crystalline powder, known as adrenalin, which is pure, and remains stable when kept dry. It is sparingly soluble in cold water, but readily soluble in acids and alkalies. The salts are very readily soluble in water.

The American solutions of adrenalin which are on the market are familiar to all pharmacists, and are made of the strength 1 in 1,000, but for ordinary use must be diluted with four or five times the volume of sterilised distilled water.

Now these American solutions are very active and scientific preparations, as I have myself experienced, but the question for the Conference is whether the ordinary pharmacist, with no special talent or experience, can prepare an active solution of the essential ingredients of the suprarenal gland. And I think he can.

The method which I have adopted for the preparation of a galenical solution of the adrenal gland is to macerate the fresh gland of a sheep or of a heifer, finely comminuted, with an acidulated solution containing 20 per cent. of glycerin and 20 per cent. alcohol; the resulting liquor is of a pale straw colour, when prepared from the adrenals of the sheep, and of a reddish hue when made from those of the calf. The formula is as follows:—

Fresh adrenals of the sheep (finely chopped)....	5 parts.
Alcohol	1 part.
Acetic Acid	0·1 part.
Glycerin	1 part.
Distilled water	3 parts.

Macerate for seventy-two hours and press through lint. The resulting liquor has an odour suggestive of well-made liquor pepsin, a pleasant taste, and a somewhat thickish consistency. I have used it for the ordinary purposes for which adrenalin solution is employed, notably for affections of the tonsils and of the nose, and so far as clinical experience goes it appears to act admirably, and to be equivalent approximately to the solution of the American makers when diluted to 1 in 2,000. The proportion of acetic acid does not unfit it for ophthalmic work, but I do not wish to claim that for ophthalmological purposes it should supplant the more definite and delicate solution of adrenalin chloride.

It may perhaps be asked why one should bring forward at the Pharmaceutical Conference a method for preparing a product which does not claim to be scientifically superior to those already made on the market, and which, in some points claimed by the makers of those solutions—namely, freedom from extraneous matter—is admittedly inferior. My only apology is that I consider it due to British pharmacy to have a working formula for a fairly reliable preparation, which any pharmacist can prepare. It is also a matter of importance that the investigation of new products should not be left to one or two houses, however eminent, but that every worker in the field of pharmacy should be tempted to add his quota of investigation regarding remedies in vogue.

Suprarenal glands vary surprisingly in size, but should always be obtained from young animals. Those from the sheep have hitherto mostly been used, but it appeared to me that the solution which I prepared from the gland of the heifer was even more effective. They should be procured, if possible, covered with the natural fat, so as to prevent contamination, and any knives used to cut them should be sterilised by heating previous to use. Scrupulous cleanliness as to the hands, bottles used, etc., should also be insisted on. The active principle of the gland is soluble in alkaline or acid solutions, but not in neutral nor strongly alcoholic media. Of course, strongly acid solutions would be quite unsuitable for many of the purposes for which adrenalin solution is used; but if boric acid be employed the solution is tolerated extremely well for rhinological work, and the percentage of glycerin and alcohol given seems to be tolerated better than a simple aqueous solution.

If boric acid be used the quantity required will be:—

Adrenal capsule of the cow	10 parts.
Boric Acid........	1 part.
Glycerin	2 parts.
Distilled Water	6 parts.
Alcohol	2 parts.

Macerate for three days and press; the yield will be about 12 parts.

The solution appears to keep better than the very highly-priced American ones, which are peculiarly prone to decomposition, either from light or extraneous organisms, and, therefore, not always so useful in the consulting-room of the practitioner, who seeks from them immediate aid for a variety of throat and nose cases.

Eumorphol.—Hirschof has given this name to the serum obtained from rabbits and mice which have been kept for a period under the influence of morphine. It is stated that an antitoxin is thus produced which not only furnishes an antidote to opium poisoning, but affords a means of overcoming the morphine habit. So far, neither local nor general secondary symptoms have been observed to follow the use of eumorphol.—*Journ. Pharm. d'Anvers*, **59**, 147.

WEST HAM AND DISTRICT CHEMISTS' ASSOCIATION.

CYCLE EXCURSION.

In connection with the above Association, a cycle-run took place on Thursday, August 13. The party started from the Eagle, Snaresbrook, at 3.30 p.m., after being photographed, and visited Waltham Abbey, Copt Hall, Abridge, where tea was served at the Blue Boar, and home through Woodford. The weather was all that could be desired, and, but for the "punctures," one member's back tyre requiring seven patches, the run was most enjoyable. As so many members will be away in September, it has been decided to abandon the run with cameras on September 10.

TORQUAY CHEMISTS' ASSOCIATION.

FIRST ANNUAL PICNIC.

On Wednesday, August 12, 1903, at this picnic, Mr. Newlyn, President, was accompanied by seventeen members and friends, the party including several ladies. They were driven in a well-horsed coach through Ugbrook Park to Chudleigh, where a halt was made to visit the rock and glen. Bovey Tracey was afterwards visited, where an excellent tea was provided at the Railway Hotel. After tea the party strolled upon the moors, where they were photographed. The journey home, *viâ* Stover, was much enjoyed, and everyone voted the outing an unqualified success. The Association is to be congratulated on the social enjoyment provided for the chemists of Torquay and district.

HULL CHEMISTS' BUYING ASSOCIATION.

ORDINARY MEETING.

Wednesday, August 12, 1903, at the Imperial Hotel, Hull, Mr. E. H. Earle in the chair. The other members present included Messrs. Bennett, Chapman, H. Brown, Walton, Gabbetis, Selle, Whitelam, Grant, Tebb, etc. A variety of routine business was disposed of, and new members admitted, The Secretary was instructed to draw up a provisional syllabus for winter meetings, to be submitted to the next meeting. A very serious infringement of the Pharmacy Act was mentioned by one of the members, and it was decided to take action in the matter. A letter was read from the Secretary of the Pharmaceutical Society *re* the proposed "Compendium," but the meeting was not at all certain as to the scope of the proposed book.

PETERBOROUGH AND DISTRICT CHEMISTS' ASSOCIATION.

EXCURSION TO STAMFORD.

Thursday, August 13, 1903. There were present Mr. and Mrs. J. H. Pearson, Mr. and Mrs. C. Bailey, Mr. and Mrs. Farr, Mr. and Mrs. Robinson, and Messrs. T. W. Bodger, S. Booth, T. J. Calcutt, F. Dickinson, W. R. Edwards, J. Green, G. A. Johnson, H. E. Noble, J. S. Prior, John Sturton, Fred Sturton, F. W. Whitwell, and J. E. Saunders. The party first visited Burleigh House, the seat of the Marquis of Exeter. On the return of the party to Stamford the corporation regalia were shown, by the kind permission of the mayor. A visit was then paid to an ancient crypt near St. Mary's Church. High tea was served at the Stamford Hotel, and subsequently the printing of the *Stamford Mercury*—one of the oldest papers in the United Kingdom—was found very interesting. A visit to Brown's Hospital ended a most successful and enjoyable outing, the first of this young Association.

AMERICAN PHARMACEUTICAL ASSOCIATION.

ANNUAL MEETING.

Monday, August 3, 1903, at Mackinac Island, Michigan, Dr. George F. Payne in the chair.

Presidential Address.

In his presidential address, Dr. Payne called attention to the attempts that had been made to obtain legislation antagonistic to the best interests of pharmacy, but, fortunately, most of such attempts had been defeated. Allusion was made to some features of the retail drug business, notably the sale of manufacturers' advertised nostrums. Other topics dealt with included poison laws, the liquor laws of the United States, the proposed National Food and Health Bureau, after which the President referred to the cultivation of plants for their medicinal properties, suggesting a number of plants which might be cultivated with profit in America for their essential oils. The question of the publication of a journal by the Association had been considered, and, as the result of a number of inquiries made in Great Britain and elsewhere, Dr. Payne stated that he was not convinced that the American Pharmaceutical Association could not carry out such a venture successfully. At the same time, it would be wise, he thought, to feel somewhat more sure of success before venturing upon such a field. The manufacture of synthetic alcohol, and recent researches on polonium and radium were briefly reviewed, and the address concluded with a number of recommendations for the consideration of the Association. The more important of these were that committees should be appointed to draft a model poison law, to draft a Bill giving pharmacists the right to sell and dispense liquids containing alcohol without paying a duty on the alcohol, and to consider the feasibility of publishing formulæ for domestic remedies. A number of other recommendations were suggested for increasing the membership of the Association, and for dealing with educational questions.

LEGAL INTELLIGENCE.

Sale of Food and Drugs Acts.

White Pepper.

On Thursday, August 13, 1903, at Leigh Police Court, Lancashire, Peter Gaskell, grocer, of Firs Lane, Leigh, was charged with selling pepper which contained 5 per cent. of ground olive stones.

Mr. Wilson, who prosecuted on behalf of the Lancashire County Council, alleged that there was a conspiracy between a Liverpool firm of pepper grinders and a Salford firm of wholesale drysalters to place adulterated pepper on the market.

The defendant was fined £5 and costs.

Vinegar.

On Monday, August 10, 1903, at Bolton, Moses Mills, Lever Street, Little Lever, was summoned for selling adulterated vinegar.

Mr. Wilson, who prosecuted, said the defendant sold a quart of vinegar which was found to contain not less than 50 per cent. dilute acetic acid of 4·1 strength, and not more than 50 per cent. genuine vinegar. He learned that the defence was that insufficient particulars were given on the certificate, and, as the analyst was away on his holidays, he was unable to call him as a witness. He asked for an adjournment that a sample might be sent to Somerset House.

Mr. Sellars, for the defence, objected to this course. The case was entitled to be heard as far as possible.

The certificate was ambiguous, and he asked for the summons to be dismissed.

The Magistrates granted an adjournment to September 17.

High Court of Justice—Court of Appeal.

The Name of a Veterinary Preparation.

On Wednesday, August 12, before Lord Justice Vaughan Williams and Lord Justice Stirling, an appeal was made against an order made by Mr. Justice Kekewich in Chambers, and affirmed by him in Court, for a commission to issue to the United States of America to examine witnesses on behalf of the plaintiffs.

The plaintiffs, Christy and Co., are the agents for sale in this country of a veterinary preparation manufactured by the plaintiff Young, who carries on business at Springfield, Massachusetts. The preparation in question is a fluid, in respect of which the plaintiff Young obtained registration in this country in November, 1901, of the word "Absorbine" as a trade mark. It further appeared that the defendants, Messrs. Tipper and Son, who are an old-established firm in this country, amongst many other preparations, make and sell an ointment under the name "Absorbine." On March 30, 1903, the plaintiffs issued their writ in this action, claiming an injunction against the defendants' use of the word "Absorbine," with consequential relief. On April 22, 1903, the defendants served upon the plaintiffs a notice of motion to have the plaintiffs' mark removed from the register of trade marks; and an order was made that the trial of the action and of the motion to rectify should come on together. On July 20, 1903, Mr. Justice Kekewich in Chambers made an order upon the application of the plaintiffs for a commission to issue to examine witnesses residing at various places in the United States of America as to the circulation in this country of American papers containing advertisements of the plaintiffs' preparation, and this order was affirmed by the learned judge in Court upon application made to discharge the order in Chambers. The defendants appealed.

Their Lordships allowed the appeal.

Lord Justice Vaughan Williams said there was no ground for a commission. The fact of the advertisements, if material at all, could be proved by calling witnesses in this country. The order for a commission must be discharged, and the costs of the application and of the appeal must be paid by the respondents.

Lord Justice Stirling concurred.

Spirits Act, 1880.

Methylated Spirit in Cough Mixtures.

On Tuesday, August 18, 1903, at Maidstone Police Court, Frederick Josiah Oliver, chemist, appeared in answer to three informations with respect to the sale of certain cough mixtures, etc., in the preparation of which methylated spirit had been used.

Mr. Dennis, who prosecuted for Somerset House, explained that there were two reasons why methylated spirit was not allowed to be used for internal preparations, first, because it did not pay duty, and, secondly, because it was an unsuitable spirit to be taken internally, and was therefore objectionable from a medical point of view. Defendant had rendered himself liable to a penalty of £100 in respect of every preparation.

Mr. Beck, for the defence, pleaded guilty, and said that the recipes and preparations were among the stock which defendant took from his predecessor.

The Bench imposed a fine of 40s. and 10s. costs in each case.

Customs Consolidation Act.

Saccharin Smuggling.

On Tuesday, August 18, 1903, at Wigan Police Court, George Enoch Skidmore, manager of the Palatine Mineral Water Company, Wigan, was fined the full penalty of £336, or in default six months' imprisonment, for being concerned in carrying 56 lb. of saccharin for which duty had not been paid (*vide ante*, p. 280).

For the defence, John Arthur Hopkinson, of Bury, deposed to selling the article seized as sugar to Skidmore.

The composition was 50 per cent. saccharin duty paid and the remainder sugar.

POISONING CASES AND INQUESTS.

The deaths by poisoning reported during the seven days ended Wednesday, August 19, 1903, numbered fourteen, thus:—

Poison.	Accident.	Suicide.
Ammonia	1	—
Chlorodyne	1	—
Chloroform	2	—
Hydrochloric Acid	—	1
Hydrocyanic Acid	—	2
Laudanum	2	1
Potassium Chlorate	1	—
Potassium Cyanide	1	—
Kind not known	1	1
Total	9	5

Ammonia.—A child at Fleetwood died as the result of drinking a quantity of liquid ammonia.

Chlorodyne.—A lady at Abbotts Roothing, Essex, died from an overdose of chlorodyne, accidentally taken.

Chloroform.—A man at Manchester, and a child at Croydon, died under chloroform, administered for purposes of surgical operation.

Hydrochloric Acid.—An elderly man at Kilmarnock committed suicide by drinking spirit of salt.

Hydrocyanic Acid.—An unknown man committed suicide in Savernake Forest by taking prussic acid, and a man at Lindfield took a quantity of the same poison, and also some opium.

Laudanum.—A Manchester commission agent, a Crimean veteran at Louth, and a cotton operative at Sowerby Bridge, died from the effects of taking laudanum.

Potassium Chlorate.—A child, two years old, at Morecambe, was given half a dozen chlorate of potash tabloids of 5 grains each, and two hours afterwards another half-dozen. The next day the child died from poisoning, the potassium chlorate having acted as a gastric irritant. The smallest fatal dose previously recorded was 40 or 45 grains given to a child of three years old.

Potassium Cyanide. — Charles Whitworth Matthewman, analytical chemist, Doncaster, died from the effects of taking potassium cyanide solution in mistake for barley water.

Other Fatal Cases.—A carpenter died at Wandsworth, apparently from the effects of poison, after taking liver pills and a quantity of what was supposed to be Epsom salt. Further investigations into the cause of death are in progress. A man at Castleford died from the effect of taking some acid, not definitely specified.

Attempts at Suicide.—Carbolic acid, laudanum, and oxalic acid were used by would-be suicides.

PHOTOGRAPHIC NOTES.

BY A PHARMACIST-PHOTOGRAPHER.

Photography On Tour.

Those of my readers who may be so fortunate as to have the opportunity of using their cameras while enjoying a summer vacation may find a few hints of service from one who has had considerable experience in tourist photography, both in this country and on the Continent. The camera chosen for this purpose should be small, compact, and capable of application to varied subjects; my own preference is for a stereoscopic hand camera, which can also be used for time exposures with a light tripod. The size of the plate employed being double the quarter-plate (6½ by 4¼), this allows of quarter-plates being used in the double backs if any difficulty be experienced in getting the 6½ by 4¼ size. It appears to me that stereoscopic photography, when lenses of good quality are used, will give the greatest possible scope for after enjoyment of the results; the prints or transparencies give by far the most realistic impression of the scenes photographed. Each negative is also of suitable size for the easy production of lantern slides by contact printing, and enlargements can be made up to 10 by 8 size without any appreciable loss of sharpness or detail.

If it be necessary to carry one's stock of plates for the whole holiday, cut celluloid films can be employed, with great saving of weight and bulk, and with no fear of loss by breakage. These can be used in ordinary book-form double backs as easily as glass plates by using a piece of black cardboard, cut exactly to size, behind each, to fill up the space usually occupied by the glass. For landscape work—especially later on in autumn—plates or films coated with an isochromatic emulsion, and used in conjunction with a pale yellow colour filter, will be found to yield better results. The same plates or films, if sufficiently rapid, can also be used for ordinary exposures and "snapshots."

For those who are satisfied to confine their work to hand exposures, a daylight loading film camera will be found most convenient and compact, and of this type of apparatus there are now a large number of excellent examples to choose from. It should not, however, be forgotten that unless the work is to be confined to exceptionally favourable circumstances as regards light and subject, that the lens employed should be capable of working at a large aperture; those of the flat field or anastigmatic type are best, and that the shutter should be readily adjustable to varied exposures.

If glass plates or cut films be selected for use during a prolonged tour, it is advisable to see that the boxes or packages all bear the same batch number; then expose and develop one before starting. If this prove satisfactory, it may fairly be assumed that the whole will be right. As a rule, our dry plate manufacturers are thoroughly to be relied upon, but had I taken this precaution upon the occasion of a Belgian tour some years since I should have been saved a great deal of vexation and loss, as my photographic efforts proved absolutely futile, on account of my having been accidentally provided with a faulty batch of plates.

The changing of plates can be effected at night in the bedroom, a small folding fabric lamp and a night-light being all that is necessary. Continental cities are usually very brilliantly lighted, and, if possible, a room should be selected the window of which is not directly opposite an arc lamp; but even if there be much light outside, the room may be generally sufficiently darkened by closing the outside sun-blinds. In the rare event of its being necessary to change plates during the daytime, I have generally found a suitable dark cellar; and while upon this point I would suggest the inclusion of a few sheets of ruby paper with the other accessories, which will occupy practically no space, and will not only be useful for wrapping up exposed packages of plates, but may prove an invaluable aid should it be necessary to extemporise a dark room.

In repacking exposed plates, the best method is the simple one of placing each pair film to film, and firmly wrapping them in fours or sixes, so that there will be no liability to friction, and replacing in their boxes. If the packing be neatly and firmly done, there is not the least necessity for the interposition of blotting or tissue paper between the films.

As regards troubles with Customs, an experience of seventeen Continental tours in different countries and of varying duration has failed to produce any in my own case. I believe a duty on sensitive plates is chargeable on entering Germany, but it is seldom enforced in the case of tourists. I had to pay this once at Bettingen, but as my stock consisted of about twelve dozen cut films of half-plate size, and the duty was charged by weight, it amounted to something less than one shilling, so it did not trouble me much, but had I been provided with glass plates the result would have been different. The Customs examinations have, however, been made less irksome to travellers of late years, and now one is seldom asked to leave the railway carriage, and often the negative reply to "Have you anything to declare?" is taken as quite sufficient.

A question often anxiously asked by intending photographic tourists is, "Are there any restrictions on photography in Germany and other military countries?" The only answer I can give to that is that there may be such restrictions, but they have never yet got in my way; but, then, I have never experienced any great longing to practise photography in the neighbourhood of military works, the pictorial possibilities in such places not being inviting enough. I have gained my experience chiefly in Germany and in German-speaking countries, and I find, on the whole, there is more freedom to practise photography even than in our own country. A little knowledge of the language is, however, a great help in smoothing over any little difficulty or misunderstanding which may arise. For my own part, I can fairly say that I not only have never experienced any such difficulty, but, on the contrary, have found only a desire to help.

Is it advisable to develop any plates while away from home? I think not, but sometimes it may be a satisfaction in case of a doubtful exposure, and the inclusion of a small tube of developer in cartridge form and a little "hypo" is not a serious addition to the baggage. I have never yet found occasion or inclination to use this, though I have frequently taken them with me, and incline to the opinion that it is better to take such plates or films as one is accustomed to work with, and develop at home in comfort and at leisure.

Mounting Prints Dry.

Bernard C. Roloff, writing to the *American Amateur Photographer,* suggests a method whereby photographic prints may be mounted dry. Briefly it is as follows:—An ounce of white shellac is placed in a wide-mouthed bottle and "several ounces of alcohol" poured over it. The bottle is then put in a pan of water, which is slowly heated until the shellac is dissolved. Should the solution be too thick to flow easily off a brush, slightly more alcohol is added. To mount prints the backs are smeared thinly with the solution, applied with a one or two-inch bristle paste-brush, and allowed to dry. When dry each print is held firmly in position on its mount, and both are covered with a clean cloth. A warm flat-iron is then run over the print several times, causing the shellac to melt and the print to adhere to the mount without wrinkles, buckling, or any of the numerous defects of a print mounted in the old way; moreover, spotting, and the subsequent fading of the print, is avoided.

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

Mineral Water Breakages.—The Bolton Mineral Water Association lost £2,000 during the last twelve months through breakages by customers.

Theft from a Chemist.—At Middlesbrough on Friday, August 14, a schoolboy was sent to an industrial school for stealing money from Mr. Harrington, chemist and druggist, by whom he had been employed.

Serious Fire at a Chemist's.—In the early morning of Friday, the 14th inst., a serious fire broke out at 136, Great Portland Street, London, W., occupied by Mr. C. Smith, chemist. The flames rapidly gained a strong hold, and, in spite of the efforts of the West End firemen, the shop and contents were practically destroyed, and the nine-roomed house behind seriously damaged.

Grocers and Medicated Wines.—The officers of the Inland Revenue are insisting strictly on compliance with the regulation prohibiting the sale of medicated wines containing more than 2 per cent. of proof spirit by grocers without a licence. It has been intimated to a member of the Bradford Grocers' Association that the sale of one such wine, containing 3·2 per cent. of proof spirit, must be discontinued forthwith.

Funeral of Mr. Stocker.—The funeral of the late Mr. George Stocker, chemist and druggist, of Exeter, took place at the Higher Cemetery on Saturday last. Among the friends present at the graveside were Miss Hooper, Messrs. H. Gadd, H. Wippell Gadd, E. Lemmon, E. F. Stone, J. Hinton Lake, T. C. Milton, Marsh, H. W. Gould, T. H. Seymour, H. J. Dalgleish, and Allan H. Ware. The beautiful wreaths sent included one from the Exeter Chemists' Association.

Glasgow University Extension.—A correspondent of a Glasgow newspaper has written to protest strongly against the scheme that has been adopted for the extension buildings of Glasgow University. An alternative plan which was previously prepared by the architect, but was passed over by the committee, is thought by some to be much superior to that adopted, and, as not a single stone has yet been laid, the Court of the University is asked to reconsider its decision.

The Sanitary Institute.—The programme has been issued of the thirty-sixth course of lectures and demonstrations for sanitary officers at the Sanitary Institute, Parkes Museum, Regent Street. The course, which extends from September 14 to November 26, includes lectures on elementary physics and chemistry, public health statutes, the practical duties of a sanitary inspector, municipal hygiene, building construction in its sanitary relations, and meat and food inspection.

A Case for Further Action.—Referring to the successful prosecution by the Pharmaceutical Society of Richard Jones Owen for the illegal sale of laudanum in Glasgow, the *Medical Press* suggests that the matter must not be allowed to drop, "in view of his impudent assumption of a medical status." It will be remembered that Owen had endeavoured to pass himself off as a registered medical practitioner, but on inquiry at the offices of the General Medical Council it was elicited that he had obtained registration under false pretences.

Leicestershire Analyst's Report.—At a meeting of the Leicestershire County Council on Wednesday, August 12, Dr. Bernard Dyer reported that during the quarter he had analysed ninety-eight samples under the Sale of Food and Drugs Acts, including thirty-two of sweet spirit of nitre. All the samples of sweet spirit of nitre were of genuine composition. Five years ago fifty-one samples of this drug were taken in the county, out of which seven samples, or nearly 14 per cent., were seriously deficient in quality; while two years ago, out of forty-six samples of the same drug, nine samples, or 19 per cent., were unsatisfactory.

Malaria and Mosquitoes.—Major Ross, in a letter to the *Times*, encloses a communication from Major Penton, D.S.O., R.A.M.C., Principal Medical Officer of the Soudan, who states that the measures adopted in Ismailia for the destruction of mosquitoes have been remarkably successful. Coincident with the destruction of mosquitoes and other larvæ, malarial fever at Ismailia this year shows a most striking improvement, statistics showing the year to be, so far, the healthiest on record. It is considered more than probable that when the present operations against mosquitoes are completed, malarial fevers will have practically disappeared.

Potato Spirit for Motor-Cars.—In view of the suggested new Irish industry, it is interesting to note that as a result of experiments on the chemistry of manures and artificial plant foods, the production of the potato per acre has been increased in Germany by 38 per cent. in the last ten years. In that country 160 acres are planted with potatoes for every 10,000 persons, as against only 31 acres here. Germany has profited immensely by the law passed some years ago regulating the production and use of untaxed alcohol for technical purposes, since, and to quote the American Consul-General in Berlin, "so great a stimulus has thereby been given to the cultivation of the potato and to the employment of cheap spirit in chemistry and other industrial arts."

Charge Against a Drug Company's Assistant.—At the Bradford City Police Court on Monday last, John Edward Pilgrim, an unqualified assistant, of 174, Manningham Lane, was charged with embezzling the money of his employers, Taylor's Drug Company, Limited. The prisoner pleaded guilty. The facts of the case were that Pilgrim, who had been in the employ of the company for eighteen years, had as part of his duty the soliciting of orders at hotels, and, though it was not part of his duty to collect money for the goods so ordered, had done so, and failed to account for the money. He had carried on a systematic fraud for about twelve months, and the total amount of his discrepancies was from £30 to £40. In consideration of the previous service and character of the prisoner, the Bench inflicted the small penalty of 10s. and costs or fourteen days' imprisonment.

Dispute as to a Secret Process.—On Friday, August 7, in the King's Bench Division of the High Court of Justice, the case of the Société Chimique Roubaisienne *v.* Sherrin came up for further hearing. Plaintiffs, who carry on business at Roubaix in Belgium, brought an action to recover £5,000, which it was alleged had been advanced to defendant by plaintiffs for the purpose of carrying on a secret process for the manufacture of artificial turpentine and linseed oil. Mr. Justice Wright said the main question was whether the installation at Southend, where the experiments were conducted, had failed, and whether plaintiffs were justified in treating the contract as at an end, and after a fairly lengthy hearing his Lordship intimated that if the works were disposed of before the whole of the questions between the parties had been settled, plaintiffs might render themselves liable for heavy damages.

Chemist's Errand Boy in Trouble.—At the Bournemouth Borough Police Court on Thursday, Charles Findlay, an errand boy in the service of Mr. F. W. Hornby, pharmaceutical chemist, of Christchurch Road, Boscombe, was charged with stealing 10s., the property of his employer.—Mr. Walter Darrow, manager of the shop at which prisoner was employed, said that on the previous day he placed two half-sovereigns on the counter of the dispensing-room. Three-quarters of an hour later he missed one of them, and spoke to prisoner concerning it. At first he denied knowing anything about it, but afterwards he gave it up.—Prisoner now said he found the half-sovereign on the floor, and thought it was a sixpence. Not knowing to whom it belonged, he hid it in the garden, but afterwards returned it to Mr. Darrow.—Being dealt with under the First Offenders Act, he was bound over to come up for judgment if called upon within six months.

An Exeter Firm's Outing.—On Saturday last the employees of the wholesale department of Messrs. Holman, Ham and Co., chemists and druggists, of Exeter, were entertained by Mr. P. F. Rowsell at his residence, Nutbrook, Withycombe. They journeyed by train to Exmouth, thence by carriages, provided by Mr. Rowsell, to Nutbrook, where croquet and other games were indulged in. Nearly thirty sat down to dinner, the Rev. W. M. Briggs, chaplain to the Mayor of Exeter, honouring the company with his presence. "Success to the Firm" was proposed by the manager (Mr. Turner), and responded to by the Chairman (Mr. Rowsell), who said he was satisfied with the progress the firm was making. Mr. Eveleigh proposed "The Health of the Travellers," and Messrs. Brooks and Pepperell replied. The Rev. W. M. Briggs made a pleasing speech in kindly reference to the firm, and the party afterwards went round the gardens. A vote of thanks having been given to the host and hostess for their hospitality, the company departed.

Sir Oliver Lodge on Radium.—In a letter to the *Times* of Monday last, Sir Oliver Lodge points out once more that all the known properties of radium are consistent with the hypothesis that a rearrangement of parts is going on inside the atom, and that it is not a case of chemical action in the ordinary sense at all. There is no difficulty in accounting for the energy in this way. Sir Oliver Lodge remarks incidentally that he is struck with the dependence of the populace on the daily Press for their scientific interest and information. In France it appears that many educated and professional persons have barely heard of the existence of radium, and the name of Mdme. Curie means nothing to them. They are, indeed, in the position of English people in 1888-95 with respect to the discoveries of Hertz and his successors—a subject which the Press did not happen to take up until it was popularised by an application to telegraphy. In the equally important matter of radium, however, the British public have had their interest stimulated and have been kept well informed.

Technical Education in the Transvaal.—The report of the Commission appointed to inquire into the steps to be taken to bring into existence an institution which should form part of a teaching university for the Transvaal has just been issued. The Commission recommend (*a*) that temporary premises be acquired where provision may be made immediately to carry on locally the work of a mining course embracing four years of a standard at least as high as that of the course of mining engineering of the South African School of Mines; (*b*) that the Government set aside Plein Square, should that site remain in the gift of the Government, or, failing that, some equally central site, with a view to providing space for the establishment and growth of a teaching institution; and (*c*) the immediate acquisition of a site for a teaching university for the Colony and for any other parts of South Africa which may be willing to co-operate with the Colony in its venture. The site should be within a convenient distance of Johannesburg and Pretoria, and as near the mines of Witwatersrand as is compatible with purchase at a reasonable price. It is further recommended that the salary of the principal be £3,000 per annum.

Wills.—The will, which bears date February 25, 1901, has now been proved of Mr. Walter Farnworth, of William Farnworth and Son, of King William Street, Blackburn, chemist, Mayor of Blackburn, who died from the result of a carriage accident on April 16 last, aged thirty-eight years, leaving estate of the gross value of £48,417 5s. 4d., including net personalty £37,684 13s. 7d. Mr. Farnworth bequeathed to the Blackburn Free Library and Museum, for the Art Gallery, such pictures as the managers may select. In the event of the death of all the residuary legatees without leaving issue, there are reversionary legacies of nearly £15,000 to friends and relations, £2,000 each to the Blackburn Ragged School and the Blackburn Orphanage, £5,000 to the Blackburn District Nursing Association, and the ultimate residue, perhaps about £5,000, to the Blackburn and East Lancashire Infirmary.—Baron William Ernest de Bush, of 6, Albert Hall Mansions, and of W. J. Bush and Co., Limited, of Ash Grove, Hackney, manufacturing chemists, who died on July 24 last, left personal estate of the net value of £23,909 15s. 9d., the gross value being £25,762 2s. 1d.

Stamp Duty on Medicines.—The revenue from medicine stamps has largely increased during the year 1902-3, the total amount received by the Exchequer under that head being more than £333,000, of which Scotland contributed £2,285. The total receipts for the last nine years have been as follow:—

1894-95.	1895-96.	1896-97.	1897-98	1898-99.	18'9-19'0	1900-01.	1901-02.	1902-03.
£	£	£	£	£	£	£	£	£
234,881	238,946	254,726	260,852	266,404	288,827	297,480	306,337	333,392

Since 1894 there has been an increase in the amount received annually, but the increase was never so pronounced as in the year under notice. The excess for the year 1902-3 over the earlier date was nearly £100,000. The manner in which the revenue has benefited is shown in a still more striking manner by the fact that the stamp duty on medicines brought in less than £44,000 annually forty years ago. The report of the Commissioners includes a summary of the now historic case of Ransom *v.* Sanguinetti. The number of so-called "patent medicine" licences issued during the same period was 36,366 (England, 33,401; Scotland, 2,965), the net receipt of duty therefrom being £9,095. The number of similar licences issued last year was 35,364, while the amount of licence duty paid was £8,842.

Some London Statistics.—In the annual report of the chief officer of the Public Control Department of the London County Council a number of interesting statistics are given. The number of inquests held in the year 1902 was 7,729, this number being considerably less than in any year since 1898, and some 200 less than in the previous year. The necessity for improvements in the existing system of death certification, referred to by Mr. Idris in his presidential address to the British Pharmaceutical Conference, is further emphasised. An appeal is now pending in a case where an inspector of the Council took proceedings against a wholesale firm of tea-dealers for weighing paper with tea. Various suggestions are put forward for amendment of the Weights and Measures Acts, one of the recommendations being the legalisation of measuring instruments of mechanical action, which are now technically outside the Acts. There is at present little indication of the adoption of the metric system in general trade, but its use is growing in export trade, and the chief officer of the department is of opinion that the steps recently taken by the Education Department to give instruction in the metric system to scholars of the Board Schools will pave the way for the gradual adoption of the system in this country. With regard to the administration of the Shop Hours Acts, figures are given which show that since the appointment of inspectors in 1899 the number of cases of serious over-employment has steadily declined, as during last year there were only 167 such cases, as compared with 212 in 1901 and 249 in 1900. The tendency now appears to be for shopkeepers generally to adopt one or other of the early-closing movements, thus minimising the probability of over-employment.

Eucalyptus and Consumption.—Messrs. R. T. Baker and Henry G. Smith have written from the Technological Museum, Sydney, to the *Daily Chronicle*, pointing out that a great diversity of constituents exist in the oils obtained from the various eucalypts, and that the value of the official oil is usually understood to depend on its eucalyptol content, but so far nothing very certain is known as to which is therapeutically the most important agent. "There is thus a great difference of opinion as to the medicinal value of eucalyptus oil, but we submit that it is possible that this is largely due to the use of oils that have but little chemical resemblance, and where results have not been so satisfactory, it is probable that those kinds have been used in which the most important constituents are present only in minute quantities, or are entirely absent. The therapeutic knowledge about eucalyptus oil is most elementary, and no systematic researches have, as far as we are aware, been yet undertaken to test the value of the various constituents. Until this knowledge is obtained it is not possible for anyone to pass judgment on the medicinal value of eucalyptus oil. The general public largely consider eucalyptus oil to be a constant quantity, and, therefore, the greatest amount obtainable appeals to them most forcibly. Amongst pharmacists and others whose knowledge is more scientific, the oils divide themselves into two classes—those in which the predominant constituent is eucalyptol, and those in which it is phellandrene. A research extending over six years on eucalypts and their essential oils has recently been completed at this museum and published in book form. When working out the probable evolution of the genus from the allied genus *Angophora*, it was found that in the oils of the supposed oldest species of the eucalpyts pinene (a terpene) predominated. As the different species descended, eucalyptol was detected to come into the oils in increasing amount, until the maximum is reached and obtainable from such species as *Eucalyptus globulus*, *E. Smithii*, etc. In this long sequence of species other types of eucalypts have established themselves, branching off from the main, and forming distinct groups, having oils peculiar to each group. For instance, those containing aromendral (an aldehyde), and which are typical of the 'boxes,' or those that contain piperitone (a ketone), and obtainable from the 'peppermints.' It is hardly to be expected that these various types of oil will be of equal value medicinally, but which of these is of the greatest value remains yet to be determined. The chemical knowledge of eucalyptus oils is considerably in advance of that of the therapeutic knowledge, as it is now known which species yield particular properties in greatest amount, and we have also shown all of the new constituents of possible value are obtainable in commercial quantities by a proper system of preparation and fractionation. It is only within the last three or four years that these bodies have been isolated and determined here, but they must often have been used in small quantities unconsciously, which perhaps accounts for the varying results so often recorded. As stated above, eucalyptol is so far the recognised medicinal property of eucalyptus oils, but who can say what their other constituents may not be capable of therapeutically, as, for instance, eudesmol, the stearoptene or camphor of eucalyptus oil, which occurs in many species, and in such abundance in the oil of one that it has been named *E. camphora*? Although only recently discovered, eudesmol occurs in small amount in the oil of the 'Sydney peppermint,' *E. piperita*, the species from which Dr. White distilled eucalyptus oil in 1788, and of the medicinal value of which he speaks so highly. Small amounts of eudesmol must have often been used unintentionally, and obtained from other species." In conclusion, the writers say it is to be hoped that someone having the necessary qualifications will consider this matter of therapeutic investigation of sufficient importance as to be worthy of special research, which, of course, is beyond the scope of the work of this museum. The possible results from such investigations must necessarily be far-reaching, and may result in untold benefit to mankind generally. The following constituents are now known to occur in eucalyptus oil, and are distributed most unequally among the oils of the 150 species :—Eucalyptol, eudesmol, geraniol, methyl alcohol, ethyl alcohol, butyl alcohol, amyl alcohol, aromadendral, citral, citronellal, butaldehyde, valeraldehyde, piperitone, geranyl-acetate, amyl-eudesmate, valeric acid ester, acetic acid ester, eudesmic acid, acetic acid, aromadendrene, pinene (both dextro and lævorotatory), phellandrene, and cymene. Four or five of these constituents occur only in eucalyptus oils, and are new to science.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. Percy A. W. Self, of Yeovil, a student-associate of the Pharmaceutical Society, has just passed the Intermediate Science Examination of the London University. He was placed in the first division.

Mr. Anthony Tate has purchased, as from August 1, the old-established business of Mr. W. M. Holmes, 7, Belgrave Mansions, London, S.W. Mr. Tate was previously with Messrs. Hooper, Struve, and Co., Pall Mall East, for nearly three years.

Mr. Edmund White, B.Sc., F.I.C., has resigned the position of pharmaceutist to St. Thomas's Hospital, London, having been appointed to take charge of the business of Messrs. Hopkin and Williams, manufacturers of fine chemicals.

Mr. F. W. Bates, chemist and druggist, Brooks Bar, the Chairman of the School Committee of the Stretford Urban District Council, on Tuesday presented a silver shield to the Trafford Park school for its record of the highest average attendance for the month of July.

Miss Elsie S. Hooper, Burroughs scholar at the School of Pharmacy, who passed the Minor and Major Examinations of the Pharmaceutical Society, after studying at the "Square," has passed the General Intermediate Examination for internal students in the Faculty of Science of the London University.

The Names of Two Chemists of Swindon, Mr. Stafford A. Warner, M.P.S., 29, Regent Circus, and Mr. John J. Shawyer, chemist and druggist, 12, Wood Street, appear in the list of conscientious objectors to the Education Act, published in the *Daily News*. Both of these gentlemen have appeared at the local police court to answer summonses for non-payment of rates so far as the education impost is concerned.

Councillor Ralph Shorrock, of Darwen, was on Thursday, the 13th inst., unanimously elected to a vacancy on the Aldermanic bench of the Darwen Town Council. The new alderman was also made Returning Officer for North-West Ward for the remainder of the ensuing year. There is no name more closely associated with the growth of Darwen. Alderman Christopher Shorrock was the father of the Council, and the newly-elected gentleman has the distinction of being the oldest man of business in the town. Alderman Ralph Shorrock was elected as a representative of Central Ward on November 1, 1888, so that he has served uninterruptedly for fifteen years. He is President of the Darwen Tradesmen's Association; President of the local Chemists' Association; and Vice-President of the North-East Lancashire Chemists' Association. The Darwen tradesmen two years ago presented him with a handsome silver tea service as a memento of his services.

TRADE NOTES.

Condy and Mitchell, Limited, 65, Goswell Road, London, E.C.—Two preparations of this firm are in especial demand at this time of the year. The one is "Condy's Crystals" in the form of compressed tablets, which, when dissolved in water, produce the genuine Condy's fluid, which, we are informed, contains no permanganate of potash. Condy's crystals, in the state of small granules readily soluble in water, are particularly convenient for holiday-makers and travellers; this latter is, of course, an old and well-tried preparation, but the tablets are a more recent production, and in these days of compressed chemicals will, without doubt, rapidly become popular. For particulars as to terms chemists should write to the firm.

P.A.T.A. List.—Four firms have recently protected the price of various articles. The Tasmanian Eucalyptus Oil Co., Limited, 138, Leadenhall Street, E.C., have added to the P.A.T.A. list a series of their Platypus brand eucalyptus oil preparations. The oil is put up in bottles ranging from 2 drm. at 2d. to 2½ oz. sold at 1s. In addition to these, this company has brought out and protected a series of pastilles, tablets, soap, ointment, etc. The Thermogène Co., Hayward's Heath, Sussex, have placed "Thermogène" among the articles which must not be sold below a stated price. This article is an absorbent medicated wadding recommended for rheumatism, neuralgia, bronchitis, and other complaints. The Marmite Food Extract Co., Limited, add to the articles they already have on the list, Concentrated "Marmite" Bouillon in tubes. The Capsuloid Co., 31, Snow Hill, E.C., have brought out a 1s. 1½d. size of their digestive tablones put up in bottles convenient for carrying in the waistcoat pocket.

Arthur H. Cox and Co., St. Martin's Place, Brighton.—The demand for medicines in a compressed form is daily increasing, and it is satisfactory to note that manufacturers are striving to meet the wishes of the public, and consequently the convenience of chemists and druggists, by supplying in elegant form and in large variety these preparations. We have, from time to time, had opportunities of examining the compressed products of the firm whose name appears above, and can say that they possess the qualities claimed for them—accuracy, portability, and reliability. In addition to this, they are packed in very suitable form and good-class style, and can with confidence be displayed by the retail chemist. It is not necessary to mention any particular medicament manufactured in this form; and in fact the variety of drugs and combinations of drugs prepared for administration as tablets is so large that it would be impossible to go into details concerning even a very small proportion of them. Consequently, readers would do well to put themselves in communication with the firm, who will be pleased to supply full particulars.

"Antiphlogistine" is the name of a preparation for external application in inflammatory and other diseases, introduced by the Denver Chemical Manufacturing Company. Chemically it consists of glycerin, boracic acid, salicylic acid, iron carbonate, menthol, eucalyptus and iodine, combined with dehydrated silicate of aluminium and magnesium. It possesses hygroscopic properties, and by its affinity for fluid it abstracts water from the tissue, and in so doing relieves congestion and removes inflammation. It is this property which renders it a valuable therapeutic agent in cases of local inflammation, whilst as an antiseptic and poultice dressing it is useful in a great variety of cases. Among the diseases for which the medical profession is prescribing "Antiphlogistine" are pneumonia, bronchitis, and pleurisy, as well as for such minor ailments as boils, sprains, burns, etc., etc. One of the many advantages it has over the ordinary poultice is that it is always ready for use and simply requires to be spread on the skin over the affected part and covered with cloth, and can be easily peeled off. For sale it is put up in seamless and sealed air-tight tins, and for particulars as to terms chemists should apply to 110, Cheapside, London, E.C.

John MacKay and Co., Canning Street, Edinburgh.—As manufacturers of high-class pharmaceutical products, this firm requires no introduction to readers of the Journal. Among the preparations which have recently been submitted to us for examination are a series of concentrated infusions. These include the infusions of gentian (compound), senega, and buchu, and one part of any of these added to seven parts of water produces the B.P. article. These galenicals are of good, bright appearance, their keeping properties are excellent, and they can be dispensed with confidence. The concentrated waters, among which might be mentioned Aqua Rosæ Conc. and Aqua Menthæ Pip. Conc., are likewise preparations to be recommended. Aromatic spirit of ammonia as prepared by this firm is another article of excellent character, and quotations should be applied for as well as for all other pharmaceutical preparations. Cascara sagrada, especially in the present uncertain state of the market, should be attracting the attention of buyers, and the liquid extract which has been submitted to us is undoubtedly a most reliable preparation. Parrish's Syrup of a bright, clear appearance and MacKay and Co.'s refined gelatin or extract of calves' feet, which produces a brilliant and nutritious jelly, are both well-known products, whilst the various gelatin capsules which this firm manufactures are in great demand.

Messrs. Howards and Sons, of Stratford, E., inform us that they have entrusted to Mr. Edmund White, B.Sc., F.I.C., the management of that branch of their business dealing with the manufacture of fine chemicals, and carried on under the style of Messrs. Hopkin and Williams, at Cross Street, Hatton Garden, E.C., which until recently was under the management of the late Mr. H. C. Everson, F.I.C. Messrs. Hopkin and Williams have a newly-built and equipped factory at Ilford, where the laboratories afford ample scope for research work in chemical technology and extension of business under Mr. White's direction. Mr. White, who is a Bachelor of Science of London University and a Fellow of the Institute of Chemistry, was formerly Bell Scholar in the Pharmaceutical Society's School, acting afterwards as Demonstrator in the Chemical Laboratories at Bloomsbury Square. For the last fourteen years he has been in charge of the pharmaceutical department at St. Thomas's Hospital, where he has carried out original work dealing with pharmaceutical chemistry, one of the latest contributions from his laboratory being the solution of the time-honoured kino gelatinisation problem. Mr. White is also well known as joint author of 'Pharmacopedia' and as the compiler of the latest edition of the St. Thomas's Hospital Pharmacopœia. At the recent Bristol meeting of the British Pharmaceutical Conference he was appointed one of the Honorary General Secretaries, to fill the vacancy caused by the retirement of Mr. F. Ransom.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

The Drug Sales.

London, Thursday Night, August 20, 1903.

The following table shows the number of packages offered and sold :—

	Offered.	Sold.		Offered	Sold.
Albumen	25	0	Gum—Chicle	1	0
Aloes	73	62	Elemi	10	0
Ambergris	7	2	Guaiacum	2	0
Aniseed	1	0	Kino	12	0
Areca Nuts	287	107	Mastic	5	0
Argol	9	8	Myrrh	47	0
Balsam Capaiba	11	0	Honey	440	130
Balsam Peru	15	0	Ipecacuanha	59	20
Balsam Tolu	46	2	Jalap	17	17
Buchu Leaves	37	3	Kamala	1	0
Calisaya Bark	9	0	Kola Nuts	7	5
Canella Alba	20	0	Lemongrass Oil	34	0
Cardamoms	42	18	Lime Juice	37	0
Cardamom Seed	183	0	Lime Oil	7	0
Cardardine Musk	2	1	Loofahs	3	0
Cascara Sagrada	50	60	Magnesia Carbonate	19	19
Cascarilla Bark	20	0	Maracaibo Bark	2	0
Cassia Oil	10	10	Menthol Crystals	11	4
Castor Oil	14	0	Nutmeg Oil	5	0
Cedarwood Oil	4	4	Orange Peel	10	0
Chalmoogra Oil	5	0	Orris Root	30	30
Chiretta	5	0	Peppermint Oil	60	30
Cinnamon Oil	5	0	Quillaia Bark	25	0
Coca Leaves	10	5	Rhubarb	62	12
Colocynth	16	0	Rose Oil	5	0
Colombo Root	51	9	Sarsaparilla	80	23
Croton Seeds	22	0	Sassafras Oil	10	0
Cubebs	75	1	Scammony Root	24	34
Cuttle Fish	35	0	Senega Root	5	0
Dogwood Bark	1	0	Senna	77	32
Dragons' Blood	33	7	Senna Pods	10	79
Dried Turtle	1	0	Squills	20	0
Ergot of Rye	23	2	Strophanthus Seed	18	0
Eucalyptus Oil	37	4	Tamarinds	69	0
Gamboge	14	0	Tonga Root	2	0
Guaza	10	0	Tonquin Beans	28	0
Gum—			Tonquin Musk	2	0
Ammoniacum	7	0	Turmeric	428	130
Arabic	111	1	Wax	590	83
Benjamin	211	42	Wintergreen Oil	1	0

Affairs have assumed a gloomy aspect. Instead of improving, things appear to be going from bad to worse. There is no business, no fruit, and it looks as if there would be no harvest. The City clerks who were promising themselves a holiday among the reapers in the cornfields will scarcely be wanted, and their superfluous energy will, it is to be feared, have to be worked off otherwise than with the scythe. The agricultural outlook, the troubles in the Near East, which are daily growing more and more threatening, the general bad state of trade—all these combined conditions seem to have cast a shadow over the City. The old comforting and temporal excuses which bad weather and the holiday season usually afford are of no avail, for it is impossible that these alone can account for the general stagnation everywhere apparent. The state of the drug trade is neither better nor worse than that of any other branch of commerce, and Mincing Lane, like Throgmorton Street, is waiting patiently for the better days which cannot be far ahead. An important firm of brokers has shut up shop, and in the sale-rooms to-day the appearance of one of the partners in the rostrum was greeted with acclamation. This gentleman, in a few brief and graceful sentences, placed on record his appreciation of the kindly feeling which druggists had always evinced towards him. From other directions come rumours of failures or impending failures, but it is to be hoped that these are only rumours. At the auctions a fairly large supply of goods was catalogued, but bids came very slowly indeed, and except in the case of one or two articles there was, generally speaking, little demand. Senna sold well at higher prices; wax was in large supply, but only for a small proportion were buyers forthcoming. Gum Benjamin figured prominently on the catalogues, but the finest qualities were conspicuous by their absence. Cape aloes again sold at an advanced price, and the particular variety referred to is very scarce. Menthol is again rather lower, but considering the prices at which it is offered to arrive, this article may be said to keep up fairly well. Hotchkiss' peppermint oil, offered without reserve, realised lower prices than at last auctions. The results of the Cascara and Senega offerings are given below. For the most part mention is only made of those articles which found buyers.

ALOES.—Cape, which is very scarce and in good demand, was again sold at an advanced price, for fair bright hard, drossy, and slightly soft, 62s. to 63s. 19 cases Zanzibar aloes sold without reserve at 20s. Curacoa sold at 13s. 6d. to 23s. 6d., according to quality, the former price being paid for dull liver.

AMBERGRIS.—2 tins, each containing 2 oz., of medium quality, sold at 70s. per oz.

ARECA NUTS.—Ten bags sold prior to sale, no price being mentioned. A quantity of rubbish sold at 9s.

BUCHU LEAVES.—Fair green rounds sold at 10d.

CAPE ARGOL.—Sold at 55s. to 60s. per cwt.

CARDAMOMS—Sold at very steady rates; decorticated were slightly dearer.

CASCARA SAGRADA.—60 bags 1899 crop sold at 58s. per cwt. There is no more to be had below 60s., and very little at that, reshipments to America being somewhat large.

CASSIA OIL.—A quantity sold at 2s. 10d. per lb. This was for 81·82 per cent. Cinnamic Aldehyde (E. J. Parry's analysis).

CEDAR WOOD OIL.—4 carboys American sold without reserve at 6½d. per lb.

COCA LEAVES.—Fair green broken Truxillo sold at 10½d.

CUBEBS.—Singapore sifted, 1 bag sold at 35s.

DRAGON'S BLOOD—Sold £6 5s. to £8 10s. per cwt., according to quality.

EUCALYPTUS OIL.—4 cases were sold without reserve at a ruinous price. A quantity was bought in at 10d. to 1s. 3d. per lb.

GAMBOGE—Bought in at £16 for mixed blocky pipe, a bid of £14 10s. being refused.

GUM BENJAMIN.—25 cases very ordinary Sumatra sold at 95. per cwt., good medium almondy Sumatra, well packed, £6 10s. to £6 12s. 6d.; common Siam was bought in at £10. Palembang sold at 55s. to 56s. being slightly dearer. No really fine gum was offered, and this is the quality most in demand.

HONEY.—Jamaica, 18s. 6d. to 21s. per cwt. The latter price was for good bright liquid.

IPECAC.—A quantity of Rio was sold with all faults, part being sea damaged and the rest otherwise not up to the mark. But good root sold at 4s. 9d. Carthagena greyish earthy root sold for 3s. 10d., but good root realised from 4s. to 4s. 3d.

JALAP.—4½d. per lb. for Vera Cruse.

KOLA NUTS.—These were in slightly better supply than at last auction, when only half a barrel was offered. Four barrels sold at 5½d. per lb.

MAGNESIUM CARBONATE.—19 cases American, in blocks, sold without reserve at 14s. 6d. per cwt.

MENTHOL.—Kobayashi sold without reserve at 20s. 6d. to 21s. This is rather lower than the price obtained at last auctions.

MUSK.—I bottle containing 8 oz. Nepaul grain musk sold at 28s. per oz.

ORRIS ROOT.—10 bags Mogador, offered without reserve, sold at 11s. per cwt. Florentine 14s.

PEPPERMINT OIL.—H. G. Hotchkiss' Oil sold without reserve at 10s. 6d. to 10s. 9d. per lb. This was a reduction of from 9d. to 1s. per lb. on last sales' rates. Kobayashi Oil sold without reserve at 4s. 9d.

RHUBARB—Was in little demand; high-dried is a ½d. dearer.

SARSAPARILLA.—Fine sound Jamaica sold at 1s. 2d., damaged 1s. 1d. Lima did not sell and was held at 1s.

SCAMMONY ROOT.—A quantity sold at 22s. 6d. for ordinary.

SENNA LEAVES—Were of a greener grade than those last offered; these sold at very full prices, realising 1s. 2d. to 3s. 4d. per lb. advance. Tinnevelly good green bold leaf sold up to 5¼d. per lb., whilst small leaf realised from 2¼d. to 2¾d.

SENEGA—Quoted 3s. 4d. on the spot. The packages offered at auction were held for 3s. 6d.

TONQUIN BEANS—Were held at 1s. 6d. per lb. for frosted Para.

TURMERIC.—A large quantity, fresh water damaged, sold without reserve at from 7s. to 9s. per cwt.

WAX—Was in heavy supply, the demand ruling very quiet. Jamaica realised £7 15s. to £7 17s. 6d., other kinds being chiefly bought in at £7 5s. for Australian, and at £6 5s. to £7 5s. for East Indian and white Calcutta.

General Markets.

The General Market in Drugs and Chemicals remains very quiet, and no imported changes are reported. The following are a few quotations for large quantities:—

BISMUTH CARBONATE.—8s. 1d. per lb.; Subnitrate, 7s. 4d. per lb.

BORACIC ACID.—Powder, 24s.; crystals, 22s.

BORAX.—13s. 6d. to 14s. 6d. per cwt. for crystal and 14s. 6d. for powder. Howard's powder is quoted at 15s. 6d. to 16s. 6d.

BROMIDES—Unchanged. Potassium, 1s. 11½d.; Sodium, 2s. 2½d.; Ammonium, 2s. 3d.

CITRIC ACID.—1s. 1d. per lb. Schering's puriss. crystals is quoted at 1s. 10d.; free from lead (Kunheim's), 1s. 2d.

COCAINE.—No alteration. 17s. 6d. per oz. is quoted for the Muriate; 1 oz. bottles 2d. each extra. Cocaine pure, 2s. 9d. per oz. more than the Muriate.

CREOSOTE.—1¾d. per gallon for the crude. This variety is used for seasoning timber. Beechwood Creosote is quoted at 3s. per lb.

GLYCERIN.—68s. for half-ton lots. Schering's water-white and odourless double-distilled, 73s. per cwt.

IODIDES.—Unaltered. Potassium, 8s. 9d.; Sodium, 9s. 10d.; Iodoform, 11s. 8d.; Iodine Resublimed, 10s.

MERCURIALS—Are unchanged since prices were last quoted. Calomel, 2s. 10d.; Corrosive Sublimate, 2s. 5½d.; White Precipitate, 3s. 3½d.; Red Precipitate, 3s. 2d.; Mercuric Sulphate, 2s. 5d.; Hydrarg. Sulph. Nig., 2s. 4d.

OTTO OF ROSES.—Kezanlik in 1-oz. bottles per Turk. oz., 18s. 6d.; ½ and 1 kilo vases, 17s. 6d. The English ounce is equivalent to 0·885 Turk. ounce, hence 18s. 6d. for a Turk. oz. would be approximately 16s. 3d. for an English ounce; whilst 17s. 6d. per Turkish ounce is about equivalent to 15s. 6d. for the English ounce. It should be borne in mind that these quotations are, of course, for very large quantities.

OPIUM.—The market for all varieties is firm, and while business in the article remains very quiet, there is rather more doing. Persian is a little dearer, and 10s. 6d., to arrive, is asked. There is no change in any of the Turkey qualities.

MORPHINE—Firm at last week's prices. For the Hydrochloride 4s. 6d. to 4s. 8d. is quoted, according to quantity.

CODEINE.—No alteration; 10s. per oz. is still quoted for the pure Alkaloid.

QUININE—Is very quiet and prices remain unchanged.

SHELLAC—Still firm at the advanced price.

PATENTS AND TRADE MARKS.*

New Patent Applications.

PROCESS FOR PRODUCING AN APERIENT MEDICINE (No. 17,126, of 1902).—B. Mondlicht, 17, Erzsebet-Kornt, Burapest, Hungary. 15 Gm. of citric acid and 10 Gm. of carbonate of magnesium are dissolved in 300 Gm. of water. The solution is then filtered, mixed with liquid carbonic acid, and then pressed into suitable bottles or syphons. Any suitable liquid may be mixed with it to impart a pleasant taste.

HALOGENISING OF ORGANIC SUBSTANCES AND APPARATUS THEREFOR (No. 17,695 of 1902).—L. Marckwald, 35, Weimarer Strasse, Charlottenburg, Prussia. Relates to a process for halogenising organic fluid substances, especially for introducing a certain number of halogen atoms into the molecules of the said substances, consisting in that a certain portion of the substance is treated with halogen, new portions of the substances to be treated are continually subjected to the action of halogen, the mixture of unattacked substances and halogenised substances so obtained is continually withdrawn from the further action of the halogen, the halogenised substances are separated from the said mixture, and the unhalogenised substances are subjected again to the action of halogen. An apparatus for the above purpose is also described, consisting of a vessel having a reflux cooler, a still combined with a rectification column, a condensing apparatus thereon, and a cooler.

APPARATUS FOR CURATIVE TREATMENT BY AID OF ELECTRICITY AND OXYGEN (No. 17,902, of 1902).—J. J. Stanger, 15, Ehinger Strasse, Ulm, Germany. Consists of a vessel for the reception of a liquid or medicine, which is connected with the positive pole of a suitable source of electricity and enclosed in an insulated cover of porous material, in order that the liquid may be sucked through the latter, and of a second electrode, connected with the negative pole, of any suitable form, for completing the circuit, and which may be applied to any particular part of the body. When the two electrodes are applied the current passes through the liquid or medicine to the tongue, mouth, and inner organs in the direction of the other pole.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and 'Patent Notes for Inventors' free on application.

MEDICINAL OR CURATIVE PREPARATION FOR ANIMALS, MORE ESPECIALLY INTENDED FOR ADMIXTURE WITH FOODSTUFFS OR WITH MEDICINES OR REMEDIAL AGENTS FOR INTERNAL OR EXTERNAL APPLICATION (No. 20,022, of 1902).—T. J. L. Mitton, 9, Ash Grove, Victoria Park, Manchester. Consists of purified waste wood fibres or sawdust or the like, for combining with animal or cattle foods, which is charged with chlorine gas or chlorine salt deposit, the poisonous matter produced by the action of the gas being neutralised or destroyed, the resultant products being afterwards washed and then charged with an oily or fatty matter and the whole mass filtered. When the preparation is intended for combination with medicines or remedial agents the oily or fatty matter is left out. The product is especially beneficial to tuberculous animals or those suffering with inflammatory diseases.

MEDICINAL COMPOUND (No. 13,263, of 1902).—R. Ambrose, 9, South Kinning Place, Paisley Road, Glasgow. Consists of 5 oz. of each of the following ingredients:—Jamaica sarsaparilla, cascara sagrada bark, meadow rue, rose noble, quassia chips, yellow dock root, bog bean, wood sage, dandelion root, gentian root, wild thyme and aloes (Cape), which are mixed together and an infusion made in 26 pints of water. To this infusion are added 40 pounds of sugar and an ounce of preservative liquid.

Note.—Opposition to the grant of any of the above-mentioned patents must be filed at the Patent Office, or before September 22, 1903.

New Trade Mark Applications.

Device representing the heads of a horse, ram, and cow, for sheep dip, by McDougall Brothers, 68, Port Street, Manchester. 253,094.

ANODENOS label, for a stomachic mixture for the use of cattle, by B. C. Tipper and Son, 43, Homer Street, Balsall Heath, Birmingham. 253,148.

FERTOLE, for a chemical substance used for agricultural, etc., purposes, by Joseph Fison and Co., Limited, Eastern Union Mills, Ipswich. 255,827.

GOVO, for chemical manures, by Wm. Ellison and Sons, Havenside Manure Works, Havenside Hedon, Yorkshire. 255,900.

PERFECTOSE label ("Perfect" disclaimed), for an embrocation and a medicated preparation for human use, by A. E. Walters, 15, Great Marlborough Street, London. 254,894.

TIRONOIDS, for medicines for human use in tablets, by F. G. Perkins, The Limes, Earls Barton, Northants. 255,602.

IDOKELPENE label, for a medicated preparation for human use, by A. M. Stewart, "Tighdeargh," Blairgowrie, Scotland. 255,078.

ANTIGOTIN label, for chemical substances prepared for use in medicine and pharmacy, but not including medicated powder for sore and tender feet, by The General Chemical Co., Limited, 57, Chancery Lane, W.C. 255,142.

SAMMEUP! for medicinal powders for human use, by C. S. Tallant, 17, Blenheim Place, Blackman Lane, Leeds. 255,982.

REUNOL label, for medicine for human use, by J. A. Gatehouse, 15, Methley Street, Kennington Park Road, S.E. 255,600.

20 MULE TEAM BRAND label, for chemical substances prepared for use in medicine and pharmacy, by Borax Consolidated, Limited, 77 and 78, Gracechurch Street, E.C. 256,214.

PULWARI, for perfumery, etc., by J. A. H. Burn-Murdock, 32, Upper Bedford Place, Russell Square, W. 254,407.

Eugène Le Clerc (signature), for perfumery, etc., by the firm trading as Eugène Le Clerc, 43, Holford Square, W.C. 255,340.

Note.—Opposition to the registration of any of the above-mentioned Trade Marks must be filed at the Patent Office, on or before September 22, 1903.

NEW REMEDIES.

The Notes in this column embody recent suggestions in therapeutics, for the information of dispensers; they deal with novel applications of drugs and preparations in common use, in addition to new remedies strictly so-called.

Pyrane.—Sodium benzoyl thymyl-oxybenzoate, or pyrane, a white, slightly hygroscopic powder, with a faint aromatic odour and a sweetish taste, has been introduced as a remedy in neuralgia and rheumatism. It is given in doses of 15 to 45 grains three times daily, dissolved in water, in which its solubility is 1 : 5.—*Journ. Pharm. d'Anvers*, **59**, 108.

Ergot for Chorea in Young Children.—Eustace Smith advocates the use of ergot in the treatment of chorea. He shows that it may be given to children in large doses without risk of harm. It is a sedative of great value, and, provided sufficiently large doses be given, appears to act most favourably in chorea. Initial doses of 1 drachm of the fluid extract every four hours, increased to 90 minims every three hours, were given without any harmful symptoms being shown. One case, which showed no improvement under the smaller dose, was rapidly cured when treated with the larger quantity. Even 90 minims every two hours has been given without any unwelcome symptoms being developed, and continued without harm for days. The remedy should not be left off directly normal control of the muscles has been established, but should be continued as long as any abruptness of voluntary movement remains. It is only when this has completely passed away that ergot can be stopped without fear of a relapse.—*B.M.J.*, **2/1902**, 133.

Pilocarpine in Pneumonia and other Diseases.—E. Curtin finds that the hypodermic injection of pilocarpine is attended by most satisfactory results in the treatment of pneumonia, so much so that he regards the alkaloid as one of the most valuable remedies in the treatment of this disease. The dose given is 1/10 gr. of pilocarpine nitrate. Pleuritic pain is almost at once relieved, and the temperature quickly falls. Numerous instances of recovery of severe cases are recorded following the use of pilocarpine injection. No untoward effect was found to follow repeated administration of the drug. One precaution must be taken—to keep the patient warm, especially the feet. The action, uses, and dangers of pilocarpine among the black races have frequently been the subject of much diversity of opinion. W. Roper, after long experience, states that in most cases the drug has the effect, in addition to inducing perspiration, of causing purging, vomiting, or salivation. The muriate of the alkaloid induced perspiration only. Pilocarpine has also been given with excellent results in cases of palpitation of the heart and nephritis, and, invariably, of pneumonia. Babies suffering from chill have been given 1/200th part of a grain every hour instead of ipecacuanha. No ill-effects have been noticed from its use.—*Lancet*, **164**, 1,369; **165**, 342.

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

Liability to Medicine Stamp Duty.

By the courtesy of the Inland Revenue authorities and the public-spiritedness of Mr. Glyn-Jones, a case has been decided by the law courts (Farmer *v.* Glyn-Jones) which is one of the greatest boons we have had for some time, and the Inland Revenue authorities seem most anxious to administer it in our best interests and to the advantage of pharmacy in this country. In regard to medical men ordering "patents" pure and simple, with a liable label, it seems a "patent medicine" stamp will have to be affixed, but is not this to our best interests? We want to get medical men out of the way of ordering "patents," and if circulars are sent by the various associations to doctors explaining the matter, and suggesting Pharmacopœia preparations instead, will it not be an advantage? We have no wish to dictate to medical men what they are to prescribe, but we have a duty as pharmacists, and that is to suggest published formulæ. I hope the 'Compendium of Medicines' about to be published by the Society will not be too expensive, as I intend, with, no doubt, others, to distribute some copies among the doctors in my neighbourhood.

London, N.W., August 17, 1903. R. B. Betty.

A False Cusparia Bark.

With reference to Mr. Daine's letter in last week's Journal, may I point out to him that the false angostura bark referred to by him was a strychnos bark, and occurred about 1805, creating considerable alarm? This has not been met with since, and every student of materia medica is familiar with its characteristics—it being fully described in current textbooks. If he will refer to my paper he will find that the alkaloid from my bark "gives a blue-black colour with sulphuric and chromic acids." This at once distinguishes it from strychnine. If Mr. Daine has facilities for experimenting upon small animals, I should be pleased to forward him some extract from the bark. Had the alkaloid been strychnine I think I should be more or less dead by this time, for I have been tasting it and chewing the bark for the last six months.

Ryde, August 15, 1903. E. W. Pollard.

The Dispensing Difficulty.

Mr. Ellis's letter needs no reply except that he accuses me of applying the term quack to chemists. Not only did I not do so, but lest any (especially Mr. Ellis) should attempt to so twist my words, I took care to explain that I did not apply it to the ordinary "prescribing chemist," who simply recommends a remedy. By quack I meant one who pretends to diagnose and treat disease without any training or real knowledge of medicine, one who by reading an "up-to-date book on medicine" claims to be "more than a match for the ordinary medical man." Naturally, my having been myself a chemist makes me have an extra liking for this branch of the profession, and thus makes me deplore the more these miserable bickerings between the two branches, and it was simply to protest against such letters and sentiments as those of Mr. Ellis's—which even his friends regret as tending to increase the antagonism between medical men and chemist (see Mr. Wood's excellent letter, *P.J.*, July 18)—that I troubled you with my letter.

Newcastle-on-Tyne, August 18, 1903. T. H. Walker.

Labels for Concentrated Liquids.

With regard to the breaking down of concentrated liquids to those of standard strength some considerable confusion may arise from indefinite expressions of the terms for dilution. A case in point is concentrated hydrobromic acid (1-3). This has a sp. gr. 1·265, and contains about 30 per cent. of HBr. The expression (1-3) may be taken for 1 to 3 or 1 in 3 by weight or by measure. The following figures show the considerable discrepancies arising from different readings of this expression:—

By Measure,	Percentage HBr.
1 of acid, 3 of water (1 to 3)	8·9
1 of acid, 2 of water (1 in 3)	11·6
By Weight.	
1 of acid, 2 of water (1 in 3)	10·0
1 of acid, 3 of water (1 to 3)	7·25

I hope that a rate for general practice may be established.

August 11, 1903. "Interested" (217/40).

PUBLICATIONS RECEIVED.

Halation, Prevention, and Cure. "The Photogram" Series of Penny Pamphlets on Photography. No. 1. Pp. 16. London: Dawbarn and Ward, Ltd., 6, Farringdon Avenue, E.C. From the Publishers.

Animal and Vegetable Fixed Oils, Fats, Butters, and Waxes. Their Preparation and Properties, and the Manufacture of Candles, Soaps, and other Products. By C. R. Alder Wright, D.Sc.(Lond.), B.Sc.(Vict.), F.R.S. Second Edition, edited and partly re-written by C. Ainsworth Mitchell, B.A. (Oxon), F.I.C. With two plates and 154 illustrations. Pp. xvi. + 804. Price 25s. net. London: Charles Griffin and Co., Ltd., Exeter Street, Strand, W.C. 1903. From the Publishers.

Chemistry: Inorganic and Organic, with Experiments. By Charles Loudon Bloxam. Ninth Edition, Re-written and Revised by John Millar Thomson, LL.D., F.R.S., and Arthur G. Bloxam, F.I.C. Pp. xii. + 872. Price 18s. net. London: J. and A. Churchill, 7, Great Marlborough Street, W. 1903. From the Publishers.

A Course of Commercial German. By E. E. Whitfield, M.A., and Karl Kaiser. Pp. 1-274. Price 3s. 6d. London: Longmans, Green, and Co., 39, Paternoster Row, E.C. From the Publishers.

Lectures on Massage and Electricity. By Thomas Stretch Dowse, M.D.(Abd.), F.R.C.P.(Ed.) Fourth and Revised Edition. Pp. 454. Price 7s. 6d. net. Bristol: J. Wright and Co. 1903. From the Publishers.

Neue Arzneimittel und Pharmaceutische Spezialitäten. Von G. Arends. Pp. v. + 508. Berlin: Verlag von Julius Springer. 1903. From the Publisher.

Carbon Photography Made Easy. By Thos. Illingworth. Pp. 154. Price 1s. net. London: Iliffe and Sons, Limited. 1903. From the Publishers.

The Photo-Miniature. Vol. V. No. 51. June, 1903. Pp. 97-144. Price 6d. Press Photography. London: Dawbarn and Ward, Limited, 6, Farringdon Avenue, E.C. From the Publishers.

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Plant (T. H.—93/24).—The plant is *Spergula arvensis.*

Mouilla (J. B.—93/2).—So far as we know, the preparation can be obtained from any wholesale druggists' sundriesmen.

Address (F. W. H.—93/11).—Address him care of Messrs. Charles Griffin and Company, Limited, Exeter Street, Strand, London, W.C.

Turbidity in Solution (W. S.—93/13).—Add a few drops of any ordinary essential oil and shake well. If this does not answer write again, giving fuller information.

Boxes (C. P.—93/18).—You do not say what kind of box you require; if a cardboard box, doubtless Messrs. Robinson and Sons, Limited, Chesterfield, could supply you.

Inflammation Mixture (H. M. D.—93/16).—The substitution of chloroform water for part—say 5 oz.—of the water in the mixture will tend to improve the keeping properties of the latter.

Boot-polish (G. G.—92/25).—Try the following:—Dissolve beeswax, 1 oz., in spirit of turpentine, 5 fl. oz., then add drop-black ground in turpentine, ½ oz. A little Prussian blue may be added to improve the colour.

Stencil Ink (T. S.—93/12).—Boil together, shellac, 2 oz., borax, 1½ oz., and water, 10 fl. ozs., until the solution measures half a pint; then incorporate a mixture of powdered lamp-black or drop-black, and gum acacia, each 1 oz.

Hair Dyes (J. W. H.—93/14).—It is impossible for us to say what the dyes contain. Ammonium anacardate with ferrous sulphate can be made to give varying shades. You will also find a number of suggestive formulæ in the *P.J.*, of February 23, 1901, page 237.

Pancreatin in Pills (W. J. D.—93/17).—As the pills are to be coated with keratin, an oily excipient, such as kaolin ointment or White's theobroma emulsion (see *ante*, p. 156) should be used, and the pills covered with a thin layer of oil of theobroma before applying the keratin solution.

Spray for Rose Trees (A. F. C.—217/15).—The proportion of sulphurated potash should be varied from one-tenth of an ounce to one ounce per gallon, according to the susceptibility of the plants. For general purposes, the following is suitable in the case of hardy plants:—Sulphurated potash, 1 oz.; water, 2 gallons.

Soap-Making (G. N.—93/6).—(1) We do not know of any classes of the kind, but should recommend that an inquiry be addressed to the City Guild's Technical Institute, Exhibition Road, South Kensington. (2) The *Journal of the Society of Chemical Industry*, 9, Bridge Street, Westminster. (Price, to non-members, 36s. per annum.)

Ferroprussiate Paper (C. F.—93/10).—Try the following:—(1) Potassium ferricyanide, 1; water, 10. (2) Iron ammonio-citrate, 3; gum arabic or dextrin, ½; water, 10. Mix the two solutions in equal parts, filter, and preserve from the action of light. Well-sized paper should be evenly coated with the liquid on one side, by means of a soft brush or pad, and then hung up to dry in the dark.

Washing Cream (S. W. B.—93/22).—Shake oil of turpentine, 1 fl. oz., with strong solution of ammonia, 2 fl. oz.; when thoroughly mixed add water, 1 fl. oz., and again shake well. The mixture will not be inseparable, but the layer containing the oil can be diffused readily on shaking. A little soft soap, previously dissolved in the water (say, 1 in 20), will tend to prevent separation of the oil.

Sheep Dip, etc. (R. J. R.—93/19).—(1) Mix white arsenic, 6 oz., dried sodium carbonate, 6 oz., and sublimed sulphur, 4 oz. This mixture should be boiled with soft soap, 6 oz., and sufficient water to effect solution of the arsenic, after which more water should be added, so as to produce 16 gallons of sheep dip. Sometimes carbolic acid, crude cresol, or tobacco liquor is used in place of arsenic. (2) You will find a number of useful formulæ in 'Veterinary Counter Practice,' which you can obtain from H. Kimpton, 13, Furnival Street, E.C., at 3s. 6d. net. (3) It is a difficult matter to advise you, since a refusal to supply may mean the loss of a customer. Cannot you consult the individual's medical adviser or some member of the family?

DEATHS.

Gilkes.—On August 17, suddenly, William Henry Gilkes, Chemist and Druggist, 2, Banbury Road, Oxford. He had been in bad health for some time, and an inquest was not considered necessary. Mr. Gilkes was a member of the Pharmaceutical Society.

Hamp.—On August 19, at Alperton, Wembley, after a short illness, Thomas J. Hamp, managing director of the Holborn Restaurant, London. Aged 57. Mr. Hamp was well known to many members of the Pharmaceutical Society, and had been connected with the Holborn Restaurant for many years.

Kingzett.—On August 15, suddenly, at Seascale, Cumberland, Adeline Kate Kingzett, the eldest daughter of Mr. and Mrs. C. T. Kingzett, of Elmstead Knoll, Chislehurst.

Parson.—On August 18, at Cambridge, Henry James Parson, Pharmaceutical Chemist. Aged 54. Mr. Parson carried on business at Peas Hill, Cambridge. He returned from a visit to St. Leonards last Friday, and it was then noticed that he was not in his usual health, but he was not regarded as seriously indisposed. He was attending to business as usual on Saturday, and his death, which occurred on Tuesday morning, was a shock to his many friends. In 1872 Mr. Parson was second in honours in the Major Examination, and some years ago was a lecturer in pharmacy. At the time of his death he was a member of the Committee of the Cambridge Pharmaceutical Association. He was a prominent Wesleyan of Cambridge and district, was a former circuit steward, and at the time of his death held the post of Society Steward. The late Mr. Parson was regarded as a man of the soundest judgment, and his high integrity gained many friends and widespread respect.

White.—On August 17, Thomas White, Chemist and Druggist, Liverpool. Mr. White was a member of the Pharmaceutical Society.

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Bell, Bowness, Calvert, Carles, Cole, Corfe, Cowap, Daniel, Davies, Doe, Ferrall, Flint, Gwinn, Harvey, Hollingworth, Hornby, Horsfield, King, Lomax, Lothian, Mackay, Moore, Nicholson, Parker, Ridde, Rutherford, Saunders, Smith, Taplin, Tate, Turner, Warrand, Willox, Wilson, Wright, Young.

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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, August 27, 1903.

The Dublin Chemists' Assistants have changed the name of their Association for the more comprehensive title, "The Irish Chemists', Assistants', and Apprentices' Association."

The Torquay Chemists' Association approves of the Pharmaceutical Council's decision regarding a Compendium of Medicines. A resolution to that effect was carried at a recent meeting held in Torquay.

For Vaccinating and Prescribing, a writ has been issued, so it is reported, against a Dublin pharmaceutical chemist. The Apothecaries' Hall of Ireland considers these practices are against the law.

When to Stamp Medicines and when not to stamp them is explained concisely in an editorial article, in which the present position of chemists with regard to the Medicine Stamp Duty Act is set forth.

Students Should Read this Number with even more interest than usual. Herein they are instructed how to become qualified to relieve all branches of suffering humanity as well as lame horses.

A Competition for Students is announced in this issue. The object is to encourage apprentices to study systematically the various subjects of the pharmaceutical curriculum during their period of pupilage.

The Dispensing Difficulty is being reasoned out like a problem in Euclid. Definition i. (*vide B. M. J.*) A Dispenser: "A person whose work is limited to making up practically the same medicines for the same doctor every day of his life."

Shebeening as a Side Line for chemists is not to be recommended, as it may prove unprofitable. A son of Galen, residing in the granite city, finds himself £16 out of pocket as a result of what the Baillie considered an objectionable adjunct to pharmacy.

For Selling Dutiable Medicines to which stamps had not been affixed, a Hanley herbalist this week appeared before the magistrates. The summonses were withdrawn, the defendant having arranged terms with the Somerset House authorities.

Cooper's Sheep Dip has been held to be a "patent medicine" by the magistrates at Ballinasloe Petty Sessions. An Irish definition of a crab is "a red fish which walks backwards," nevertheless, the crab is not a fish, is not red, and does not walk backwards.

Things in Town are Quiet just now. The House of Commons is closed to callers, Big Ben's clock-face is being cleaned, and the painters are in at 17, Bloomsbury Square The Society's Library and Museum in London will be closed during the first fourteen days of September.

Milk of Sulphur containing 29 per cent. of calcium sulphate was sold by a Hampshire chemist to an inspector under the Sale of Food and Drugs Acts. No fine was inflicted by the Bench before which the incident was related, but the sum of £1 6s. 6d., costs of the proceedings, was debited to defendant.

Our American Cousin has an article all to himself this week. "In the backwoods," says the writer, "the physician fills his own prescription from necessity, and the pharmacist who has not a prescriptionless remedy at hand for the smashed finger of the logging camp man is apt to be the unwilling cause of a funeral."

The Revision of the Major Examination is discussed in this week's Journal by the principals of several schools of pharmacy. The general idea seems to be that some change should be effected in the examination, though there is no definite agreement of opinion as to what the alteration should be. Post-graduate courses of study are also referred to.

The Markets in Drugs and Chemicals remain exceedingly quiet. There are few changes to record, and very little business has been transacted.

PHARMACEUTICAL EDUCATION AND APPRENTICESHIP.

However much in some respects the opinions of pharmacists have tended to change in recent years there is one aim which has ever maintained a foremost position among the ideals that inspire all who are worthy to be classed as workers for pharmacy in Great Britain. It may be—some pessimistic persons say it is the case—that the salvation of the calling is as far off as ever. But all acknowledge that the material advancement of pharmacy is the end to which unsparing efforts should be devoted, and most thoughtful persons are agreed in considering the education of the pharmacist as the most important of the factors likely to bring about so desirable a consummation. And this feeling does not end merely as a pious opinion; it is gradually being made the basis of sound and practical work. Educational clauses in Pharmacy Bills, increased scope and higher standards in the pharmaceutical examinations, proposals for the radical reform of the Major Examination, renewed suggestions for post-graduate lectures, recognition of pharmacy by some of the universities; all these things show that the Pharmaceutical Society and its members are in earnest in their endeavour to keep abreast of the times in an age of great educational progress. The latest evidence of this fact will be found in letters received from several teachers of pharmacy and published in this week's Journal.

Another important development which must be recognised, although the gravity of its possible consequences may have been over-rated, is the continued and increasing scarcity of apprentices in the provinces. A number of circumstances have been cited as contributory causes, all of which, if it be considered necessary to find a remedy, will require thoughtful consideration in the near future. It has been stated, and the statement may here be repeated for what it is worth, that those pharmacists who are willing to give their pupils a proper training in pharmacy, instead of relegating to the latter the merely mechanical work and the routine drudgery of the shop, find no difficulty in obtaining suitable young men. According to Mr. R. H. Jones, himself a close observer of modern tendencies, the three years' training in the translation and dispensing of prescriptions, required by the bye-laws, is frequently a formality of the most perfunctory kind. Some of the younger generation of chemists and druggists would fain have the three years' apprenticeship abolished root and branch. But while it is at least doubtful whether that would necessarily bring more recruits to the ranks, it may be regarded as certain that, if any such course were adopted, the pharmacist of the future would be less of a man of business than in the past. In his presidential address delivered this month to the American Pharmaceutical Association, Dr. George F. Payne forcibly stated that "a college graduate may be well versed in pharmacy, chemistry and botany; he may be able to pass a good State Board Examination; he may be a safe and competent prescriptionist, and his professional work may be first-class, yet he may make a failure as a drug-clerk. . . . . Colleges of Pharmacy and State Boards of Pharmacy are not devised for the development or examination of expert salesmen, but of competent pharmacists."

It may be presumed that when the three years' apprenticeship was made a condition precedent to the Minor Examination, the principal object in view was that which has animated so much of the policy of the Pharmaceutical Society and pharmaceutical legislation generally in the past, namely, the greater safety of the public. Were this the only good purpose served by the system of apprenticeship, which, as a matter of fact, in most cases is still something much more than a perfunctory formality, the whole question might call for full and early consideration. But of equal or greater importance is the undoubted fact that a properly conducted apprenticeship does turn out a capable man of business, as well as a student with a mind prepared to assimilate readily the theoretical details of those sciences which are included in the pharmaceutical curriculum. Few developments could be worse for pharmacy in the future than that chemists should become, as Cecil Rhodes said of university professors, children in business matters. The pharmacist of the future, if he is to make a living, must be, in the picturesque language of the United States, a success as a "drug-clerk" as well as a competent "prescriptionist." Failing the division of pharmacists into two grades, at the most an extremely unlikely event, the British chemist and druggist must remain a hybrid individual who receives a mental training of the most advanced character, and yet is obliged frequently to minister to the needs of himself and his neighbour by selling over the counter of a shop many packets of other men's medicines of unknown composition and doubtful virtue. But with all the urgent necessity for commercial training and business acumen, the moral for the young pharmacist is, first, to acquire knowledge of his profession; and, secondly, to turn that knowledge to material advantage. The Baconian epigram retains all its original force: "Crafty Men Contemne Studies; Simple Men Admire them; And Wise Men Use them."

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CHEMISTS AND MEDICINE STAMP DUTY.

There is no fresh development to record this week with regard to the Medicine Stamp Duty Act, but the interest taken by chemists and druggists in the Board of Inland Revenue's recent change in practice shows no signs of abatement, and, for the guidance of those readers of the Journal who find a difficulty in determining whether their labels for medicinal preparations render the articles liable to stamp duty, the conditions under which liability is incurred are here briefly re-stated. At the outset, it is necessary to bear in mind that no claim to medicine stamp duty arises in the case of simple drugs—even if proprietary rights be claimed, or if the drugs are recommended for the prevention, cure, or relief of any ailment—when the drugs are sold without admixture by a chemist and druggist or by any person who holds a so-called "patent medicine licence." Thus, powders consisting of acetanilide without any other ingredient may be sold unstamped as "Headache Powders" or "Smith's Headache Powders," and, similarly, other entire drugs may be supplied under proprietary names or with any recommendation the qualified or licensed seller thinks fit to print upon the label. It should be remembered, however, that in case of any difficulty arising, the Board of Inland Revenue may be expected to throw upon the seller the onus of proving that what is sold is an entire drug. Chemists and druggists may, therefore, find it desirable to print the name of the entire drug upon the label in all cases.

Mixtures of drugs, including all pills, tinctures, and other galenical preparations, may also be sold unstamped if labelled simply with the common descriptive names of the preparations. But if in any way held out or recommended for the prevention, cure, or relief of any disorder or complaint incident to or in any wise affecting the human body, compounded preparations must be stamped when sold by a limited company or by any individual except a chemist and druggist or other duly qualified person. Preparations sold by a chemist and druggist only become liable if they are patented articles, or if the seller claims—on the label or in advertisements, etc. —any proprietary rights therein, or if he claims to possess any occult secret or art for mixing, compounding, or preparing them. For example, a chemist and druggist does not incur liability to stamp duty when he sells compound rhubarb pills under that name alone or with a recommendation for the cure or relief of any ailment, but a claim to stamp duty arises if he sells them as "Smith's Compound Rhubarb Pills," or "Compound Rhubarb Pills, prepared only by J. Smith." He is privileged, as compared with a limited company or an unqualified person, so far as the recommendation of known, admitted, and approved remedies is concerned, but in that respect alone.

In order to secure the benefit of the special exemption, the chemist might be required to prove in each case that the preparations sold by him are known, admitted, and approved remedies for the ailments for which they are recommended. But the Board of Inland Revenue has decided to regard as known, admitted, and approved remedies such preparations sold by chemists and druggists as have their composition disclosed. The disclosure may be made by including the names of the principal active ingredients of a preparation in its descriptive title, as in the case of "Quinine and Iron Tonic," or "Compound Rhubarb Pills." In the case of a preparation sold under such a designation as "Cough Mixture" or "Antibilious Pills," it will suffice if the names of the active ingredients also appear upon the label, and that course is recommended to chemists and druggists as the simplest one to follow in most cases. As an alternative, however, the Board of Inland Revenue is prepared to allow an indication on the label that the compound is made in accordance with a formula published in the British Pharmacopœia, or some other well-known book of reference. Such a method of disclosure may be found advantageous in some instances, but chemists should recognise that it is not now essential, in view of the fact that the Board has decided not to insist upon the complete formula being printed upon the label, as was originally announced.

THE DISPENSING DIFFICULTY.

A definition is in itself a harmless and inoffensive thing enough, but two definitions placed side by side make one comparison; which is odious. An excellent example of the effect of this combination of descriptions is to be found in the word-pictures here appended.

A Dispenser.	A Pharmacist
A person whose work is limited to making-up practically the same medicines for the same doctor every day of his life.	A man who opens a shop and announces himself . . . . ready to dispense medicine for all the world.

Whence come these definitions? From the pages of Webster? No. Nor indeed is it to be expected that they would have been sufficiently precise to suit the geometrician who was erroneously supposed to have been born in Megaria. They are culled from the columns of the *British Medical Journal.* The pharmaceutical chemist will not quarrel with this description of himself. On the contrary, his training admirably adapts him to fill the cosmopolitan duties here ascribed to him; but it is doubtful whether the same acquiescent frame of mind will characterise the individual described as one who performs the same duties for the same man until the day when the sphere of action of either himself or his employer is transferred to another world. Consistency is a quality to be encouraged and commended, but it is to be hoped that the medicines made up so repeatedly gather no moss or mould, even though the dispenser obtains the reward which is denied to the rolling-stone. At any rate, such a methodical personage is better to be trusted in a dispensary than the classic individual "who never did the same thing twice."

In many respects the explanations our medical contemporary offers in an editorial comment in reference to misstatements recently made in its columns are fairly satisfactory. At the same time the distinction between the assistant's examination of the Apothecaries' Hall and the qualifying test which a chemist and druggist has to undergo is so great, and the value of the diplomas granted so very widely different, that it was a matter of very great surprise to find medical men in such confusion. With regard to the comparison between the number of mistakes made by doctors and chemists, it is only fair to point out that the number "seven" which was taken as the basis of our calculations was arrived at after a "careful" perusal of the address referred to, three of the cases mentioned being deducted in accordance with Mr. Idris's footnote. The periods covered by the accidents mentioned were the same in both cases; during the first seven months no mistakes were recorded against chemists. This is, however, a matter of very minor importance, and in this respect the opinions of this Journal are at one with those of the official organ of the British Medical Association, for comparisons of mistakes made by doctors and chemists can serve no useful purpose whatever. It is interesting to note that our contemporary says the time for such a change as the separation of prescribing and dispensing is not ripe, and, speaking in a general sense, we do not wish to quarrel with this assertion. But if voluntary arrangements between doctors and chemists are possible in some districts, it is difficult to see why they should not be feasible elsewhere. If such arrangements work well at Margate, at Torquay, and in numerous other towns, why should they not be tried in other districts? It is anticipated that this suggestion, at any rate, will meet with the approval of the *British Medical Journal*, for without the assistance of such a widely read and influential organ the cause which so many wish to further would be very seriously handicapped.

A COMPETITION FOR STUDENTS.

What may fairly be regarded as the weakest spot in pharmaceutical training at the present day is the neglect of systematic study during the period of pupilage. As a result of that neglect, it is not uncommon to find that students approach the various subjects in the pharmaceutical curriculum for the first time when they enter a school of pharmacy to prepare for the qualifying examination. Naturally, the outcome of such attempts to crowd into a few months the work which should have been spread over a much longer period is frequently disastrous, and candidates become discouraged by repeated failure to satisfy the statutory requirements. With the object of improving the situation it is now proposed to encourage systematic study during apprenticeship by instituting a friendly competition among pharmaceutical students. Each week an article will be published dealing with some subject in botany, chemistry, physics, materia medica, pharmacy, or dispensing. Advice will also be given regarding the choice of suitable text-books, in which further information on the topics selected may be found. At definite intervals examination papers will be set in the subjects to which special consideration has been devoted, and students will be invited to send in replies and solutions to the various questions and problems given as tests. The arrangements are not yet completed, but it is hoped that it may be found possible to publish the first article of the series in the next issue of the Journal, together with such further particulars regarding the competition as may be necessary.

AN IDEAL PHARMACIST.

In the current number of the *American Journal of Pharmacy* appears a lengthy appreciation by M. I. Wilbert of John Michael Maisch. While the name of Maisch is known and honoured wherever pharmacy is practised, the lessons to be learnt from a survey of his life's work are of such value that no apology should be needed for summarising portions of Mr. Wilbert's scholarly essay. Maisch was not only thoroughly versed in the sciences of botany, chemistry and pharmacology, but had a good knowledge of zoology, geology and mineralogy. With a working knowledge of several languages besides his own were combined a willingness and ability to impart his knowledge to others. "His published essays number upwards of 400, and are of such a high ethical and scientific standard that they may well be considered a proper and a lasting monument of a life that was spent for the betterment of his fellow men."

Born in Hanau, Germany, in 1831, and deucated in the higher schools of his native city, physical weakness brought to an abrupt termination all his hopes of a university training. "The now seventeen-year-old boy, who had been brought in close contact with the higher ideas and ideals of the more progressive German scholars, was just in the proper frame of mind to be carried away by the agitation for personal rights that swept over the central part of Europe in 1848. It is not surprising, therefore, that we hear of him as having been arrested in a neighbouring State for teaching and believing what was then considered a revolutionary doctrine—the necessity of a united fatherland with a constitutional Government. Like many other progressive Germans who were years ahead of their times, John M. Maisch emigrated to America, where free institutions, such as his fancy had depicted, already existed." His connection with pharmacy began in 1850, when, at the age of nineteen, he became an assistant in a drug store at Baltimore. Throwing himself with energy into the scientific part of his business Maisch became, in 1859, after less important changes of position, superintendent of practical instruction in Parrish's School of Pharmacy, Philadelphia, and two years later he accepted the Chair of Materia Medica and Pharmacy in the College of Pharmacy of the City of New York. Before long, on the personal recommendation of Professer Squibb, with whose firm he had in the meantime become connected, he was appointed Superintendent of the Army Medical Laboratory, about to be established in Philadelphia. Later he held for many years the positions of Editor of the *American Journal of Pharmacy*, and Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy.

The learned societies of which Maisch was an honorary or corresponding member, the various official positions which he held in America, the text-books and scientific articles which he wrote, are alike too numerous to be mentioned here. But prominence must be given to Mr. Wilbert's remarks in connection with the award of the Hanbury Gold Medal in 1893. "It would be surprising, indeed, if as a result of the gigantic amount of original work which he was able to accomplish, and did accomplish, he should not receive some material recognition of its value. . . . The one recognition that must have pleased Professor Maisch greatly, and one that came as a fitting close to his eventful and active life, was the presentation of the Hanbury gold medal for original research in the natural history and chemistry of drugs. This tribute, coming as it did on what was practically the eve of his death, has to us a particularly pathetic interest. It was brought to this country by Mr. Michael Carteighe, the then President of the Pharmaceutical Society of Great Britain, who had expected to present the same to Professor Maisch at the annual meeting of the American Pharmaceutical Association at Chicago, in 1893." But that was not to be, for the medallist died before the formal presentation could take place. Mr. Wilbert concludes his essay by describing Maisch as "an earnest and indefatigable worker, who, without exceptional educational advantages, without rare gifts of genius, and hampered with a marked accent that indicated his foreign birth strove honestly and earnestly to cultivate and improve that portion of the field that was apportioned to him."

THE INAUGURAL SESSIONAL MEETING.

At the opening of the Session of the School of Pharmacy on Thursday, October 1, 1903, at 17, Bloomsbury Square, the inaugural address will be delivered by Mr. Joseph Wilson Swan, M.A., F.R.S., D.Sc. Dr. Swan, who is Past-President of the Society of Chemical Industry and of the Institution of Electrical Engineers, Vice-President of the Senate of University College, London, Chevalier de la Légion d'Honneur, and a member of the Board of the National Physical Laboratory, was born and educated at Sunderland. He was the inventor of the carbon process for making permanent photographs, co-inventor of "Woodburytype," and inventor of the incandescent electric lamp bearing his name. This lamp was, as is well known, the forerunner of all other incandescent electric lamps now in use. The members of the Pharmaceutical Society are indeed fortunate that an opportunity will be given them of hearing so able and distinguished a scientist, and it may with confidence be anticipated that the opening of the Session will be attended as usual by many members and friends. The "Martindale Memorial" Committee has arranged that the bust of the late Mr. William Martindale shall be unveiled on the same occasion, when the die for the Memorial Medal will also be offered formally to the Pharmaceutical Society. Finally, M. Eugène Collin, to whom the Hanbury Gold Medal has been awarded this year for his researches in the natural history of drugs, will personally attend the meeting to receive that medal.

ALUMINIUM IN FLOWERING PLANTS.

Hitherto aluminium has not been found in phanerogamic plants, or at most only in minute traces, although Cryptogams appear to use it as a food material. Mr. H. G. Smith, of Sydney, however, has recently found it in one tree belonging to the Proteaceæ, viz., *Orites excelsa*, R.Br., in even greater abundance than it is found in any of the Cryptogams. In a paper read before the meeting of the Royal Society of New South Wales, Mr. Smith showed that this tree uses aluminium almost to the exclusion of other mineral elements, and that the aluminium is deposited in cavities and natural fissures as a basic succinate. We hope to be able to give fuller particulars of this interesting discovery in a future number of the Journal.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Detection of Dissolved Oxygen in Water.

To detect the presence of dissolved oxygen in water, A. Kaiser makes use of a solution of ferrous sulphate in boiled water acidulated with sulphuric acid. This solution is introduced by means of a pipette into a flask filled with the water to be examined; an excess of caustic potash solution is then added, the flask stoppered and shaken. If the water be rich in oxygen, the precipitate remaining in suspension immediately becomes of a yellow colour, ferric hydroxide being formed. If little oxygen be present, only a greenish precipitate of ferrous hydroxide is formed, and with water free from oxygen, the precipitate remains of a greenish-white colour. Small quantities of nitrates or nitrites present do not interfere with the reaction.—*Journ. Soc. Chem. Ind.*, after *Chem. Zeit.*, **27**, 663.

Causes Influencing the Formation of Essential Oils.

E. Charabot and A. Hébert have studied the influence of the external medium on the formation and evolution of odoriferous compounds in plants. They found, when peppermint was manured with various inorganic salts, that ammonium chloride produced the greatest effect in regard both to the weight of the crop and the yield of essential oil. Potassium and sodium chlorides had but little influence. Sulphates, especially those of manganese, potassium, and ammonium, as also sodium nitrate and disodium phosphate, favoured the production of odoriferous compounds. The addition of inorganic salts accelerates the diminution of the proportion of water in the plant; it also favours the esterification of the menthol. There is a clearly shown relation between the diminution of the proportion of water and the esterification, not only of the menthol, but also of the volatile acids in the plant. Thus, the chlorophyllian function, by provoking transpiration (which determines the proportion of water removed), favours esterification.—*Comp. rend.*, **136**, 1678, through *Journ. Soc. Chem. Ind.*

Employment of Lead Dioxide in Analysis.

An aqueous solution of sulphuretted hydrogen or of a sulphide is decomposed in the cold by lead dioxide, with formation of lead sulphide. Alcoholic solutions may be freed from traces of hydrogen sulphide by digesting for three hours with excess of lead dioxide. St. Bogdan makes use of this reaction for the removal of the excess of ammonium sulphide, which is present in solution after prescription, as sulphides, of the metals which are not precipitated by hydrogen sulphide in acid solution. On adding powdered lead dioxide to the solution, the ammonium sulphide is decomposed, ammonia being formed, and lead sulphide and sulphur precipitated. The reaction takes place in the cold, but it is desirable to heat on the water-bath for a few minutes. The precipitate does not retain any salts of alkaline earths which may be present, and the solution, after filtering, is ready, without any addition of ammonia, for testing for the metals of the next group (calcium, barium, and strontium).—*Bull. Soc. Chim.*, **29**, 594, through *Journ. Soc. Chem. Ind.*

Detection of Nickel and Cobalt in Mixtures.

By modifying the method of Rosenheim and Huldschinsky for the quantitative determination of nickel and cobalt, F. W. Dootson has devised a simple qualitative test. The sulphides of the two metals separated in the usual manner are dissolved in a small amount of hydrochloric acid and a few drops of nitric acid, the solution diluted, treated with ether, and a dilute solution of potassium or ammonium thiocyanate (sulphocyanide) added gradually, till the ethereal layer acquires a distinct colour. The mixture is vigorously shaken after each addition of thiocyanate solution. The double thiocyanate of nickel and potassium or ammonium is easily soluble in ether; the cobalt compound is much less soluble, except in presence of methyl alcohol. If nickel alone be present, the ethereal layer is coloured pale rose to blood red, according to the concentration of the solution; if nickel be absent and cobalt present, the ether is coloured blue, and the coloration becomes considerably darker after the addition of some methyl alcohol. If both metals are present, the nickel reaction is observed at first, and then on cautious addition of methyl alcohol, the presence of cobalt is indicated by the formation, after standing, of an intense blue colour at the zone of contact of the ethereal and aqueous layers.—*Proc. Cambridge Phil. Soc.*, **12**, 125.

Distinctive Reaction for Cryogenine.

Manseau finds that cryogenine when warmed with 1 or 2 C.c. of hydrogen peroxide gives a marigold yellow colour, which changes to orange red and finally red. Although cryogenine is but sparingly soluble in water, the reaction is sufficiently delicate to detect it in aqueous solution.—*Répertoire* [3], **15**, 212.

Laticiferous Tubes in Conifers.

Chauveaud calls attention to the presence of laticiferous tubes, some simple, others branched, in the liber of conifers, whilst the resinous fluids are poured out of the cells in which they are formed, with intercellular resin-canals; the latex remains within the cells. The laticiferous tubes are specially seen in the young seedling plants.—*Comp. rend.*, through *Gard. Chron.*, **34**, 59.

Corosos Nuts.

The name Corosos, or Corozos, is apparently applied to several fruits, although in this country usually applied in commerce to the palm seed yielding vegetable ivory, *i.e.*, *Phytelephas macrocarpa*. The fruit of *Elæis melanocarpa*, Gaertn., is called on the Pacific seaboard *Corozo colorado*, and on the Atlantic side of South America the fruit of *Attalea Cohune*, Mait., is known as *Corozo gallinazo*. — *Journ. d'Agricult. Trop.*, iii., 176.

Titrations with Potassium Iodate.

When potassium iodide is titrated with a solution of potassium iodate in the presence of a great excess of hydrochloric acid, the following reaction takes place :—

$$2KI + KIO_3 + 6HCl = 3KCl + 3ICl + 3H_2O.$$

When chloroform is added, the reaction can be used for volumetric analysis of various salts, as the immiscible solvent becomes colourless at the completion of the reaction, while the supernatant solution turns bright yellow from the iodine chloride. L. W. Andrews has applied this to the volumetric determination of free iodine, chromates, chlorates, arsenious acid, antimony, and ferrous salts. By this method it is possible to titrate the arsenic in Paris green directly without preliminary separation. For the determination of chlorates the following is the process described :—To the solution of the chlorate, add solution of known strength of pure potassium iodide in a glass-stoppered bottle, and an amount of pure fuming hydrochloric acid at least one-third greater than the volume of the solution. Close the bottle tightly, and allow it to stand fifteen minutes after shaking, then add 5 C.c. of chloroform. If the colour of the chloroform be then pale violet, an insufficiency of iodide has been added, and the process should be begun again. A decinormal solution of potassium iodate is then added with intermittent violent shaking until the chloroform becomes colourless, the end-reaction being well-marked. Each cubic centimetre of the decinormal iodate solution is equivalent to 2·782 Mg. of (ClO_3).—*Journ. Amer. Chem. Soc.*, **25,** 756.

Precipitation of Calcium and Magnesium.

J. M. Stillman and A. J. Cox have carried out a number of experiments with the object of determining some of the conditions which modify the usual processes for the purification of water for boiler-feed purposes. It has been found that the presence of sodium chloride has no important influence on the precipitation of dilute solutions of calcium chloride by sodium carbonate. Sodium sulphate has, however, a distinct influence in preventing such precipitation. Sodium chloride and sulphate diminish the precipitation of magnesium by sodium carbonate, the sulphate exerting a greater influence in that direction than an equivalent quantity of the chloride. Sodium chloride also appears to have some influence on the precipitation of magnesium by calcium hydroxide, but the precipitation is nevertheless complete. In the parallel tests with sodium carbonate, the amount of magnesium held in solution by sodium chloride is less in proportion to the entire amount present than is the case in experiments with solutions of somewhat greater concentration. In the more dilute solution, only about 6 per cent. of the magnesium present was held in solution, while in the less dilute about 15 per cent. was held in solution by ten molecules of sodium chloride.—*Journ. Amer. Chem. Soc.*, **25,** 732.

Determination of Carbon Dioxide in Drinking Water.

F. B. Forbes and G. H. Pratt have compiled a paper dealing with the various methods in use for the determination of free carbon dioxide in water. From comparisons made by actual experiment, the authors deduce that the Seyler method tends to give higher results than the modified Pettenkofer method; that these higher results are nearer the true value is shown by results obtained by the boiling method, and also by experiments on standard solutions. The Seyler, or Lunge-Trillich method, for details of which the original article should be consulted, has the advantage of convenience and rapidity of execution, and any disturbances due to the presence of magnesium salts are avoided. The determination, however, of the free CO_2 by titration with phenol-phthalein as an indicator is a matter of considerable uncertainty and, under some conditions, of difficulty. In spite of that, the authors consider the Seyler method the most satisfactory in the hands of an experienced operator.—*Journ. Amer. Chem. Soc.*, **25,** 742.

How Alcohol Preserves Chloroform.

Although the preservative effect of alcohol on chloroform has been long known, the precise nature of its action does not appear to have been investigated. Adrian finds that, as a matter of fact, it does not obviate decomposition, but it prevents the formation of objectionable decomposition products, forming instead compounds which are harmless. Thus, instead of free hydrochloric acid and carbon oxychloride there are formed in chloroform containing alcohol trichloral and various esters of hydrochloric acid. The first stage of the reaction is the oxidation of the alcohol and the formation of free hydrochloric acid,

$$C_2H_5OH + 2Cl = CHO{\cdot}CH_3 + 2HCl.$$

The aldehyde thus formed combines with avidity with free chlorine until finally trichloraldehyde, $CCl_3{\cdot}CHO$, is formed. The hydrochloric acid combines with the alcohol, as long as the latter is in excess to form esters. As a rule the addition of 1 C.c. of alcohol to the litre of chloroform is sufficient to preserve it.—*Journ. Pharm. Chim.* [6]. **18,** 5.

OUR AMERICAN COUSIN.

BY REGINALD WILLIAMS.

Civilisation gives us much, and as the world, revolving, carries us to our destiny, we daily discover many things new under the sun. Explorers seek out lands, astronomers discover worlds, and the profound men of the laboratories seek new domains within our own. For certain minds, however, there will always remain a pleasure in introspection and in retrospection. And, while Nature unveils itself to science, with crab-like regress, in the ponderous tomes of the past, history can be seen to unveil the world, for, the farther back we go, it divests it one by one of its garments of opportunity, occasion and necessity, till at last we come to the primitive man and his beauteous rib in the Biblical garden.

Even thus far back must we go for the origin of pharmacy, for here in the Garden of Eden was filled the first prescription of a fig-leaf application for a dietetic indiscretion.

This holy and wholesome reflection often comes to my mind when, in these degenerate days, I see a little boy betake himself to syrup of figs to soothe the clamorous reproaches of a too incipient apple, and the thought now comes to me when I start to write of "Our American Cousin," for in many parts of his immense country things pharmaceutical are in a state of such simplicity that they can only be described as primæval.

I will reserve my "genesis," however, for a future article, and for the present will deal with a few phases of the city chemist, or, as he prefers to call himself, druggist. If one is at all familiar with the American spirit of "git up thar and git," it is not at all necessary to be the seventh son of a seventh son to discern in that word "druggist" the American's frank truthfulness and straightforwardness, his absence of nonsense, and his love of money. For the very name is chosen with a view to the dollar. It is an advertisement. He is unwilling that anyone for a minute shall lose sight of the important fact that he sells drugs, so he calls himself

Druggist,

to make sure. And he blazons it in electric lights, flares it on a million handbills, prints it in your morning newspaper and on his visiting card, and goes asleep with his ear against a telephone tube to tell you all about it, in case you should happen to need a blue pill in the 'witching hour. For, first, last and all the time, the American is an advertiser. He knows what the public is, and realises that, if he is to be of it, he must be in it, and, knowing that a gong stuns flies, he makes by advertising all the clamour he can. His trade journals are full of the gentle art, and his district associations consider the subject in season and out of season.

Now, all this appears unseemly to the staid Englishman, whose profession has about it the aroma of time and the dignity of tradition. But the American druggist has no traditions; he has no etiquette for set occasions, and no occasion at all for etiquette, and his one besetting thought is that of the "all-fired cussedness" of the competition that surrounds him. While "competition is the life of trade," the saying holds true only of legitimate competition, and it can be said of our American cousin that he has no ordinary competitor to deal with. At first, in the early history of the trade, he had for rivals his brother druggists. Even when they combined for the purpose of killing him, that only made the game more interesting, and when the number of his legitimate rivals increased to an absurd extent, he was still content to abide by the law of the survival of the fittest. Now, however, in common with the jeweller, the dentist, and the wild animal dealer, he is suffering rude shocks by the encroachment of the American "department store" into his own chosen field.

These "department stores" combine under one roof the energies of scores of smaller shops, and whereas formerly they were devoted to the sale of dress goods, their activities now embrace all those commodities for which there is a steady demand, whether shot-guns, greengroceries, or oil paintings. If "there's money in it," the new "department" is initiated. To-day the drug store forms a department by itself in these big shops, and the private owner of a chemist shop is deprived of profits, of trade, and, consequently, of his peace of mind.

This question is the main subject of discussion, and "Johnathan, druggist," is not a happy man in these days. Recourse has been had to legislation, but the department store's purse was bigger, and the struggle on every point has been an unequal one. Now, in self-defence, the drug stores are doing the very thing that so offends them in their enemy—adopting departments. One by one they have taken to their counters articles foreign to pharmacy, and it is true of two out of every three chemist shops in New York that were they to depend upon legitimate custom they would no longer have a *raison d'être*. In other cities, and especially in the sparsely-settled districts of the country, the drug feature becomes of less and less importance. In New York, however, there is still a remnant of the old guard sticking to the guns and doing a "prescription business only," and the tendency of the doctors is to prefer the conservative druggist. The "old guard," however, has an almost totally foreign membership. The Germans form the element that "hold tight," and they seem to be making a good thing of it.

The field seems to be clearing up somewhat, though the business is still in the transition period. However, as things stand now, I would not be surprised to find two types of druggist crystallised by custom—the department druggist and the prescription druggist. Even now they exist side by side, and both types have their uses, the prescription trade all going to one, and the men who want cigars, razors, leather goods, lawnmowers, etc., etc., all going to the other. I, myself, would like to see this come to pass. In Germany the law keeps down the chemists' shops to one for every 10,000 of population, and other lands have similar restrictive legislation. In New York anyone can start a shop provided he has the easily-acquired degrees or else the money to buy a shop and have a "junior" run it. And, as I said before, there are not enough clients to go around. If, then, the division is to be, the sooner it is accomplished and the sooner the separate parties get together and work together, the better it will be for all. What I have said of New York applies to all of the large cities of the United States.

The "dispensing physician" and the "prescribing apothecary" balance each other in the States as well as everywhere else; but it must be said that the relations of doctor and druggist are very amicable ones indeed. In the backwoods the physician fills his own prescription from necessity, and the pharmacist who has not a prescriptionless remedy at hand for the smashed finger of the logging-camp man or the wound of the hunter is apt to be the unwilling cause of a funeral.

As to commissions, I have heard here, there and everywhere that there was once a chemist who promised 5 per cent. of his total receipts to a doctor who sent him trade. They are still on the track of that bold, bad pair, and they talk of them in the United States as well as elsewhere. They frown down on that sort of thing, particularly, in the U.S.A. The dispensing chemist of New York, as well as he of Chicago, San Francisco, and of the other cities of the States is particularly pleasant to the physician, nothing more. Many, in fact all, drug stores have a back room. And this back room is quite frequently turned into an extemporaneous club-room by the doctors of the district. They sit them down therein, especially of the winter evenings when the fire is bright, and they talk of their days of school; and there's a big black barrel and a wee little glass beside it. On the barrel one may read in two-inch letters:—

"POISON."

What a terrible thing it would be if they should get poisoned!

HOW TO STUDY FOR THE MINOR.

BY S. W. WILSON.

Students coming to schools of pharmacy in London, with a view to passing the Minor Examination, should be careful not to underestimate the amount of work to be done. It is quite impossible to assimilate the required amount of knowledge in a short course of instruction lasting for three months, and even when the longer course, provided by the Council of the Pharmaceutical Society in its well-equipped School, is taken by the student, it will be found that an elementary knowledge of the various subjects to be learnt is a great help in following the courses of instruction given in the School. Many students who take this longer course of nine months imagine that they have plenty of time to spare, and that it is unnecessary to begin really serious work at the outset. No greater mistake can be made, and the man who wishes to be successful at his examinations will carefully follow all his lectures and practical work from the very beginning.

Students frequently fall into another serious mistake; they seem to fancy that if they attend the lectures, make a few rambling notes and go through the practical exercises in the laboratory, they are doing all that can be expected, and will be sure to pass their examination. The fallacy of such an idea is quite obvious; every man must learn his work for himself, and however good the lectures and teaching may be, students must make careful notes at the lectures, and must supplement them by reading the subject attentively in their text-books in the evening. A few words as to making of lecture notes may not be out of place. Students should not attempt to make a verbatim report of a lecture; what is required is to seize the chief points in the lecture, to commit them to writing, and to add details of experiments and sketches of apparatus.

When an experiment is going on, it is common to see students gaze at the lecturer or his assistant while their hands and pencils are idle; instead of doing this the time should be spent in sketching (never mind how roughly) the apparatus, and indicating upon the diagram what the various pieces of apparatus contain. By so doing students will find themselves acquiring knowledge of an infinite variety of details regarding the setting up of apparatus and the methods for best carrying out experimental chemistry, and this will all be done without any additional demand upon the student's time. It is certain that there is no better method of directing attention to detail than to make an effort to draw the subject under consideration. This remark is applicable with equal force both to chemistry and botany. How often do we hear students grumble at the variety of terms used in botanical science? These terms may be learnt with much greater ease if, at the practical classes, careful drawings are made of the various morphological structures and the correct scientific names are used to label the respective parts.

The subject of physics seems to offer special difficulty to most students. It should not be forgotten that physics is a mathematically exact science, and it is well, in consequence, to learn by heart the definitions given for the various fundamental ideas which are dealt with under the heading of physics. If, for instance, a student learns by heart that "density is the mass of unit volume," and he has previously learnt in a similar way the meaning of "mass," and the fundamental physical dimensions of time, space, and matter, he will never find any confusion arising in his mind as to the relation existing between density and specific gravity.

In dealing with practical chemistry, careful notes should be made of all experiments, and when preparations are being made sketches of all apparatus should be added. If this is carefully done, the record of practical work will be found to form a very valuable place of reference for all manner of little details which cannot easily be found in text-books, and will prove of great service in making a rapid revision of the practical work immediately before the examination.

All notes should be made in ink, and should be put straight into the note-book. It is a mistake to copy voluminous notes at night; the time at disposal in the evening should be spent in carefully comparing the lecture notes with the text-book, and in adding any points of interest which may have been overlooked at the lecture. With this end in view, it will be found convenient to write the lecture notes on one side of the page only, and to reserve the other side for sketches of apparatus and additional notes.

A student working on these lines cannot fail to be successful; but he must remember to work steadily from the very beginning and keep his mind upon the subject in hand.

HOW TO PASS THE MINOR IN BUSINESS.

BY ONE WHO HAS DONE IT.

I am venturing to suggest a scheme of work for the Minor during apprenticeship, which, if carried out, would make the percentage of passes much higher than is at present the case, without necessitating the expense of a course at college, and at the same time doing away with the three or six months' "cram" which is adopted by many. I was apprenticed to a London chemist when about sixteen years of age for four years (indoors). Having passed the Cambridge local examination, there was no necessity to be troubled with the pharmaceutical preliminary. The first year of my apprenticeship I did practically no studying, but learnt as much as possible of the B.P. during business hours. A detailed study of it, however, I at once decided to defer to a later date, being quite incapable of understanding the chemical reactions and botanical terms involved.

In my second year I had two evenings off per week from six o'clock. I went to the nearest Technical Science School and joined the elementary classes in chemistry and physics. It is a great mistake to think of these classes as a "bore." In the first place they are only held in the winter; secondly, the student is sure to meet with desirable acquaintances; thirdly, the lectures are invariably experimentally illustrated, and it must be granted that experiments are interesting to everyone (if they come off), and, lastly, he has the satisfaction of knowing that he is doing work which will save him much trouble in a few years' time. At the end of the course the South Kensington evening examinations are held, and, if successful, the student can choose what books he likes (not exceeding a certain sum as prizes. In my own case I chose books that would be necessary) in the next session.

The next year the subjects I took up were advanced inorganic chemistry and elementary botany. The latter subject was in every way taught as practically as possible; we permanently mounted sections cut by ourselves, and in the spring excursions were arranged into the country for studying natural orders. The inorganic chemistry of the Minor is completely covered by the advanced course, both as regards the theory and practical; moreover, every experiment that can be at all readily performed is done on the lecture table, and makes a far more lasting impression on one's mind than any amount of reading will do. In my last year I took elementary organic chemistry and advanced botany. The chemistry of the B.P. I could now readily follow, and gradually went through the whole of it, any little point that I could not understand being readily explained by our chemistry teacher. Thus, by the time my apprenticeship was over I had completely covered the Minor syllabus in chemistry and botany, and had a fair knowledge of the B.P. The subjects I had now to deal with were materia medica and pharmacy. Prescription-reading I had no reason to be troubled with, as I had been accustomed to see a fair number of prescriptions daily, and used occasionally to write a few out in full Latin. Ince's 'Latin Grammar' contains all the information that is wanted on the subject. For the study of materia medica I wrote to a wholesale house for the necessary specimens—the whole of which they sent me free of charge.

I was now out of my apprenticeship, but by request remained on for a month or two as junior assistant. The next berth I took we had one evening off a week at five, closed every night at 8.30, two evenings on duty till eleven, and one Sunday in three. I remained here through the summer and beginning of winter (about eight or nine months). During this time I went through all the materia medica specimens two or three times with a good text-book—mostly during the evenings and Sundays on duty. I also obtained a copy of White and Humphrey's 'Pharmacopedia.' This work is invaluable to a student who is not attending any lectures on pharmacy—the why and wherefore of every B.P. preparation is most lucidly explained, and although it contains much that is not wanted nor expected from a Minor candidate, it is not difficult to discriminate.

I had now been completely through the Minor work, and it only required revision to be brought up to examination standard. I was nearly twenty-one, and wished to take the examination directly I attained that age. I resolved to take a berth where I could have three evenings off a week to attend my old classes again. An advertisement in the Journal Inset brought me about twelve replies. The one I accepted was an outdoor berth with three evenings and two afternoons off. Other days the hours were nine to nine (an hour for dinner, and three-quarters of an hour for tea). The work was, however, extremely light, and I could easily read for two and a-half hours after getting away at night. My three evenings off I attended the same institute for practical chemistry and botany (combined fee for the two subjects, including materials, 18s.). In the afternoons I made several excursions to the Square for materia medica. Mr. Holmes was always most willing to show and explain any varieties of specimens, such as the cinchonas, opiums, etc. I went methodically through the B.P. with the same work as before. For abstract pharmacy I found Lucas's book contained all necessary information.

Four months later, being twenty-one, I entered for the Minor. On the first day I had the following:—Chemistry (1) By means of the N/10 thio. determine the strength of the iodine solution (which I found to be exactly N/10), and from this determine the amount of arsenic in the solution provided. I did three titrations, and did not get a difference of a decimal point. (2) Determine the constituents of the metallic salt provided, and prepare a crystalline specimen of its chloride. The salt was lead nitrate. I finished the paper at 12.30, and was complimented by the examiner on my crystals.

In the afternoon I had five things to make:—(1) Glycerin amyli, 100 Gm.; (2) mist. ol. ricini, ℥iii.; (3) sol. cupri sulph., 0·4 per cent., ℥iii. Ft. collyrium; (4) glycerin belladonnæ, ℥i.; (5) ℞ Sodii bicarb., ʒii.; bism. carb., ʒi.; tinct. card. co., ʒii.; inf. aurantii co., ad ℥vi. ℥ss. t.d.s.

I finished soon after four, and was told I might go by the examiner. The next night I received a communication asking me to present myself a fortnight later for the second day. This seemed rather a long time, but gave me plenty of time for revising doses, strengths, etc. My first subject was prescription-reading. I had to translate an English prescription into Latin, and a Latin one into English fully. How much formalin, 40 per cent., should be put in ℥viii., 1 in 1,000? How should the following prescription be dispensed?—℞ Liq. arsenicalis, ʒiii.; liq. strychninæ, ʒiii.; aq. ad ℥iii. ʒi. t.d.s. I said liq. arsen.

hyd. should be dispensed, as otherwise strychnine would be precipitated by the alkaline arsenic solution. Various doses and several autograph prescriptions came next, after which I was told to sit down. My next subject was chemistry. I was taken on vapour densities, preparation of sodium thiosulphate, magnesium and its salts, and preparation of acetic ether. Why is sodium thiosulphate not called thiosulphite? What elements do you know similar to sulphur?

My next subject was pharmacy. How is Donovan's solution prepared, and what is its strength? What is a percentage solution? How is liq. sodæ arsen. prepared, what is its strength, and why is the salt directed to be recently rendered anhydrous? How much opium is there in tinct. opii, ℥i.? This I had to work out, but was told I ought to know it without working it out. What is the idea of tinct. quillaia in liq. picis carb.?

My next subject was materia medica. I was shown cuttlefish, aconite leaves, asafetida, benzoin, cascarilla, myrrh, and aconite root. Was the latter the official variety or not? What did it contain? If myrrh was triturated with water, did it form an emulsion? Why? Does benzoin form an emulsion with water?

My last subject was botany. I was shown a piece of sea holly, and asked the natural order. A piece of broom, and what was the natural order. The leaf of an umbelliferous plant showing well the sheathing petiole. To what classes of the vegetable kingdom do these two plants belong (a branch of *Pinus* and *Marchantia*)? The slide I had to recognise was the transverse section of a leaf, and was asked to describe it in my own language, and not that of a text-book. Finally, I was asked to describe respiration and transpiration. Five minutes after this subject was over I was congratulated on passing a very satisfactory examination. Thus I had passed the Minor, practically my only expense had been the fee, and at the same time I had done the work thoroughly.

NOTE ON THE METHYL ORANGE INDICATOR.

BY F. H. ALCOCK.

The strength of the official solution is 0·4 Gm. in 200 C.c. of a mixture of alcohol (one volume) and distilled water (four volumes). Many students fail to get concordant readings with this solution, and Mr. Sutton suggests that their failure is due to the use of too strong a solution of this indicator of acidity. He commends 1 Gm. of the powder in a litre of distilled water. It is generally known for what solutions it is good and for what solutions it is not suitable. In order to avoid excess of the amount of indicator, as much as could be held on an ordinary glass rod when dipped to the depth of an inch into the official solution and stirred into the liquid to be titrated has been suggested, but it is an indefinite method. In some cases the B.P. tells us the amount of dilution to be adopted, but in no case does it state the volume of indicator to be used. With a view to overcome this real difficulty, the official solution was diluted in the proportion of 1 C.c. with 99 C.c. of official solvent, and it was found that 1 C.c. of this diluted solution was sufficient to add to 70 C.c. of tap water, so that when titrated with N/10 sulphuric acid the transition from the alkaline state to the acid state and back again was most easily seen in the daylight. It is therefore suggested that the official solution requires extensive dilution, and that a definite volume of such a solution should be officially stated for each titration where its use is prescribed. As a B.P. example the official titration of borax from 1 to 2 C.c. of the above weaker solution was found to be enough with from 50 to 100 C.c. of water.

PREPARATION FOR THE JACOB BELL AND MANCHESTER SCHOLARSHIPS.

BY F. G. C. WALKER.

I do not intend in this article to give any very lengthy dissertation on the subject, as I feel that a great part of it would only be repeating what has already appeared in many excellent articles in the *Pharmaceutical Journal*. I hope, however, that the students to whom it is intended to be addressed may possibly pick up some hints which may help them in their preparation.

In the first place, a few general remarks concerning the scholarships, particularly the Jacob Bell, may not be out of place. The conditions and particulars of the scholarships are given in the Calendar of the Society, published yearly. In the Jacob Bell examination the successful candidates (two each year) obtain free tuition at the "Square" during the Minor course, and, in addition, a grant of £30. Furthermore, on application, they are granted free admission to the ensuing advanced course. Altogether, therefore, the actual value of the scholarship is about £80. The advantages gained by studying at the "Square" are too obvious to need much remark, more especially when entering on the footing of a Bell scholar. The very best tuition in all the subjects necessary to a pharmaceutical career is obtained, and this, added to a previous groundwork of knowledge, gives the student a distinct advantage over other competitors in his calling.

Under the present scheme of examination it will be seen that the most important subjects, anomalous though it may seem, are not the scientific subjects. Undoubtedly the most important subjects are arithmetic and Latin, the former, perhaps, most of all. I believe that success or failure may very often rest upon the correct or incorrect answer to one of the problems in arithmetic. In addition, though, a high standard of excellence is required in the remaining subjects.

It would perhaps be as well to consider each subject in the order laid down in the syllabus, giving a general idea of the scope of the subjects and the most suitable books for preparation.

Latin.

The first three books of Virgil's Æneid. A passage from one of the books is given for translation into good English. For text-books the University Tutorial Series are as good as any, comprising text, notes, vocabulary, and translation. The student should work steadily through the books, translating as much as possible himself by the aid of notes and vocabulary and turning to the translation as a comparison and check. Unusual constructions and difficult passages should be marked, so that on a second reading special attention may be paid to them. Historical allusions are not required to be worked up by the student.

Latin Prescriptions.—Ince's 'Latin Grammar of Pharmacy' is the best book for this part of the subject. The examples in the book should be worked through, and as much as possible of the vocabulary should be committed to memory, as this will also aid him in construing passages (excepting obsolete phrases) from the 'Pharmacopœia Londinensis' (1851 edition is best), a page or two of which should be translated each week by the aid of a Latin dictionary.

Translation of English into Latin is perhaps the most difficult part of the Latin paper. From his school work the student will no doubt have a good groundwork in the rules of Latin grammar, but I should strongly advise him to get Abbott's 'Latin Prose Through English Idiom,' which is almost invaluable. The rules given in the first few pages should be thoroughly mastered, particularly those relating to "oratio recta" and "oratio obliqua," examples being also noted. Concurrently the carefully graduated exercises at the end should be translated by the aid of a dictionary. Parsing may be obtained from any good general grammar. However much time is given to this subject, it will certainly not be time wasted.

English.

This subject comprises parsing and essay writing. For the rules of grammar and parsing Morris's 'English Grammar' is all that is necessary, and regular practice in parsing must be obtained. The essay, on one of three given subjects, is more important than parsing, and facility in this can only be obtained by constant practice, particular attention being paid to good expression. I would advise the student to write a short essay on some subject about once a week or so, submitting it for correction to some capable friend or possibly tutor. Some very good hints can be obtained from Low's 'Matriculation English,' published by the U.C.C.

Arithmetic.

This subject requires to be treated with the greatest care, neatness and legibility being essential and an aid to correct work. Examples of all kinds of problems should be constantly worked through, a good text-book, such as Pendlebury's 'Arithmetic,' being used. The collection of questions from the College of Preceptors' examinations (published by Hodgson, Farringdon Street, E.C.) is also very useful for practice. The most common English and metric equivalents and the metric tables must also be well known to the candidate.

French or German.

Of these two subjects the candidate will naturally choose the one with which he has had a previous acquaintance. In most cases this will be French, and so I will treat of French here, although if he had to choose between the two on equal grounds, German would undoubtedly be most useful in after life, especially in higher science. In either case, the point to be aimed at is facility in translation from one language to the other. A good text-book of grammar—*e.g.*, Macmillan's 'Second French Course'—is useful, but most work should be done by translation from a French reader. A newspaper or novel forms a pleasant means of obtaining practice in this. The examination questions of the College of Preceptors are also very useful.

Pharmacopedics.

The requirements as regards chemistry, pharmacy, and botany are very vaguely stated in the syllabus, and students may well be puzzled as to what to read up and what to neglect.

Chemistry.—The preparation and properties of the most important non-metallic elements and their compounds must be known, and also the rules governing chemistry and chemical action. The general properties of, and tests for the more important metallic compounds in the B.P. must also be known. The best text-book for the purpose is "Newth," and for explanation of B.P. chemicals and processes the work *par excellence* is White and Humphrey's 'Pharmacopedia.' Examples of calculations required in reducing volumes of gases at different temperatures and pressures, etc., should also be worked out.

Pharmacy.—The candidate must have a thorough knowledge of the processes of percolation, maceration, filtration, etc., which may be obtained from Proctor's 'Practical Pharmacy,' with reference to B.P. preparations, but this book is not of sufficiently recent date for general use. 'Pharmacopedia' is again very useful in this subject, especially in connection with the details and explanations of the official processes. A knowledge of the strengths of the more potent preparations, especially alkaloidal, is necessary. Practical work in chemistry and pharmacy is essential for a sound knowledge of the subjects

Botany.—The scope of this subject is practically covered by Edmond's 'Elementary Botany,' the student not devoting too much time to minute microscopic detail. Theoretical study must be supplemented by practical field work.

In preparing for this examination the student must understand that constant application to work will alone give him the amount of knowledge requisite for success. The time which each student can give to study necessarily depends upon his opportunities, and consequently he must draw up a time-table for himself, with a due regard to the importance of the subjects, and adhere to it as much as possible. As a general idea, we will suppose that during the three years of his apprenticeship he has obtained a good grounding in chemistry and botany by attending evening classes at a local science school. Pharmacy should come in in his business, and the other subjects he has kept moderately conversant with since leaving school. In this case, even, he will find that six months' work of about four hours a day is by no means too much time to devote to the last preparation, constant revisions being taken in all the subjects. Speed in writing is a great factor towards success, provided that legibility and accuracy be not sacrificed, and is worthy of cultivation. It is a good plan occasionally to take one of the former examination papers and work through it as far as possible under examination conditions, thus obtaining a good idea of the subjects that call for most revision. In conclusion, I am sure that, whether successful or not, the student will never regret having worked for the Bell examination, particularly as part of it carries him a good way towards the successful negotiation of the "Minor."

SUNSHINE AND SNOW.

BY FRANK R. SQUIRE.

This is the second time during the last few years that I have spent part of my summer holiday in "Alagna." As possibly some of my countrymen do not know where Alagna is and how to get there, I will begin by observing that Alagna is situated on the river Sesia, in the Valley of Sesia, in North Italy, and can be reached from Novara (a station on the main line between Milan and Turin, known to all) by train to Varallo in about two hours, and thence by carriage in four and a-half hours. On my way I stopped at Varallo a fortnight, at the Hôtel d'Italie, renowned as having one of the best kitchens in North Italy. I was able to take a fresh walk nearly every day, and all beautiful, the visit to the Sacred Mountain being one of the most interesting. The drive from Varallo to Alagna was most charming, and occupied four and a-half hours (changing horses once), mounting nearly all the way, for here we are 1,205 metres above the sea (nearly 4,000 feet). Snow is to be seen on the higher mountains. Monte Rosa, which is north, cannot be seen from the village, but a short walk either way reveals a splendid view of this ever snow-capped Queen of the Alps. A great advantage on being to the south of the Alps is the fact that the air is dry, and that there is any amount of sunshine, which warms up and comforts the keen mountain air that comes over the snow; hence my heading of "Sunshine and Snow," and both spelt with a capital "S." On the northern side of the Alps there is too much rain and fog for my taste, and too little sunshine. The village of Alagna is small, but there is a church, a post and telegraph office, and four good hotels. The one I am staying in (the Grand Hotel) is excellent—a newly-built house, with good food and attendance. The new proprietor, Mr. Kramer, who is very attentive and obliging, also keeps an hotel in San Remo—the Hôtel Paradis et de Russie—which is very comfortable; but what Paradise has got to do with Russia some of my colleagues may know—I don't!

PHARMACEUTICAL QUALIFICATION IN GREAT BRITAIN.

THE legal qualification to practise pharmacy in Great Britain is that of "Chemist and Druggist," obtainable by passing the Minor Examination of the Pharmaceutical Society, but the use of the title "Pharmacist" or that of "Pharmaceutical Chemist" is by Statute restricted to persons who, having been duly registered as chemists and druggists, also pass the Society's Major Examination. A candidate for registration as a chemist and druggist must have been registered as an "Apprentice or Student" for at least three months prior to the date of examination, and, in addition to being of full age, must produce evidence of having been practically engaged for three years in the translation and dispensing of prescriptions.

HOW TO BECOME A PHARMACIST.

The various stages through which he who desires to have the power to retail and to dispense poisons without infringing the law has to pass are pretty generally known. But a brief outline of the course necessary to take is essential in this, the issue of the Journal which especially appeals to students of pharmacy. Before proceeding to give this short *résumé* it may be of interest briefly to discuss the question, "Why become a pharmacist?" It is not intended, however, to influence anyone in his choice of profession, nor to persuade any person that the prospects of pharmacy are better than they really are. To refer to the duties of the pharmacist as a public safeguard and as an indispensable member of society, is not necessary, suffice it to say that the calling is supremely an honourable one. As a general rule, it cannot be said that large fortunes are made in pure retail pharmacy, and such an inducement cannot be held out to those thinking of entering its ranks. At the same time, and this fact can be asserted without any fear of contradiction, there is scarcely another trade or profession (in fact, for the moment, we cannot call to mind a single one) which affords the same certainty of a fair competence for life.

Once a qualified chemist always a qualified chemist, and, whether young or old, healthy or infirm, whether in business on his own account, or as manager, assistant, or dispenser, the possessor of the Minor certificate of the Pharmaceutical Society can, except through very rare and obvious causes, always count on a respectable livelihood. Can this same be said of many other callings? It is extremely doubtful. To repeat what has been said above, whilst such statements are by no means intended to be held out as inducements, it is well that the embryo chemist should bear these things in his mind when he looks around and finds others making larger fortunes in more uncertain callings. Moreover, although it is not expected that an apprentice will look so far ahead into the unknown future, it should be placed on record that there are few classes of men who have proved themselves so willing to help those of their fellows who have fallen by the way as the members of the Pharmaceutical Society.

To look at the advantages of the Minor qualification from a less serious point of view, it might be asked—what other calling affords such opportunities for travel as does pharmacy? With the Minor diploma as his passport, and with nothing in his pocket, a chemist can sojourn in alien lands and penetrate to places scarcely known except to American millionaires. He can obtain insights into the national life of foreign peoples as thoroughly as did Oliver Goldsmith, and far better than the very rich and leisured classes, who tour the world's hotels, are able to do.

The excellent work recently performed by local associations, which have during the last few years been gradually increasing in number and importance in all parts of the country, has done much to improve the possibilities of chemists as an organised body of citizens. This is most important in view of the legislation which the Pharmaceutical Society is endeavouring to procure, and the greater the support the central body receives through these channels the better will be the prospect for those about to enter upon their career. And here it should be remembered that the only means whereby pharmacy can be improved is through the Pharmaceutical Society, and it therefore follows that the registered chemist who does not loyally support the body which alone has the power to grant him his diploma is not only hindering his own personal progress, but is hampering the advancement of his own craft. Surely this is not characteristic of a good citizen!

It is very gratifying to be able to record that the feeling between pharmacists and the medical profession appears daily to be growing better, and it is to be hoped that the time is not so very far distant when a mutual arrangement will be arrived at whereby the positions of both classes will be improved, and the public better safeguarded.

In order to become a registered chemist, it is necessary to pass a preliminary examination, particulars of which are given this week, to serve an apprenticeship of three years, to attain the age of twenty-one, and pass the Minor Examination; these are the essentials. As regards the preliminary examination it is strongly recommended that this should be taken before commencing the period of apprenticeship. Otherwise, it cannot but handicap an apprentice to be obliged to devote attention to what are really school subjects, when the whole of his attention should be taken up with the technical matters which are required for the qualifying examination. It may be found an advantage to pass the Matriculation (with Latin) of London University, for although rather more difficult than those usually passed it may be of great advantage at a later stage, when it is desired to take a degree in science or any of the other degrees granted by the University of London.

The choice of the business in which the initial experience is to be gained is important, and, generally speaking, it is perhaps advisable to select a pharmacy where an all-round insight into all things appertaining to the preparation and vending of pharmaceutical and allied products may be obtained. The three years of apprenticeship might, with advantage, voluntarily be extended to four, and during the whole of this period it will be found of great service if an hour or so a day be devoted to the study of the Pharmacopœia, while, if possible, apprentices should attend lectures at institutions where the subjects required for the final examination are taught.

The *vade mecum* of the pupil at this stage should be the British Pharmacopœia, and he will do well to study it with intelligence, not necessarily to attempt to learn things off by heart, but to make himself familiar with every article mentioned therein. By comparing the drugs he finds in the shop with their official descriptions, by performing the tests mentioned in the British Pharmacopœia, and by making inquiries as to the reason of each step in the process employed in the manufacture of galenicals and other preparations, he will go a long way towards preparing himself, not only for his examination, but for the position he will subsequently have to fill. Answers to all those queries which his master may not be able to give will be found in one or other of the commentaries which he will probably find on the bookshelf among the other standard works of pharmacy.

The increasing number of students who present themselves annually for the Jacob Bell Scholarships indicates the growing inclination to find time for study during apprenticeship, and this is a very healthy sign for the future of pharmacy. The desire to compete for these prizes cannot be too highly commended, and the long list of successful men who have obtained them should serve as an inducement to others to follow their example.

Field excursions during the spring, summer and autumn seasons should be indulged in, and the knowledge of practical botany obtained in this way will be found of great service when the time comes for appearing before the examiners. Although a course at a school of pharmacy is not compulsory, it is in most cases necessary, and below is given a list of the various colleges throughout the country. From the outset of his career the apprentice should read the *Pharmaceutical Journal;* there is no better means of keeping himself in touch with matters of trade importance and scientific interest, he will find in its pages information which will prove invaluable not only in his student days, but in after years when he undertakes the responsibility of a pharmacy of his own.

The Major qualification is not essential to carrying on the business of a chemist and druggist, but in addition to the extra knowledge which it implies it confers upon the holder the title of "Pharmaceutical Chemist." The value of this description is apparent, since large numbers find it worth their while to make use of it, and full particulars concerning the requirements are appended, in addition to information regarding the preliminary and Minor examinations.

British or Irish pharmaceutical qualifications are recognised in the Channel Islands and the Isle of Man as entitling the holders to practise pharmacy in those islands. In almost all parts of the British dominions across the seas the Minor certificate is recognised. This is now the case in all parts of India, Australasia, South Africa, British Guiana, the West Indies, Malta, Gibraltar, and in most of the Canadian provinces. The Council of the Ontario College of Pharmacy, however, requires an examination under their own auspices, but accepts proof of apprenticeship in Great Britain.

REGISTRATION AS APPRENTICES OR STUDENTS.

Persons desirous of obtaining registration as "Apprentices or Students," and of thus becoming eligible to enter for the Minor or Qualifying Examination, must deliver to the Registrar, Mr. Richard Bremridge, 17, Bloomsbury Square, London, W.C., on behalf of the Boards of Examiners, a certificate of having passed one of the examinations mentioned in the following list, subject in every case to the condition required by the Bye-laws that such certificates include in the subjects for which they were granted—English Grammar, Latin, a modern Foreign Language, Arithmetic, Algebra, and Euclid:—

Approved Preliminary Examinations.

University of Oxford.
Junior or Senior Local Examinations.
Responsions.

University of Cambridge.
Junior or Senior Local Examinations.
Higher Local Examinations.
Previous Examination.

University of Durham.
Junior or Senior Local Examinations.

University of London.
Matriculation Examination.

Victoria University.
Preliminary Examination.

University of Birmingham.
Matriculation Examination.

University of Edinburgh.
Preliminary Examination for Graduation in Medicine and Surgery, Arts, or Science.

Scotch Education Department.
A pass in the Honours, First Grade, or Lower Grade Leaving Certificates Examination.

Intermediate Education Board for Ireland.
Senior, Middle, or Junior Certificates.

Central Welsh Board.
Honours, Senior, or Junior Certificates.

University of Aberdeen.
Preliminary Examination for Graduation in Medicine or Surgery, or Arts or Science.

University of Glasgow.
Preliminary Examination for Graduation in Medicine or Surgery, or Arts, or Science.

University of St. Andrews.
Preliminary Examination for Graduation in Medicine or Surgery, or Arts, or Science.

University of Dublin.
Public Entrance Examination.

Royal University of Ireland.
Matriculation Examination.

University of Wales.
Matriculation Examination.

Educational Institute of Scotland.
Preliminary Medical Examination.

Oxford and Cambridge Schools' Examination Board.
Examination for Higher or Lower Certificates.

College of Preceptors.
Examination for a First or Second Class Certificate.

Certificates of having passed an Examination of a legally constituted Examining Body not specified in the foregoing list may be submitted for the consideration of the Boards of Examiners and the approval of the Council, and each individual case will be considered on its merits. The subjects in which candidates must have been examined are English Grammar and Composition, Latin, a Modern Foreign Language, Arithmetic, Algebra, and Euclid. The certificates submitted must include the six subjects above enumerated, and those subjects must have been passed at not more than two examinations of the same examining body, except in the case of certificates which are accepted by the Scotch Universities for registration as Medical Students. The registration fee of two guineas must in every case accompany the certificate submitted for acceptance. Persons who are registered as "Apprentices or Students" are eligible to be elected Student-Associates of the Pharmaceutical Society, on payment of an annual subscription of half-a-guinea.

STUDY DURING APPRENTICESHIP.

The pharmaceutical apprentice, after having passed an approved preliminary examination, should lose no time in making himself familiar with the rudiments of chemistry and botany. As an introductory work in the former subject a suitable book is Bailey's 'First Stage Inorganic Chemistry' (Clive, 2s.), which may be supplemented by Beddow's 'First Stage Practical Inorganic Chemistry' (Clive, 1s.), the experiments in which should be performed as far as possible. A good introduction to the study of plants is Ewart's 'First Stage Botany' (Clive, 2s.), especially if the student will take the trouble to obtain specimens of the plants and parts of plants described in the book, and examine them carefully. Having thus obtained a fair groundwork of chemical and botanical knowledge, he should next begin the systematic study of the British Pharmacopœia (Spottiswoode, 10s. 6d.), with the contents of which it is essential that he should become very familiar. As an aid to a proper comprehension of the British Pharmacopœia he will find a good commentary necessary, such as White and Humphrey's 'Pharmacopedia' (Kimpton, 14s. net). Meanwhile, the systematic study of chemistry and botany should be continued and the study of physics commenced. The most suitable text-books at this stage are such as will be found useful later when preparing for the Minor Examination, including Newth's 'Inorganic Chemistry' (Longmans, 4s. 6d.), followed or supplemented by Perkin and Kipping's 'Organic Chemistry' (Chambers, 6s. 6d.), Scott's 'Introduction to Structural Botany,' Volume 1 (Black, 3s. 6d.), and Briggs' 'General Elementary Science' (Clive, 3s. 6d.). In beginning the study of practical chemistry, Briggs' 'Analysis of a Simple Salt' (Clive, 2s. 6d.) should be succeeded by Bailey and Fowler's 'Elements of Qualitative Analysis' (Cornish, 2s.), and the Owens College 'Laboratory Tables (Cornish, 1s. 4d.). Field botany should be studied with the aid of Holmes' 'Botanical Note-Book' (Dulau, 1s. 6d.), and Watts' 'School Flora' (Longmans, 2s. 6d.). It will also be found advantageous to work a number of the problems in Dobbin's 'Arithmetical Exercises in Chemistry' (Thin, 2s.), which contains much useful information about weights and measures, thermometer scales, specific gravity, vapour densities, and chemical calculations generally.

MINOR EXAMINATION SYLLABUS.

Persons who pass the Minor Examination are registered as chemists and druggists, and are then eligible as members of the Pharmaceutical Society, on payment of an annual subscription of one guinea. The fee for the examination is ten guineas, but a person who has attended and failed to pass may re-enter for examination on payment of a reduced fee of three guineas. The subjects of examination are Botany, Chemistry and Physics, Practical Chemistry, Materia Medica, Pharmacy, Practical Pharmacy and Dispensing, and Prescriptions. The Council of the Pharmaceutical Society recommends that all Candidates before presenting themselves for examination should receive a systematic course of instruction occupying a period of not less than six months; and that such period of study should include at least 60 lectures in Chemistry, 18 hours' work in each week in Practical Chemistry, 45 lectures and demonstrations in Botany, and 25 lectures and demonstrations in Materia Medica.

The Society's Boards of Examiners in London and in Edinburgh meet in January, April, and July, also at the end of September or the beginning of October. Each candidate for the Minor Examination must give notice and pay the fee to the Registrar in London on or before the fifteenth day of March, June, September, or December, and he will receive due notice of the date on which he will be required to present himself for examination. When giving notice for the first time a candidate must have attained the full age of twenty-one years, and must also produce a Registrar's Certificate of Birth, as well as a certified declaration that for three years he has been registered and employed as an Apprentice or Student, or has otherwise for three years been practically engaged in the translation and dispensing of prescriptions. The printed form on which this declaration is to be made can only be obtained from the Registrar, Mr. Richard Bremridge, 17, Bloomsbury Square, London, W.C. Each candidate must also state, at the time of giving notice, whether he desires to be examined in London or Edinburgh. The schedule of the examination requirements is here given in full.

BOTANY.

In this subject, the candidate is required to possess a practical knowledge of the Classification, Morphology, and Physiology of Plants, as follows:—

Classification.

The main divisions of the vegetable kingdom and their most important characteristics:—Thallophyta, Bryophyta, Pteridophyta, Phanerogamia.

The following Sub-classes and Natural Orders of the Angiosperms:—

Thalamifloræ
Calycifloræ
Corollifloræ
Monochlamydeæ
Petaloideæ
Spadicifloræ
Glumifloræ
Ranunculaceæ
Cruciferæ
Rosaceæ
Leguminosæ
Umbelliferæ
Compositæ
Solanaceæ
Liliaceæ

The description of flowering plants in technical language.

List of Plants for Recognition.

The candidate is also required to recognise any of the plants in the following list:—

Aconitum napellus.
Althæa officinalis.
Anthemis nobilis.
Aspidium filix-mas.
Atropa belladonna.
Avena sativa.
Brassica alba.
Brassica nigra.
Bryonia dioica.
Cochlearia armoracia.
Colchicum autumnale.
Conium maculatum.
Cystisus scoparius.
Daphne laureola.
Daphne mezereum.
Datura stramonium.
Digitalis purpurea.
Fœniculum capillaceum.
Hordeum distichon.
Hyoscyamus niger.
Juniperus communis.
Juniperus sabina.
Lavandula vera.
Matricaria chamomilla.
Mentha piperita.
Mentha pulegium.
Mentha viridis.
Menyanthes trifoliata.
Œnanthe crocata.
Papaver rhœas.
Papaver somniferum.
Pinus sylvestris.
Prunus lauro-cerasus.
Quercus robur.
Rosa canina.
Rosmarinus officinalis.
Ruta graveolens.
Salix alba.
Sambucus nigra.
Solanum dulcamara.
Taraxacum officinale.
Taxus baccata.
Triticum vulgare.
Ulmus campestris.
Valeriana officinalis.

Morphology, including Anatomy.

The external form of plants:—Thallus, stem, root, leaves, inflorescence, flower, fruit. The distinguishing features and common modifications of these structures.

Principles of branching and different kinds of branch systems.

Phyllotaxis, including vernation.

The different kinds of buds and their arrangement on the stem.

A general acquaintance with the elements of plant anatomy; the vegetable cell, tissues, *e.g.*, merismatic, epidermal, fundamental and vascular.

The characteristic anatomical features of roots, stems, and leaves of flowering plants and ferns.

The candidate is expected to recognise by means of the microscope, and describe, sections illustrating the above plant structures.

The method of increase in thickness of stems and roots, and the characters of primary and secondary tissues.

The characters of the flowers.

The methods of pollination; self- and cross-fertilisation.

The formation of the seed and germination.

Physiology.

The elementary facts in connection with the physiology of plants, including the nature and source of the food of plants, and the manner in which the raw materials are elaborated.

Chlorophyll, its manner of occurrence in the plant; its functions and the conditions under which it discharges them.

Reserve materials, their nature, mode of deposition, and the manner in which they are utilised by the plant.

The manner in which plants grow, and the conditions necessay for the growth of a plant.

The manner in which plants respond to external stimuli, *e.g.*, light, gravity, etc.

Sexual and asexual reproduction.

CHEMISTRY AND PHYSICS.

In Chemistry and Physics, the candidate is expected to possess an elementary knowledge of the following subjects:—

Physics.

The law of the conservation of energy.
The law of gravitation.
The balance.
Specific gravity.
Atmospheric pressure.
Pressure of aqueous vapour.
The barometer, air-pump, and siphon.
The law of Boyle.
Temperature.
Thermometers.
The law of Charles.
The law of gaseous diffusion.
Victor Meyer's method for determining vapour densities.

Chemical Theory.

The chief characteristics of chemical action.
The distinction of elements and compounds.
The laws of chemical combination by weight and volume.
The hypothesis of Avogadro.
Atomic weight and molecular weight.
Chemical formulæ and nomenclature.
Valency.
The distinction between metals and non-metals.

Non-Metallic Elements.

The general characters of the non-metals.

The chief methods of preparation and the typical reactions of the following non-metallic elements and compounds:—

Hydrogen, oxygen, ozone, water, hydrogen peroxide.

Chlorine, bromine and iodine, and their compounds with hydrogen and oxygen.

Fluorine, hydrofluoric acid.

Nitrogen, ammonia, the oxides of nitrogen, nitrous acid nitric acid.

Sulphur, hydrogen sulphide, sulphurous and sulphuric anhydrides and acids, thiosulphuric acid.

Phosphorus, phosphine, the oxides and oxyacids of phosphorus, the chlorides of phosphorus.

Silicon, silica, fluoride of silicon, silicofluoric acid.

Boron, boric acid.

The usual impurities in such of the above-named substances as are included in the British Pharmacopœia.

Metallic Elements.

The general characters and classification of the metals.

The general methods of forming oxides and salts.

The sources, the usual methods of extracting, and the chief properties of the under-mentioned metals:—

Potassium
Sodium
Ammonium
Lithium
Barium
Strontium
Calcium
Magnesium
Zinc
Aluminium
Iron
Chromium
Manganese
Nickel
Cobalt
Arsenium
Antimony
Tin
Copper
Bismuth
Lead
Silver
Mercury
Gold
Platinum

The modes of preparation, properties, adulterations and contaminations of the principal compounds of the above-named metals.

Organic Chemistry.

Carbon and its oxides, cyanogen, hydrocyanic acid, cyanides, ferrocyanides, ferricyanides, oxalic acid.

The chief methods of preparing the following:—

Methane
Ethane
Ethylene
Acetylene
Methyl alcohol
Ethyl alcohol
Formic aldehyde
Formic acid
Acetic aldehyde
Acetic acid
Ethyl acetate
Acetamide
Olein
Glycerol
Benzene
Phenol
Nitro-benzene
Aniline
Benzoic acid
Salicylic acid
Chloral hydrate
Chloroform
Iodoform
Ether

The principal properties, reactions, and mutual relations of the above-named compounds.

A general knowledge of the methods of determining carbon, hydrogen, oxygen and nitrogen in organic compounds, and of obtaining molecular formulæ.

The candidate is also expected to solve simple problems relating to the weight and volume, under different conditions of temperature and pressure, of elements and compounds concerned in chemical reactions.

PRACTICAL CHEMISTRY.

In this subject, the candidate is required—

To determine the specific gravity of liquids and solids. To be familiar with the general construction and use of the thermometer and barometer.

To recognise by chemical tests the more important non-metallic elements and compounds, as well as the metals and salts indicated in the foregoing list.

To detect the chief impurities in those elements and compounds that are included in the British Pharmacopœia.

To recognise by their physical properties those elements and compounds which possess well-defined characteristics.

To analyse a mixture containing not more than two metals and two acid radicals.

To identify by chemical tests the following organic compounds:—

Hydrocyanic acid
Cyanides
Ferrocyanides
Ferricyanides
Oxalates
Acetates
Tartrates
Citrates
Salicylates
Starch
Cane sugar
Grape sugar
Salicin
Quinine
Quinine salts
Morphine
Morphine salts
Strychnine
Strychnine salts

To detect the impurities in such of the above-named compounds as are included in the British Pharmacopœia.

To perform those volumetric determinations which are described in the British Pharmacopœia.

To understand the principles of volumetric analysis.

To prepare, standardise, and use volumetric solutions.

To be familiar with the construction and use of the balance.

To have a practical knowledge of the Imperial and Metric Systems of Weights and Measures.

To determine quantitatively the following:—

The total alkaloids in cinchona bark and its official preparations; and in liquid extract of belladonna and its preparations; and in liquid extract of ipecacuanha.

The strychnine in the extract, liquid extract, and tincture of nux vomica.

The morphine in opium and its extract, liquid extract, and tincture.

The resin in tincture of jalap.

To have a practical acquaintance with the methods of preparing the more important inorganic substances, including the non-metals and their compounds, and such metallic compounds as are included in the British Pharmacopœia, and also the following organic compounds:—

Ether
Chloroform
Amyl nitrite
Ethyl acetate
Hydrocyanic acid

To be able to explain to the examiner the operations involved in the preparation of the above-named compounds, and, if called upon, to perform the operations or certain stages of them himself.

MATERIA MEDICA.

In this subject, the candidate is required—

To recognise specimens of any crude drugs mentioned in the British Pharmacopœia or in the following list:—

Roots.

Alkanna tinctoria.
Althea officinalis.
Bryonia dioica.
Inula helenium.

Rhizomes, etc.

Acorus calamus.
Agropyron (Triticum) repens.
Helleborus niger.
Iris florentina.
Sanguinaria canadensis.
Veratrum album.
Veratrum viride.

Barks.

Berberis vulgaris.
Canella alba.
Cinchona calisaya.
Cinchona lancifolia.
Cinnamomum cassia.
Coto.
Erythrophlœum guineense.
Nectandra rodiæi.
Pinus larix.
Quercus robur.
Rhamnus frangula.
Ulmus campestris.
Ulmus fulva.

Leaves.

Aconitum napellus.
Nicotiana tabacum.
Piper angustifolium.

Herbs, etc.

Convallaria majalis.
Euphorbia pilulifera.
Grindelia squarrosa et robusta.
Juniperus sabina.
Lactuca virosa.
Marrubium vulgare.
Ruta graveolens.
Solanum dulcamara.

Flowers.

Arnica montana.
Calendula officinalis.
Pyrethrum cinerariæfolium, etc.
Rosa centifolia.

Fruits.

Ægle marmelos.
Cuminum cyminum
Laurus nobilis.
Piper longum.
Punica granatum.
Vanilla planifolia.

Seeds.

Amomum melegueta.
Areca catechu.
Dipteryx odorata.
Hordeum distichon.
Hyoscyamus niger.
Paullinia sorbilis (Guarana)
Pyrus cydonia.
Strychnos amara.
Theobroma cacao.
Trigonella fœnum-græcum.

Hairs or Glands.

Mallotus philippinensis
Mucuna pruriens.

Juices, etc.

Black catechu.
Cape aloes.
Gutta percha.
Lactucarium.
Manna.
Natal aloes.

Gum-Resins.

Euphorbium.
Olibanum.

Resins.

Dragon's Blood.
Elemi.
Mastiche.
Sandarac.
Shellac.

Cryptogamic Substances.

Cetraria islandica.
Chondrus crispus.
Fucus vesiculosus.
Lycopodium.

Animal Substances.

Castoreum.
Mylabris cichorii.
Mylabris phalerata.

To know the principal commercial varieties of the various crude drugs.

To be acquainted with their botanical (or zoological), geographical, and commercial sources, the natural orders to which the plants belong, and the modes of collecting and preparing the drugs for the market.

To indicate the morphological nature of such crude drugs as are organised, and the mode of formation of such as are unorganised.

To describe them correctly, and to point out diagnostic characters, either chemical or physical, the latter as far as they can be ascertained by the use of a lens.

To name the chief active constituents of official drugs.

To know the proportion of chief active constituents present in good samples of the more important official drugs.

To possess a practical knowledge of any pharmacopœial tests or processes of assay applied to crude drugs or their official products.

PHARMACY.

In this subject, the candidate is required to possess a general knowledge of the following branches :—

Operations Requiring the Use of Heat.

Evaporation, with particular reference to the preparation of extracts and inspissated juices.

Special characters and modes of preparing the various classes of extracts.

Influence of surface, temperature, and pressure upon the rate of evaporation.

Water, steam, and sand baths.

Distillation; the distinctive characters and objects of ordinary, fractional, and destructive distillation.

Official preparations illustrating the various kinds of distillation.

Apparatus employed in distillation; principles on which the retort and receiver, still and worm, and Liebig's condenser, are constructed and used.

Sublimation, its objects and applications in pharmacy.

Official products of sublimation, calcination, and fusion.

Desiccation; temperature best suited for drying particular drugs; loss in drying vegetable drugs.

Forms of drying ovens and the principles on which they are constructed and used.

Disintegration of Solid Substances.

Cutting, bruising, and pulverisation.

Apparatus employed in those operations and the principles indicating which is to be adopted in particular instances.

Methods for controlling the degree of comminution.

Sieves and sifting.

Trituration, levigation, elutriation and granulation, including methods for producing certain chemicals as fine powders, small crystals, scales, etc.

Solution, its nature.

Solvent power of various menstrua.

Influences of (*a*) temperature; (*b*) state of division of the substance to be dissolved; (*c*) time; (*d*) position of the substance in the menstruum.

Lixiviation, infusion, digestion, and decoction.

Maceration, percolation, and displacement; the principles on which the successful performance of those processes depend.

Form and materials for percolators and other vessels employed.

Filtration, its objects and methods.

Filtering media.

Means of expediting filtration.

Dialysis, its application in pharmacy.

Construction and use of the dialyser.

Expression.

Methods of obtaining the juices from plants.

Recovery of the residual liquids from tincture marcs, etc.

Screw, hydraulic and other presses.

The principles involved in the dispensing of medicines.

The best excipients and methods for forming pill masses.

The preparation and nature of emulsions.

The most suitable emulsifying agents.

The best means of suspending insoluble substances in liquids.

Galenic Pharmacy.

The candidate is also required to show a general knowledge of the processes, and to understand the principles of the processes by which the official preparations belonging to the following classes are made :—

Collodions
Confections
Decoctions
Dilute acids
Extracts (solid and liquid)
Glycerins
Infusions
Juices
Liniments
Lotions
Mixtures
Ointments
Pill masses
Plasters
Powders (simple and compound)
Solutions
Spirits
Suppositories
Syrups
Tinctures
Vinegars
Waters
Wines

A knowledge is also required of the proportion of active ingredient or crude material in official preparations containing—

Aconite
Antimony
Arsenic
Belladonna
Calabar bean
Cantharides
Chloral hydrate
Chloroform
Caustic potash
Caustic soda
Colchicum
Digitalis
Elaterinum
Ergot
Iodine
Iodoform
Ipecacuanha
Lead
Mercury
Nux vomica
Opium
Phosphorus
Scammony
Stramonium
Squill
Alkaloids
Alkaloidal salts

Sale of Poisons.

The candidate is further required—

(*a*) To enumerate the poisons contained in Schedule A of the Pharmacy Act, 1868, and those since added thereto, in pursuance of the provisions contained in Section II. of that Act, viz. :—

Poisons within Part I. of the Schedule.
Poisons within Part II. of the Schedule.

(*b*) To describe minutely the conditions required upon the sale by retail of poisons, both in Part I. and Part II. of Schedule A; and to write the proper entry required, according to Schedule F of the Act, for the sale of a poison coming within Part I. of Schedule A.

(*c*) To state the conditions imposed on the sale of scheduled poisons by wholesale and for export, and upon the sale of a scheduled poison when forming an ingredient in a medicine dispensed.

The candidate is also expected to possess a knowledge of the conditions imposed on the sale of Arsenic by the Arsenic Act.

PRACTICAL PHARMACY AND DISPENSING.

In this subject, the candidate is required—

To consider such operations of the British Pharmacopœia, or such parts of them as may be practicable, involved in the processes for preparing the following :—

Collodions
Confections
Decoctions
Dilute acids
Extracts, solid
Extracts, liquid
Glycerins
Infusions
Juices
Liniments
Lotions
Mixtures
Ointments
Pill masses
Plasters
Powders, simple
Powders, compound
Solutions
Spirits
Suppositories
Syrups
Tinctures
Vinegars
Waters
Wines

To weigh, measure, and compound medicines.

To write the directions for medicines in concise language in a neat and distinct hand.

To finish and properly direct each package.

Note.—In awarding marks in this subject, the time taken by the candidate in doing the work is taken into account.

PRESCRIPTIONS.

In this subject, the candidate is required—

To read without abbreviation autograph prescriptions.

To translate Latin prescriptions into English.

To understand the grammatical construction of the Latin in prescriptions.

To render a literal as well as an appropriate translation of the directions for use.

To detect errors in prescriptions.

To discover unusual doses.

To have a general knowledge of posology.

To calculate percentages and other quantities occurring in prescriptions.

To render in good Latin ordinary prescriptions written in English.

BOOKS FOR MINOR STUDENTS.

At the conclusion of apprenticeship, the student preparing for the Minor Examination will find that he requires several other books in addition to those mentioned at page 332. Thus, he will find it useful to work through the second volume of Scott's 'Introduction to Structural Botany' (Black, 3s. 6d.), and then finish up with Lowson's 'Text-book of Botany' (Clive, 6s. 6d.), or Green's 'Manual of Botany' (Churchill, 17s. 6d.). As regards chemistry, he will find all he requires in Newth's 'Inorganic Chemistry,' Perkin and Kipping's 'Organic Chemistry' (Part 1), and—for the chemistry of the British Pharmacopœia—White and Humphrey's 'Pharmacopedia.' The last-mentioned work will also be found the best guide to the study of the official materia medica (vegetable and animal), since it contains the most recent information on the subject, with a more accurate and detailed account of the chemistry of drugs, fixed and volatile oils, etc., than is readily available elsewhere. Southall's 'Organic Materia Medica' (Churchhill, 7s. 6d.), Maisch's 'Materia Medica' (Kimpton, 10s. 6d. net), or Greenish's 'Materia Medica' (Churchill, 15s.) will be found useful for reference and for information concerning unofficial drugs. In addition to Briggs' 'General Elementary Science,' the student should procure a copy of Cook's 'Physics' (Longmans, 2s. 6d.), which is well adapted for pharmaceutical purposes. His books on practical chemistry may be supplemented by Attfield's 'Manual of Chemistry' (Gurney and Jackson, 15s.), Clowes and Coleman's 'Quantitative Chemical Analysis' (Churchill, 10s.), and Woodward's 'Chemical Arithmetic,' Part 1 (Simpkin, Marshall, 2s.). Whitla's 'Pharmacy, Materia Medica, and Therapeutics' (Renshaw, 10s. 6d), is also a useful work for reference. Pharmacy and dispensing are best studied in Caspari's 'Pharmacy' (Kimpton, 19s. net), 'Pharmacopedia,' and MacEwan's 'Art of Dispensing' (5s. 6d.), the first giving all the information required concerning pharmaceutical operations generally, while the second deals at length with the whole of the pharmacy of the British Pharmacopœia, and MacEwan's book explains the methods and processes involved in compounding medical prescriptions. Lucas's 'Practical Pharmacy' (Churchill, 12s. 6d.) and Proctor's 'Lectures in Practical Pharmacy' (Churchill, 14s.) are useful for reference. The 'Calendar of the Pharmaceutical Society of Great Britain' (2s.), and the 'Calendar of the Pharmaceutical Society of Ireland' (1s. 6d.), give full information regarding the conditions under which poisons may be sold, while Ince's 'Latin Grammar of Pharmacy' (Baillière, 5s.) will be found particularly useful in dealing with prescriptions.

MAJOR EXAMINATION SYLLABUS.

Persons who pass the Major Examination are registered as "Pharmaceutical Chemists," and, as such, are exempt from service on all juries and inquests in England and Wales. The fee for the examination is three guineas, and the fee for re-examination two guineas. The examination in the respective subjects—Botany, Chemistry and Physics, Practical Chemistry, and Materia Medica—may be oral, practical, or in writing. In the practical portion of the examination, standard works of reference are provided for the use of candidates, at the discretion of the Examiner.

BOTANY.

In addition to what is required for the Minor Examination, the candidate is expected to show a competent practical knowledge of the following subjects:—

Classification.

The general principles of classification; the Natural system.

The characteristic features of the following groups:—

- Cryptogamia.
  - THALLOPHYTA.
    - ALGÆ.
    - FUNGI (INCLUDING LICHENS)
  - BRYOPHYTA
    - HEPATICÆ
    - MUSCI.
  - PTERIDOPHYTA.
    - EQUISETINÆ.
    - FILICINÆ.
      - Filices.
    - LYCOPODINÆ.
- Phanerogamia.
  - GYMNOSPERMÆ
    - Coniferæ.
  - ANGIOSPERMÆ.
    - Dicotyledones.
      - *Thalamifloræ.*
        - Papaveraceæ.
        - Caryophyllaceæ.
        - Violaceæ.
        - Malvaceæ.
      - *Discifloræ.*
        - Geraniaceæ.
        - Rutaceæ.
      - *Calycifloræ.*
        - Saxifragaceæ.
      - *Corollifloræ.*
        - Dipsaceæ.
        - Valerianaceæ.
        - Gentianaceæ.
        - Scrophulariaceæ
        - Boraginaceæ.
        - Labiatæ.
        - Primulaceæ.
      - *Monochlamydeæ.*
        - Polygonaceæ.
        - Euphorbiaceæ.
        - Ulmaceæ.
        - Urticaceæ.
        - Cupuliferæ
        - Salicaceæ.
        - Betulaceæ.
        - Myricaceæ.
    - Monocotyledones.
      - *Petaloideæ.*
        - Orchidaceæ.
        - Amaryllidaceæ
        - Iridaceæ.
      - *Glumifloræ.*
        - Cyperaceæ.
        - Graminaceæ.

Morphology.

Alternation of generations as illustrated by the life-histories in the several classes of plants.

Relative magnitude and degree of development of the sporophyte and the gametophyte.

The general anatomy of plants, treated more fully than in the Minor Examination.

Physiology.

The general physiology of nutrition and growth.

The relationships and adaptations of plants to their surroundings.

Practical Work.

To make and mount microscopic preparations illustrating vegetable structure.

To apply microchemical tests for cellulose and its modifications as they exist in the cell wall, and for the chief products which are formed in plant cells.

CHEMISTRY AND PHYSICS.

In addition to the subjects indicated by the Schedule for the Minor Examination the candidate is expected to possess a knowledge of the most important facts connected with the following:—

General Physics.

Physical constitution of the three states of matter.
Liquefaction of gases, critical point.
The diffusion of gases and liquids, dialysis.
Methods for determining vapour densities.
Solution.

Heat.

Dynamical theory of heat.
Heat and temperature.
Sources, development, and propagation of heat.
Radiation, diathermancy, and athermancy.
Separation of heat from light.
Latent heat.
Boiling point.
Distillation,
Freezing mixtures.
Specific heat.
Calorimeters.
Relation of specific heat to atomic weight.
Methods of determining exceedingly high and low temperatures.

Light.

Undulatory theory of light.
Reflection.
Refraction.
Interference of light.
Propagation of light, the photometer.
Mirrors and lenses, the microscope.
Decomposition of white light by a prism.
Spectroscope, spectrum analysis.
Double refraction.
Polarisation, the polariscope.
Influence of light in promoting chemical change.
The principles of the ordinary photographic processes.

Electricity and Magnetism.

Methods of producing magnetism.
Magnetic induction.
Sources of electricity, frictional electricity.
Electroscope.
Electric induction.
Electric machines.
Leyden jar.
Voltaic electricity.
Principal forms of voltaic batteries.
Galvanometer.
Chemical effects of current.
Electrolysis.
Measurement of current, Ohm's law.
Voltameter.
Secondary currents, secondary batteries.
Thermo-electricity, the thermopile.
Production of heat and light from electricity.
Electro-motors.
Dynamo-machines.

Chemical Theory.

History of the atomic theory.
Hypothesis of Avogadro.
Methods by which the standard atomic weights have been determined.
Dissociation.
Specific volume.
Periodic law.

Organic Chemistry.

Classification of carbon compounds.
Rational formulæ.
Isomerism.
Characteristics and constitution of the chief typical organic compounds.
Constitution, sources, methods of preparation, properties, reactions, and mutual relations of the following organic compounds:—

CYANOGEN DERIVATIVES.

Urea, cyanuric acid, uric acid.

HYDROCARBONS.

The principal members of the paraffin, olefine, acetylene, and benzene series.
Their chief haloid and nitro-derivatives.
Theory of isomerism in paraffin and benzene series.

PARAFFIN DERIVATIVES.

Distinction of primary, secondary, and tertiary alcohols
Chief primary monohydric alcohols.
Glycol.
Glycerin (glycerol).
Mannite, acetaldehyde, chloral.
Chloral hydrate.
Acetone.
Ether.
Principal acids of the acetic series
Oleic acid.
Glycollic and lactic acids.
Oxalic, succinic, malic, tartaric, racemic, and citric acids.
Ethylamine.
Acetamide.
Glycocine.
Cane sugar.
Grape sugar.
Milk sugar.
Maltose.
Starch and cellulose.

BENZENE DERIVATIVES.

Phenol sulphonic acid.
Phenol.
Resorcin (resorcinol).
Aniline.
Benzaldehyde.
Salicylaldehyde.
Benzoic acid.
Salicylic acid.
Principal properties of the terpenes and camphors, essential oils, resins.
Characteristics of naphthalene and its derivatives.
Processes of alcoholic, acetic, lactic, and ammonic fermentation.
Properties and decomposition products of the principal glucosides, alkaloids, and other substances of definite chemical composition in the British Pharmacopœia.

PRACTICAL CHEMISTRY.

In this subject the candidate is expected to be able—
To analyse mixtures containing three metallic salts.
To determine the nitrogen in organic compounds by the soda lime and Kjeldahl processes.
To determine melting and boiling points.
To perform processes of gas analysis which can be carried out in a nitrometer

To perform the operations (or certain stages of them) necessary for the preparation of the following:—

Cyanogen
Artificial urea
Ethyl chloride
Iodoform
Ethylene dibromide
Acetaldehyde
Formic acid
Oxalic acid
Nitro-benzene
Aniline
Benzoic acid
Nitrophenols

To recognise by their chemical reactions the most important of the inorganic and organic compounds (including crude drugs and galenical preparations) described in the British Pharmacopœia.

To determine, where necessary, by the Pharmacopœial gravimetric or volumetric methods, the strength and purity of those compounds.

To detect and separate the most important alkaloids, alkaloidal salts, and glucosides.

To separate in the pure state morphine from opium and strychnine from nux vomica.

To detect methyl alcohol in tinctures, liniments, and other preparations.

MATERIA MEDICA.

In addition to what is required for the Minor the candidate is expected to show a practical knowledge of—

The methods of determining the value of important drugs.

The methods of distingushing commercial varieties of important drugs.

The methods of separating such of the active principles of important drugs as are official in the British Pharmacopœia.

To have a general acquaintance with the active constituents of all important drugs.

To possess a general knowledge of the chemical properties of the official alkaloids, glucosides, resins, and essential and fixed oils.

To make and describe microscopical preparations of any organised vegetable drug official in the British Pharmacopœia.

To point out distinctive histological features in official vegetable drugs.

To discover obvious adulterations present in powdered drugs from comparison with authentic material.

BOOKS FOR MAJOR STUDENTS.

The botany of the Major Examination is almost entirely covered by Lowson's book, and more than covered by Green's 'Manual of Botany' (Churchill, 17s. 6d.), or Strasburger's 'Text-Book of Botany' (Macmillan, 18s. net), many of the examples in the last-mentioned work being medicinal plants. Newth's 'Inorganic Chemistry' should be supplemented by Bloxam's 'Chemistry' (Churchill, 18s. 6d.), while Perkin and Kipping's 'Organic Chemistry' should be followed by Bernthsen's 'Organic Chemistry' (Blackie, 7s. 6d.). Woodward's 'Chemical Arithmetic,' Parts 1 and 2 (Simpkin, Marshall, 5s. 6d.), deals with the necessary calculations, while for practical chemistry the best works are Muter's 'Analytical Chemistry' (Baillière, 6s. 6d.), Fresenius' 'Qualitative Chemical Analysis' (Churchill, 15s.), Clowes and Coleman's 'Quantitative Chemical Analysis' (Churchill, 10s.), and Hewitt's 'Organic Chemical Manipulation' (Whittaker, 4s. 6d.). The physics of the Major should be studied from Aldous' 'Elementary Course of Physics' (Macmillan, 7s. 6d.), supplemented by Briggs and Bryan's 'Hydrostatics' (Clive, 2s.), Glazebrook's 'Light and Heat' (Cambridge Press, 5s.), and Thompson's 'Magnetism and Electricity' (Macmillan, 4s. 6d.) as works of reference, and Woodward's 'Arithmetical Physics,' Parts 1*a* and 2*a* (Simpkin, Marshall, 3s.), for calculations. The materia medica of the Major is fully dealt with in the works already recommended for the Minor, except as regards the histological examination of drugs and their powders. For information on the latter subject the student should consult the British Pharmacopœia, Collin's 'Poudres Officinales' (Octave Doin, 4s.), and Greenish's 'Microscopical Examination of Foods and Drugs' (Churchill, 10s. 6d. net).

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

The Pharmaceutical Society was founded in 1841, incorporated by Royal Charter in 1843, the Charter confirmed by the Pharmacy Act, 1852, and the Society invested with further powers by the Pharmacy Act, 1868. The Society was established for the purpose of advancing chemistry and pharmacy and promoting a uniform system of education of those who should practise the same, and also for the protection of those who carry on the business of chemists and druggists; also to provide a fund for the relief of the distressed members and associates of the Society, and of their widows and orphans. How the Society has fulfilled the intentions of its founders is explained in an interesting "Historical Introduction" published in the 'Calendar,' a copy of which should be in the possession of every pharmaceutical student and practising pharmacist. The Secretary and Registrar of the Pharmaceutical Society is Mr. Richard Bremridge, 17, Bloomsbury Square, London, W.C., to whom all communications should be addressed.

Subscriptions to the Society.

	Annual Subscription. £	s.	d.
Persons who are registered as "Apprentices or Students" are eligible to be elected "Student-Associates" of the Society	0	10	6
Persons who are registered as Pharmaceutical Chemists, or as Chemists and Druggists, are eligible to be elected Members of the Society	1	1	0
Life Composition fee for Members	10	10	0

All subscriptions are payable on application for election, and become due on January 1 in each succeeding year.

Privileges of Subscribers to the Society.

Members and Student-Associates of the Society are supplied, free of charge, with the Journal of the Society regularly as published. They have also the use of the Library and Museums, both in London and Edinburgh. Members may vote annually at the election of the Council of the Society, and thus have a share in framing its administrative policy. They also have a voice in the administration of the Benevolent Fund of the Society, and, in case of need, may receive assistance therefrom. Student-Associates of the Society are eligible, under certain conditions, to compete for the Jacob Bell Scholarships, the Manchester Pharmaceutical Association Scholarship, and the Herbarium Prize. Student-Associates are charged reduced fees for the courses of instruction in the School of Pharmacy, 17, Bloomsbury Square, London, W.C. The Curator of the Museums is always willing to give Student-Associates and members advice and assistance with regard to the collection or identification of medicinal or other plants.

The Calendar of the Pharmaceutical Society.

The 'Calendar of the Pharmaceutical Society' contains the questions set for the Major and other examinations, the Society's Bye-Laws, the Pharmacy Acts, and other information of value to students and pharmacists. Copies may be obtained from the Registrar of the Pharmaceutical Society, price 2s., or post free 2s. 4d. Postage is paid in the case of members who purchase copies.

PHARMACEUTICAL QUALIFICATION IN IRELAND.

THE qualification to practise pharmacy in Great Britain does not entitle its holder to practise in Ireland, nor are the Irish certificates recognised in Great Britain.

A candidate for the pharmaceutical licence in Ireland must first pass the Preliminary Examination of the Pharmaceutical Society of Ireland, or some other approved examination, particulars regarding which can be obtained from the Registrar, 67, Lower Mount Street, Dublin.

Preliminary Examination.

The Preliminary Examination of the Pharmaceutical Society of Ireland is held on the first Tuesday of January, April, July, and October, and includes the following subjects:—Latin, English, arithmetic, algebra, geometry, elementary theoretical chemistry. In addition, candidates must pass in one of the following optional subjects:—Elementary physics and mechanics, the rudiments of botany (Oliver's 'Lessons in Elementary Botany.' Part 1), French, German, or any other modern language. Certificates of certain other examining bodies are accepted in lieu of this examination. The fee for the examination is £2 2s., which should be lodged in the Bank of Ireland to the credit of the Pharmaceutical Society of Ireland, and the receipt sent with the candidate's application to the Registrar, at the Society's office, 67, Lower Mount Street, Dublin, not later than the Tuesday fortnight preceding the day of examination. The optional subject selected should be stated, and the application be accompanied by a certificate of birth. A candidate who has failed to pass is at liberty to present himself for re-examination six months later on payment of half-a-guinea.

The following is the examination syllabus:—

Latin.—To translate into English, and parse sentences from a Latin author:—Cæsar's *Commentaries* (De Bello Gallico), first book; or Virgil's *Æneid*, first book. To translate an easy sentence into Latin.

English.—English grammar, including orthography and parsing. To write on a subject selected by the Examiner; and to write from dictation.

Arithmetic.—The first four rules, simple proportion, vulgar fractions, and decimals. To describe the British weights and measures, and the Metric System.

Algebra.—As far as simple equations, inclusive.

Geometry.—Including the first book of Euclid.

Elementary Theoretical Chemistry.—The following are the subjects of examination in elementary theoretical chemistry:—*Chemical Action*—Illustrations and examples. Simple and compound substances. Atoms and molecules. Chemical symbols and nomenclature; formulæ and equations. General nature of acids, bases, and salts. *Combustion.*—Structure and properties of flame. *Water.*—Proofs of composition. Methods of purification. *The Air.*—Its constitution. Reasons for considering it a mixture and not a compound The chief physical and chemical characters, with methods of preparation of the following elements and compounds:—Hydrogen, oxygen (and ozone), nitrogen, carbon, chlorine, sulphur, nitrous oxide, nitric oxide, nitric acid, ammonia, carbon dioxide, carbon monoxide, marsh gas, olefiant gas, hydrochloric acid, sulphur dioxide, sulphurous acid, sulphuric acid, sulphuretted hydrogen.

Optional subjects:—

Elementary Physics and Mechanics.—Sound, light, and heat, as given in Ganot's 'Elementary Course of Natural Philosophy'; mechanics of solids and fluids, comprising the elements of statics, dynamics, and hydrostatics.

The Rudiments of Botany.—Oliver's 'Lessons in Elementary Botany,' Part I.

French, German, or other Modern Language.

Assistant's Certificates.

Certificates for the qualification of assistants to pharmaceutical chemists are granted on passing the Preliminary examination or its equivalent and a special examination in the following subjects:—Prescription-reading, practical dispensing, materia medica and pharmacy. Also an examination in the Sale of Poisons (Ireland) Act. The fee for the examination is £2 2s., but rejected candidates may present themselves again after a lapse of six months, on payment of 10s. 6d. A necessary condition in the case of all candidates is that they must have been engaged for four years in an open pharmacy kept (*a*) by a pharmaceutical chemist or an apothecary in Ireland, or (*b*) by a pharmaceutical chemist or chemist and druggist in Great Britain.

The following is the examination syllabus:—

Prescriptions.—Candidates will be required to read autograph prescriptions, translate them into English, render a correct translation of the directions for use, and detect unusual doses.

Practical Dispensing.—To weigh, measure, and compound medicines, write the directions in suitable language, finish and properly direct each package.

Materia Medica and Quality of Specimens.—To recognise the Pharmacopœia chemicals in frequent demand, and specimens of roots, barks, leaves, fruits, resins, and gums, in ordinary use; also to estimate the quality of each specimen submitted, and its freedom from adulteration.

Pharmacy.—To recognise the preparations of the Pharmacopœia which are not of a definite chemical nature, such as extracts, tinctures, and powders, and give the proportions of the more active ingredients. The candidates will also be examined in the Sale of Poisons (Ireland) Act.

Registered Druggists.

Registered druggists may sell poisons, but are not entitled to compound medical prescriptions. The qualification of "registered druggist" is acquired by passing an examination testing the candidate's knowledge of English orthography and composition, arithmetic, the weights and measures of the British Pharmacopœia, the appearance and properties of the various drugs and chemicals in general use, and the Irish Poisons Act. The candidate must previously have served a four years' apprenticeship with a pharmaceutical chemist, licentiate apothecary, registered chemist and druggist, or registered druggist; and be twenty-one years of age. The examination fee is £2 2s., and there is a registration fee of the same amount.

The Pharmaceutical Licence.

The candidate for the pharmaceutical licence must have attained the age of twenty-one years, passed the Preliminary not less than twelve months previously, served four years, as for the assistants' certificate, or four years to a registered druggist, or chemist and druggist, and two years in an open pharmacy, and attended a course in practical chemistry of not less than three months' duration, including 100 hours' practical work at the bench, and a course in botany and materia medica; he will have fulfilled all the conditions imposed on those who seek to pass the final examination, and acquire the right to term themselves "pharmaceutical chemists." This qualification is superior to that of the British "chemist and druggist," as it gives the holder the extra advantage of enjoying a monopoly in compounding medical prescriptions. The examination subjects are botany, materia medica, general and pharmaceutical chemistry, and practical pharmacy. A clear fortnight's notice must be given to the Registrar, the fee of £5 5s. being also paid, and proofs submitted that the candidate has fulfilled the different requirements of the Society. He will then be summoned in due course to attend the examinations, which are held at Dublin on the second Wednesday and following days of January, April, July, and October. If unsuccessful, the candidate can try again after the lapse of six months, on payment of £1 11s. 6d.

The following is the examination syllabus:—

Botany.—To recognise the principal indigenous plants used in medicine, to refer them to their natural orders, and to give the definitions and the distinctive characters of their several parts.

Materia Medica.—To recognise specimens of the drugs of the Pharmacopœia, to describe their characters and active principles, name the sources from which they are obtained, and the official preparations into which they enter; and to detect adulterations.

General and Pharmaceutical Chemistry.—The elementary laws of chemistry and physics, including chemical equations. To recognise the chemical substances of the Pharmacopœia; to describe the processes by which they are obtained; qualitative analysis (including the tests of the Pharmacopœia) and volumetric analysis; and to submit to a practical examination in these subjects.

Practical Pharmacy.—To translate Latin prescriptions; to detect dangerous doses; to compound and dispense correctly. To explain the processes of making the non-chemical preparations of the Pharmacopœia, and to recognise them. To submit to an examination in the Sale of Poisons (Ireland) Act.

LONDON MATRICULATION EXAMINATION.

The Matriculation Examination and all other examinations of the University of London are open to men and women alike. Three examinations are held in each year, in January, July, and September. Those who intend to enter for the September examination must apply to the Principal of the University, South Kensington, S.W., for a form of entry, on or before Tuesday, September 1. Candidates, who must have completed their sixteenth year, must pay a fee of £2, which shall be payable at every re-entry, except in the case of candidates who failed in or before January, 1902, who may for the present be admitted to subsequent examinations by payment at any such entry of a fee of £1.

For students of pharmacy the London Matriculation is, as has frequently been stated in these columns, the examination which will be found most generally useful, as, provided certain subjects have been successfully negotiated, the student is thereby exempt from the preliminary examination of almost any calling which he may subsequently desire to enter. One special word of caution to pharmaceutical students is, however, rendered necessary by recent changes in the conditions of the examination. Latin, which is not now a compulsory subject at matriculation, rightly remains such for the purposes of registration before entering for the Minor Examination of the Pharmaceutical Society, so that, if the matriculation is to serve the purpose required by most students of pharmacy, Latin must be taken.

Candidates for matriculation will be expected to show a competent knowledge of (1) English, (2) elementary mathematics, (3) Latin, or elementary mechanics, or elementary physics, or elementary chemistry, or elementary botany, (4) two of the following subjects, neither of which has already been taken under (3):—Latin, Greek, French, German, Italian, and other foreign languages, history, geography, logic, geometrical and mechanical drawing, advanced mathematics, elementary mechanics, elementary chemistry, elementary physics (heat, light and sound, or electricity and magnetism), elementary biology (botany or zoology). Briefly, a candidate for matriculation need henceforth only satisfy the examiners in (1) English, (2) elementary mathematics, (3) elementary chemistry or some other science, and (4) any two foreign languages, or one foreign language and one other science. In each subject except elementary mathematics there will be one paper of three hours, but in mathematics there will be two such papers. The following extracts from the revised regulations show the scope of the examination:—

English.

The paper will test knowledge and command of English by questions in composition, précis-writing, paraphrase, and analysis of sentences. Some of the questions will involve a knowledge of the most salient facts in English history and general geography.

Elementary Mathematics.

Arithmetic.—Principles and processes applied to whole numbers and vulgar and decimal fractions. Metric system. Approximations to a specified degree of accuracy. Contracted multiplication and division of decimals. Ratio and proportion. Percentage. Practical applications of arithmetic.

Algebra.—Symbolical expressions of general results in arithmetic. Algebraical laws and their applications. Factors of simple binomial or quadratic expressions. Equations of the first or second degree and problems leading thereto. Square root. Graphs of simple rational integral algebraic functions. Arithmetic and harmonic progression. Geometric progression.

Euclid.—The subjects of the First Four Books of Euclid, with simple deductions.

Latin and Greek.

The papers in these languages shall contain passages to be translated into English from Latin and Greek books not previously prescribed, together with questions on grammar and simple and easy sentences of English to be translated into Latin and Greek. Special stress is laid on accuracy in the answers to the grammar questions, and on the correct rendering of English into Latin and Greek respectively.

French, German, Etc.

The paper shall contain (1) passages for translation into English from the language in question, (2) a piece of easy translation into the language in question, (3) questions on grammar, limited to accidence and elementary syntax.

Elementary Chemistry.

The sources and properties of the more important non-metallic elements and of their chief compounds. Air and water. Chemical theory. General characteristics of metals as a class. Interaction of metals, acids, and bases. Facts relating to the chemistry of daily life.

Botany.

Elementary morphology, including branching and inflorescence. Pollination, seed dispersal, germination. Characters of twelve common natural orders. Simple cellular structure. Nutrition, transpiration, respiration, water-culture.

SCHOOLS AND COLLEGES OF PHARMACY.

LONDON.

Name of School.	Address.	Teachers.	Minor Course.	Major Course.	Other Courses.
School of Pharmacy ..	17, Bloomsbury Sq., W.C.	Professors of Botany, Chemistry, and Pharmaceutics, assisted by demonstrators	Inclusive fee, £30	Inclusive fee, £18	Students who have passed the Major examination are eligible for admission to the Research Laboratory, where advanced instruction in the methods of scientific investigation is given, without fee.
Brixton School of Chemistry and Pharmacy	171, Brixton Road, S.W.	Dr. A. B. Griffiths (Principal)	Particulars from the Principal	Particulars from the Principal	Pupils coached for the B.Sc., M.B. of London and Durham, Apothecaries' Hall, Army and Navy, and other examinations. Courses in research work and commercial analysis. Special classes for ladies preparing for the Apothecaries' Assistants' certificate.
Central School of Pharmacy	2, Charterhouse St., E.C.	C. Edward Sage (Principal)	Fee, £10 10s.......	Particulars from the Principal	Evening classes for Minor students. Private tutors in chemistry for all examinations.
London College of Chemistry, Pharmacy, and Botany	323, Clapham Road, S.W.	Henry Wootton, B.Sc. (Lond.) (Principal), assisted by demonstrators	Fee, £9 19s. 6d.; two terms, £17 17s.	Fee, £6 16s. 6d.; two terms, £11 11s.	Special tutorial course and evening classes for Minor and Major students and for the College of Preceptors' certificate.
London College of Pharmacy and Chemistry for Ladies	5, Westbourne Park Road, W.	Claude St. Aubyn Farrer (Principal)	Particulars from the Secretary	Particulars from the Secretary	Postal tuition and classes for the Apothecaries' Assistants' certificate.
Metropolitan College of Pharmacy	160 and 162, Kennington Pk. Road, S.E.	W. Watson-Will (Principal), assisted by demonstrators	Fees, £10 10s.; two terms (spring and summer), £19 19s.; three terms, £28 10s.; tutorial course, £6 6s.	Fee, £8 8s.......	Special tutorial course and evening classes for Minor and Major students.
Private and Class Tuition	7, Gt. Castle St., Regent St., W.	H. J. Carson	Particulars from the Principal	Particulars from the Principal	Particulars from the Principal.
Private and Postal Tuition	Burlington Correspondence Coll., 8, Crescent Grove, Clapham, S.W.	J. Charleston, B.A.	Particulars from the Principal	Particulars from the Principal	Particulars from the Principal.
	55 - 56, Chancery Lane, W.C.	A. H. Dawes..............	Particulars from the Principal	Particulars from the Principal	Particulars from the Principal.
South London School of Pharmacy, Ltd.	325, Kennington Road, S.E.	J. Thomas, F. Armstrong, W. F. Mawer	Fee, £8 8s. per term	Fee, £6 6s. per term	
Westminster College of Chemistry and Pharmacy, Ltd.	Trinity Sq., Boro., S.E.	G. S. V. Wills (Principal), assisted by demonstrators	Fee, £8 8s.; two courses, £12 12s.; until qualified, £15 15s.	Fee, £8 8s.......	Classes for the Apothecaries' Assistants' certificate, and evening classes for Minor and Major students; 'Wills' Postal Universal System.'

PROVINCIAL SCHOOLS AND COLLEGES.

BARROW-IN-FURNESS.					
Barrow - in - Furness Technical School	Barrow-in-Furness	—	—	—	Classes in theoretical and practical chemistry, physiology, hygiene, and botany. Particulars from Mr. C. F. Preston, Town Clerk.
BIRMINGHAM.					
Birmingham Municipal Technical School	Suffolk Street......	W. E. Sumpner (Principal), assisted by lecturers	—	—	Day and evening classes in theoretical and practical chemistry, and evening classes in botany and physics. Particulars from the Principal.
Central School of Pharmacy	90, New Street	F. Stokes Dewson (Principal)	Particulars from the Principal ..	Particulars from the Principal..	Day and evening classes in subjects required for Pharmaceutical Examinations.
Temple Chambers Tutorial Classes	Temple Chambers, Broad St. Corner	F. H. Alcock (Principal) ..	Fee, £8 8s. per quarter	Particulars from the Principal	Special facilities for students desirous of becoming practical pharmacists.
University of Birmingham	Birmingham	—	—	—	Classes in chemistry, botany, materia medica, pharmacy, etc. Particulars from the Secretary.
BRADFORD.					
Bradford Municipal Technical College	Bradford	W. M. Gardner (Chemistry), assisted by lecturers. J. A. Tomkins (Physics). W. West (Botany, Materia Medica, Pharmacy, etc.)	Full course. Particulars from the Secretary.	Full course. Particulars from the Secretary.	Day and evening classes in organic and inorganic chemistry, physics, botany, materia medica, pharmacy, etc. Practical work in all subjects. Large chemical, physical and biological laboratories. Research work. Commercial analysis. Particulars from the Secretary.
BRIGHTON.					
Brighton Municipal Technical Schools	Richmond Terrace	—	—	—	Special classes for pharmaceutica students. Particulars from the Principal.
BRISTOL.					
University College	Bristol	—	—	—	Day and evening classes in chemistry, experimental physics, botany, and Latin. Particulars from the Registrar and Secretary.

Name of School.	Address.	Teachers.	Minor Course.	Major Course.	Other Courses.
CAMBRIDGE.					
Cambridge Pharmaceutical Association	Technical Institute	—	—	—	Classes in chemistry and botany, in conjunction with the Science and Art Department of Kensington. Particulars from Mr. B. S. Campkin, chemist, Mill Road, Cambridge.
DERBY.					
Derby Technical College	Derby	F. W. Shurlock (Principal), assisted by lecturers	—	—	Classes for pharmaceutical students in all subjects for the Minor and Major. Particulars from the Registrar.
EXETER.					
Exeter School of Pharmacy	Royal Albert Memorial College	A. W. Clayden, M.A. (Principal), assisted by lecturers. Lecturer on Pharmacy, Mr. H. Wippell Gadd.	—	—	Day and evening classes for pharmaceutical students in all subjects for the Minor and for London University Science degrees.
LANCASTER.					
Lancaster Municipal Technical School	The Storey Institute	Wm. French, M.A., F.I.C., F.C.S. (Principal), assisted by lecturers. Jas. M. Dowbiggin, Curator and Local Secretary	—	—	Evening classes in chemistry, botany, and physics. Particulars from the Principal.
LEEDS.					
Leeds College of Pharmacy	Clarendon Road ..	F. Pilkington Sargeant, F.C.S. (Principal)	Fee, £8 8s.; two courses, £14 14s.; nine months, £21.	Particulars from the Principal..	Evening and weekly classes, and separate courses in individual subjects, including analysis of urine, water, milk, &c., by arrangement.
Leeds Technical School	Leeds Institute, Cookridge St.	R. E. Barnett. B.Sc. (Lond.), A.R.C.S., and assistants.	—	—	Evening classes for pharmaceutical students in pharmacy, chemistry, physics, and botany. Particulars from Mr. A. Tait, Secretary, the Leeds Institute.
Yorkshire College......	Leeds	—	—	—	Classes for pharmaceutical students, in chemistry, botany, pharmacy, and physics. Particulars from the Secretary.
LIVERPOOL.					
Liverpool School of Pharmacy	6, Sandon Terrace	R. C. Cowley (Principal), assisted by demonstrators	Fee, £10 10s.; two terms, £16 16s...	Fee, £9 9s.	Special tutorial and part-time classes, by arrangement.
University of Liverpool School of Pharmacy	The University	Professors J. C. Brown (Chemistry), L. R. Wilberforce (Physics), R. J. H. Gibson (Botany), W. Carter (Materia Medica), and Prosper H. Marsden (Pharmacy)	Composition fee, £17	Composition fee, £17	
MANCHESTER.					
Manchester College of Chemistry and Pharmacy	225A, Oxford Road	Charles Turner (Principal)	Fee, £8 8s.; two terms, £14 14s.	Fee, £2 2s. per month	Local and evening classes for pharmaceutical students and for the Apothecaries' Assistants' certificate.
Northern College of Pharmacy	100, Burlington St..	George Clayton and F. Lawson (Principals)	Fee, six months' course, £14 14s.; three months, £9 9s.	—	Special afternoon and evening courses, in addition to the ordinary full-time courses.
Owens College, Pharmaceutical Department	Owens College	A. Hopkinson, M.A., LL.D. (Principal), Professors A. W. Stirling (Dean), A. Schuster (Physics), H. B. Dixon and W. H. Perkin (Chemistry), R. B. Wild and Mr. James Grier (Materia Medica, Pharmacy and Pharmacognosy, Pharmaceutical Chemistry), Professor F. E. Weiss and Dr. Darbishire (Botany)	Composition fee, £15 15s.	Composition fee, £15 15s.	Special courses for the B.Sc. Victoria University; for the F.I.C. certificate.
MIDDLESBROUGH.					
Middlesbrough High School	Middlesbrough	—	Particulars from the Secretary	—	Classes for pharmaceutical students and for the first professional examination of the Royal College of Surgeons.
NEWCASTLE-ON-TYNE.					
Durham College of Science	Newcastle-on-Tyne	—	—	—	Courses of lectures on chemistry, physics and botany for pharmaceutical students. Particulars from the Principal.
North of England School of Chemistry and Pharmacy	55, Northumberland Street	F. R. Dudderidge (Principal)	Fee, £8 8s.........	Fee, £7 7s.......	Afternoon and evening classes for Minor and Major students and a special weekly class for junior assistants and apprentices.
NOTTINGHAM.					
Nottingham School of Pharmacy	13, Victoria St.	A. Russell Bennet, F.C.S. (Principal)	Fee, £8 8s.; two terms, £15 15s. ..	Particulars from the Principal	Afternoon and evening classes in all pharmaceutical subjects, and, if desired, subjects may be taken separately.
University College	Nottingham	—	—	—	Classes for pharmaceutical students are held in all the subjects of the Minor and Major Examinations. Prospectus will be forwarded upon application to the Secretary.

Name of School.	Address.	Teachers.	Minor Course.	Major Course.	Other Courses.
		PLYMOUTH.			
Science, etc., Schools	Plymouth	J. B. Brown, B.Sc., J. R. Thackrab, M.A., PhD., F. R. Talbot, B.Sc., W. C. Wilson, M.D., A. S. Tombé, M.A.	—	—	Courses in chemistry, botany and physics. Particulars from the Secretary, 18, Princess Square, Plymouth.
		READING.			
University College, Reading—School of Pharmacy	Reading University College	W. M. Childs, M.A. (Principal), Dr. C. M. Luxmore (Chemistry), Dr. G. J. Burch, F.R.S. (Physics), Frederick W. Keeble, M.A. (Botany), B. J. Austin (Materia Medica)	Particulars from the Registrar	Particulars from the Registrar	—
		SHEFFIELD.			
University College School of Pharmacy	University College	Professor W. C. Williams, Dr. G. Young, and Dr. P. P. Phillips (Chemistry), Professor A. Denny and B. H. Bentley, M.A. (Botany), J. Austen (Materia Medica)	Particulars from Mr. H. Antcliffe, Hon. Sec., Sheffield Pharmaceutical and Chemical Society, Union Offices, West Bar, Sheffield	—	—
		SOUTHAMPTON.			
Hartley University College	Southampton	—	—	—	Day and evening classes in chemistry, biology, zoology, and botany. Particulars from the Registrar.
		SPALDING.			
Grammar School	Spalding	E. Wightman Bell, F.C.S.	—	—	Evening course in practical chemistry for Minor students.
		WOLVERHAMPTON.			
Municipal Science and Technical School	Wolverhampton	W. Whitehouse (Chemistry), H. J. Tench (Physics), S. Phillips (Botany), F. G. Griffiths (Latin)	—	—	Classes for pharmaceutical students in chemistry, botany, physics, and Latin, Particulars from Mr. Geo. F. Chell, Secretary.

SCOTLAND.

Name of School.	Address.	Teachers.	Minor Course.	Major Course.	Other Courses.
		ABERDEEN.			
Robert Gordon's College School of Pharmacy	Aberdeen	Gilbert Simpson (Master)	Fee, £3 3s. (short course); £7 7s. (full course)	Particulars from the Secretary.	Evening classes in all subjects for the Minor, and individual subjects by arrangement.
		EDINBURGH.			
Central School of Chemistry and Pharmacy	26, Clyde Street	W. B. Cowie (Principal) assisted by Demonstrators	Fee, £8 8s. (day); £3 3s. (evening)	Fee, £8 8s.	Special class for preparing students for the Preliminary examinations.
Royal Dispensary and School of Pharmacy	21, West Richmond Street	W. Duncan (Principal), assisted by Demonstrators	Fee, £8 8s. (day); £3 3s. (evening).	Fee, £8 8s.	Individual subjects for the Minor by arrangement.
		GLASGOW.			
Glasgow School of Pharmacy	180, West Regent Street	John Lothian (Principal), assisted by Demonstrators	Fee, £8 8s. (day); £1 1s. each subject (evening)	Fee, £8 8s.	—
West of Scotland College of Pharmacy	157, St. Vincent Street	Thos. S. Barrie (Principal), assisted by Demonstrators	Fee, £8 8s.; two terms, £15 15s.	Particulars from the Principal	Day, evening, and correspondence classes, and a special general education class for students preparing for the Educational Institute of Scotland Examination.

IRELAND.

Name of School.	Address.	Teachers.	Licence Course.	Other Courses.
		BELFAST.		
Municipal Technical Institute (Chemistry Department)	Belfast	S. Templeton, T. Harper, J. Andrews, Chas. McMullan.	Fees, chemistry, 10s.; botany, 7s. 6d. for 26 lessons; materia medica, 7s. 6d. for 26 lessons; pharmacy, 10s. for 26 lessons; practical chemistry, £1 1s. session.	Full courses of instruction in engineering, textiles, chemistry, etc. Abridged prospectus may be had free on application
		DUBLIN.		
Pharmaceutical Schools of Chemistry, Botany, and Materia Medica	67, Lower Mount St.	Professor Tichborne and P. Kelly (Chemistry); T. A. Shegog, F.I.C. (Theoretical Chemistry and Physics); A. H. Laird and H. Hunt (Botany and Materia Medica)	Particulars from the Registrar, Pharmaceutical Society of Ireland, 67, Lower Mount Street, Dublin	—

MEDICAL, DENTAL, AND VETERINARY QUALIFICATION.

THE MEDICAL PROFESSION.

BY A CAMBRIDGE M.B.

LEGAL status as a medical practitioner in the United Kingdom is conferred by admission to the Medical Register, which is kept by the General Medical Council. The sole conditions for admission are the possession of a diploma or diplomas in both medicine and surgery, granted after examination by a recognised body or bodies, and the payment of a fee of £5.

Registration is not compulsory upon medical men, nor can a qualified but unregistered person be proceeded against for practising, provided he does not represent himself to be registered. But no unregistered person can recover at law any charges for advice, etc. Nor can he sign a medical certificate required by any Act of Parliament, nor hold certain public appointments as a medical officer.

Registration as a Medical Student.

The conditions under which the licensing bodies grant their diplomas are subject to the supervision of the General Medical Council, and the following are the regulations of this body relating to the Preliminary Examination:—

Subject to such exceptions as the Council may from time to time allow, every medical student shall, at the commencement of his studentship, be registered in the manner and under the conditions prescribed by the standing resolutions of the Council. No person shall be registered as a medical student who has not attained the age of sixteen years; and for the purpose of ensuring the observance of this regulation, every applicant for registration in the student's register shall be required to produce satisfactory evidence that this age has been attained.

No person shall be allowed to be registered as a medical student unless he shall have previously passed a recognised preliminary examination in the following subjects of general education:—

(*a*) English (Grammar, Paraphrasing, Composition, questions on English History and Geography).

(*b*) Latin (Grammar, Translation into English from unprescribed Latin books, Translation into Latin of a continuous English passage, and of short idiomatic English sentences).

(*c*) Mathematics (Arithmetic; Algebra, including easy quadratic equations; Geometry, including the subject matter of Euclid, books I., II., III., and simple deductions).

(*d*) One of the following subjects:—

(*α*) Greek (Grammar, Translation into English from unprescribed Greek books, Translation into Greek of short idiomatic English sentences), or

(*β*) A Modern Language (Grammar, Translation into English from unprescribed books, Translation of a continuous English passage, and of short idiomatic English sentences).

In many cases the Council will not accept certificates of pass in preliminary examination in general education unless the whole of the subjects included in the Preliminary Examination required by the Council for registration of students of medicine have been passed at the same time. A list of examining bodies whose examinations in general education are recognised by the General Medical Council may be had on application to the Registrar, 299, Oxford Street, W.; or from the Registrar of the Branch Council in Scotland, 48, George Street, Edinburgh; or in Ireland, 35, Dawson Street, Dublin.

A degree in Arts of any university of the United Kingdom, or of the Colonies, or of such other universities as may be recognised from time to time by the Medical Council, is considered a sufficient testimonial of proficiency. In the case of natives of India or of other Oriental countries, whose vernacular is other than English, an examination in a classic Oriental language may be accepted instead of an examination in Latin.

In the case of a student seeking a university degree, he must pass the particular preliminary examination laid down by that university; at many universities no other examination is allowed to take the place of their own Arts examination, which is imposed alike upon all candidates for degrees in any faculty.

Course of Medical Study.

The commencement of the course of professional study recognised by any of the qualifying bodies shall not be reckoned as dating earlier than fifteen days before the date of registration, nor shall a student be registered until he has produced evidence that he has commenced such study.

The period of professional study, from the date of registration to the final examination in Medicine, Surgery, and Midwifery must be one of not less than five years, and certificates of study covering the whole of that period must be submitted before any of the licensing bodies can admit candidates to their final examination.

The course of professional study and examination must include the following subjects:—(i.) Physics, including the elementary mechanics of solids and fluids, and the rudiments of heat, light, and electricity; (ii.) Chemistry, including the principles of the science, and the details which bear on the study of medicine; (iii.) Elementary Biology, animal and vegetable; (iv.) Human Anatomy; (v.) Physiology; (vi.) Materia Medica and Pharmacy; (vii.) Pathology; (viii.) Therapeutics; (ix.) Medicine, including medical anatomy and clinical medicine; (x.) Surgery, including surgical anatomy and clinical surgery; (xi.) Midwifery and Gynæcology; (xii.) Theory and Practice of Vaccination; (xiii.) Forensic Medicine and Toxicology; (xiv.) Hygiene; (xv.) Mental Diseases.

The first four of the five years must be passed at a school or schools of medicine recognised by any of the licensing bodies, but (*a*) the first year may be passed at a university or teaching institution recognised by any of the licensing bodies where the subjects of Physics, Chemistry and Biology are taught; and (*b*) a graduate in Arts or Science of any university recognised by the Medical Council who has spent a year in the study of physics, chemistry and biology, and has passed an examination in three subjects for the degree in question, is held to have completed the first of the five years of medical study, provided that he has registered as a medical student with the General Medical Council. Any student who, previous to registration, has attended a course or courses of study in one or all of the subjects of physics, chemistry, or biology in any university, school of medicine, or teaching institution recognised by any of the licensing bodies, may, without further attendance, be admitted to examination in these subjects, provided always that such course or courses shall not be held to constitute any part of the five years' course of professional study.

The Examinations.

This course of study after registration is somewhat differently sub-divided by different examining corporations; but, in the main, the medical student's examinations include a first, which comprises chemistry, physics, and biology; a second, which deals with human anatomy and physiology; and a third or final, which tests him in medicine, surgery, midwifery, and the various allied branches, such as pathology, materia medica, therapeutics, etc. In many of the curricula these three main examinations are sub-divided each into two or more parts, which the student is at liberty to pass separately; speaking generally, the amount of latitude thus granted is in inverse ratio to the standard of knowledge required in the various subjects.

To obtain a degree in medicine from any of the three premier English universities after the minimum of five years' study is impossible to any but the most exceptionally gifted; but it is well within the power of any man of average intelligence and good application to obtain a diploma, or the degree of one of the minor universities, within that time; and he would probably apportion the five years thus:—One year for the various parts of the "first" examination; two years or rather less, for the "second," and the remaining time for the third. Should the student rest content with the most easily won qualification for registration which it is possible to obtain in London, he might well count on having more than two years for his ward and professional work. For a qualified pharmacist commencing medical study, to whom a good deal of the curriculum is familiar ground, there should be no difficulty in going a step further than this and obtaining the "double qualification" of M.R.C.S., L.R.C.P., within the five years' period.

The examinations for the degree of M.B. of London University are very considerably stiffer than those just mentioned, and this difference is even more marked in the "first" and "second" than in the "third"; one may safely say that a clever and hardworking man would spend not less than a year more over the first two examinations at London University than over the corresponding Diploma examinations. The pharmacist-medical-student would find his Bloomsbury training of very great value in dealing with physics, chemistry, and botany; this leaves only the interesting and not very difficult syllabus of zoology to conquer, and disposes of the first of the three fences, at which no one who gives up his whole time to study should run much risk of "cutting a voluntary." The next fence is the stiffest of the whole course: anatomy and physiology are both large subjects, which require patient application over long periods before the student can safely sit for them. The exact length of time required depends very much on the student's ability and powers of work; also on the particular examining authority whom he has chosen as his censors; but two years is a liberal allowance for any but the major universities examinations. In the final once more the pharmacist realises the value of his previous education. So few of the candidates are capable of writing a presentable prescription that any exception is the more likely to impress the examiners as one to whom a qualification may safely be entrusted. And the opportunities for showing off in this direction are sufficiently numerous, for there is scarcely a question, even in surgery, into which a prescription or two cannot be dragged by one who feels sure of his ground.

As to the question of expense, one may just mention that the fees for the complete course of instruction at the London teaching hospitals range from £120 to £150 roughly. Extra coaching, private tuition, and the like are not necessary to an able man who takes himself seriously; examination and diploma fees, which vary with different bodies, amount to £40 or £50; and the expenditure of a student on books will run him up a nice little bill in five years.

In conclusion, we would bid any pharmacist who thinks of qualifying as a medical man to work hard and keep before him the example of the many who have done it before him, and especially of the few who have attained a high eminence, even in the overcrowded medical profession.

THE DENTAL CURRICULUM.

No person may take the title of dentist, or imply by any means that he is a qualified dentist, unless he is registered, under a penalty of £20; nor can an unregistered person recover at law for advice or attendance. Medical men are excepted from these restrictions.

Those entitled to registration are licentiates in dental surgery or dentistry of any medical authority, foreign and colonial dentists with recognised certificates, and all persons who before July 22, 1878, were *bonâ-fide* practising dentists.

The medical authorities in the United Kingdom from whom the Diploma of Licentiate in Dental Surgery can be obtained are the Royal College of Surgeons, England; the Royal College of Surgeons, Edinburgh; the Faculty of Physicians and Surgeons, Glasgow; and the Royal College of Surgeons, Ireland.

Registration as a Student.

The regulations for registration as a student with the General Medical Council are the same as for a medical student, with the exception that the student must commence his course of mechanical dentistry before registering, in place of the course of medical study which the medical student must begin.

The training in mechanical dentistry is required by the various examining authorities to last three years; it may be pursued by an apprenticeship to a registered dentist or by study at one of the dental schools.

During this time the student should study for and pass the examination in chemistry and physics, which at the English College of Surgeons is identical with Part I. of the first examination for M.R.C.S., L.R.C.P. In order to do this the student, unless doing his mechanical training at a dental school, should pass his apprenticeship in a large town where institutions exist recognised by his examining authority for teaching chemistry and physics. This period of instruction in mechanical dentistry is one of great importance, and three years is not too long to spend in mastering the minutiæ and technique of the art.

The whole of this three years, if the student registers at the commencement, is allowed to count as part of the four years of professional study which is demanded by the examining authorities. The whole or any part of the three years may be taken before registration, but only that part taken after registration counts towards the "four years."

Hospital Work.

At the expiration of the three years' apprenticeship the hospital career should be taken up by simultaneous entrance at a dental and general hospital; and it is of great value to register at this stage as a medical student, not necessarily to take a medical or surgical qualification, but in order to be able to do so at some future time if circumstances should require it. The work done at the general hospital being much the same as for the general qualification, the time so spent is allowed to count as part of the medical curriculum.

The dental hospitals offer every facility for students to acquire a thorough training in the various branches of dental surgery, and the two years spent in them should be made full use of.

Examinations.

At the expiration of six months the student may pass the second professional examination in dental mechanics and dental metallurgy. After two years have elapsed he may pass the final examination in anatomy, physiology, surgery, pathology, and in dental anatomy and physiology, dental surgery, and dental pathology.

Before presenting himself for this examination the student must be twenty-one years of age, and produce his certificates of registration as a student and of four years' professional study. The fees for the two years' course in the general and dental hospitals of London may be roughly stated to average about £135, including the necessary outfit of dental instruments, etc.; but in this, as in the medical profession, fees vary in different parts; those charged in London may be regarded as the maximum. Several of the schools, both in England, Ireland, and Scotland, charge much less. A list is given of the recognised dental schools, and information as to their fees, etc., can be obtained on application. The examination and diploma fees of the four licensing authorities differ slightly; the English and Irish Licentiateships cost 20 guineas, and the Scottish 15 guineas—that is, if the student passes each examination at the first attempt.

The subjects of examination differ but slightly, but the English College divides the syllabus into three examinations, while the others have but two.

Dental Schools.

The following are the dental schools recognised by the examining bodies in Great Britain:—Dental Hospital of London and London School of Dental Surgery, Leicester Square (Morton Smale, Dean); National Dental Hospital and College, Great Portland Street, London, W. (Sydney Spokes, Dean); Guy's Hospital Dental School, S.E. (J. Fawcett, Dean); Institute of Dental Technology and School of Mechnical Dentistry, 4, Langham Chambers, All Souls' Place, W. (G. Cunningham, Principal); University of Birmingham Dental School, and Dental Hospital, 71, Newhall Street (W. A. Addinsell, Hon. Secretary); Bristol (University College) Dental School (Prof. E. M. Skerritt, Dean); Devon and Exeter Dental Hospital, Exeter (Henry Yeo, Hon. Secretary); Liverpool Dental Hospital, Mount Pleasant (Prof. A. M. Paterson, Dean); The Owens College, Manchester (S. Chaffers, Registrar), and Victoria Dental Hospital of Manchester, Devonshire Street, All Saints' (W. Simms, Dean); the Newcastle-upon-Tyne Dental Hospital and School, 37, Nelson Street (R. Lacey Markham, Dean); the Dental Hospital, Bank Street Chambers, Bank Street, Plymouth (B. H. Whiteford, 17, Courtenay Street, Hon. Secretary); the Sheffield (University College) Royal Dental Hospital (Frank Harrison, Hon. Secretary). *Scotland:* Edinburgh Dental Hospital and Schools (W. Guy, Dean); Glasgow Dental Hospital and School, 5, St. Vincent Street (apply to D. M. Alexander, solicitor, 97, West Regent Street, Glasgow). *Ireland:* Dental Hospital of Ireland, Lincoln Place, Dublin (Acting Dean, A. W. W. Baker, M.D.).

A qualification in medicine and surgery, in addition to the Licentiateship in dental surgery, is extremely valuable to the dentist. The best plan for those who have sufficient time is to complete the examination for the medical qualification, and then enter a dental hospital for the dental diploma. In this way the dentist becomes a medical man who has chosen the mouth for his specialty, and naturally obtains a degree of efficiency in dental surgery, which is very difficult to acquire in any other way.

THE VETERINARY PROFESSION.

The veterinary profession offers many attractions to young men with a love for animals, and a taste for horses (by no means the same thing) and the conduct of a practice is consistent with a fair share both of leisure and pleasure. As much as this can hardly be said of its sister (the medical), for, though the leisure may be more than enough to all but a few, the pleasures are restricted or outweighed by the responsibilities. The "vet." is quite in his place in the hunting field and the polo match, and an appearance at an occasional race meeting or steeplechase does not mark him as a man given over to doubtful propensities when he should be wearing a grave face under a silk hat; nay, he is *persona grata* in the paddock or dog show, and the envy of the "horsey" class. If he will not accept the responsibility of a practice of his own, he may obtain an appointment to a stud of horses belonging to a great man or a company; or, if a military life is attractive, he may enter the Army Veterinary Department with a lieutenant's commission, £250 per annum, rations for one or two horses, and a soldier servant to attend as his factotum. In about ten years, some of it spent in India, probably, he will get his captaincy, and, in another ten, his majority, and perhaps lieutenant-colonelcy a few years later. As chief of the A.V.D. his pay and emoluments will come to something still short of a thousand a year, but with each "step" his pay has been increased, and, if he have no favour shown him, nor display any conspicuous ability (in flattering his superiors) he may hope to retire, while still in his prime, with half pay, or a lump sum (commutation), but will find himself unfitted for private practice. The A.V.D. has a grievance, and the veterinary colleges have practically boycotted the Army for the present by not recommending their graduates to enter the Service.

The prefix of "veterinary" to distinguish a lieutenant, captain, major, or colonel, is a sore point, as the "surgeon" has been lopped off the officers of the Army Medical Corps, and the officers of the veterinary department object to be singled out or distinguished from those holding combatant rank, now that the medicals are not under the like disability. A further grievance is the absence of punitive powers. While a veterinary officer must necessarily command men to carry out his instructions, he has no power to punish defaulters, but must lay a complaint, like a ranker, before a combatant officer, who may, perhaps, be his junior.

There is a great shortage of vets. at the present time, and many civil practitioners who were engaged for service during the late war have been retained—as many as cared to be, that is. To most men, a practice of their own is looked forward to, and if it produces no greater net profit than Army pay, it is possible for the practitioner to live on it. The Army man must either mess out, and lose some of his dignity, or join in the usual extravagances which preclude much talent from entering the Service.

It is impossible to speak of the prospects of the young man who would enter the veterinary profession without reference to the partial supersession of horses by other modes of traction. With Coventry alone producing 8,000 motor-cars during the past year and another 80,000 said to be already in use, with tramway companies discarding thousands of horses for electric traction, and the rapid development and extension of other dynamics, it would at least appear to be unlikely that an increased number of veterinary surgeons would find remunerative employment; but there will, doubtless, always be a need for doctors of animals, although the writing on the wall of the R.C.V.S. should soon read Ichabod. It is a profession which has risen very rapidly in public esteem, but many of its best men take a pessimistic view of its future.

How to Become a Veterinary Surgeon.

A matriculation examination little less severe than that demanded by the governing authorities of the medical schools is now required. Papers set at previous examinations can be had on application to the Educational Institute of Scotland, that body having arranged with the Royal College of Veterinary Surgeons to hold examinations in Edinburgh, Glasgow, London, and Dublin simultaneously, three times in the year. The compulsory subjects include under the term "English," dictation, composition, parsing, and derivations. Latin grammar, translation into English from Cæsar de Bello Gallico, Book III.; and Virgil, Æneid, Book II.; and translation of easy passage, not taken from specified author. Mathematics, including Arithmetic, the common rules and vulgar and decimal fractions. Algebra, up to and including simple equations. Geometry, Euclid, Books I.-III., with easy deductions. One also of the following optional subjects must be included among the compulsory: Greek, French, German, Italian, or any other modern language or logic. The compulsory and optional subjects must all be passed at one time. The fee for this examination is £1. With the certificate of this Institute, or one of equal value and recognised by the Royal College of Veterinary Surgeons, the student may present himself at one of the schools. There is but one to serve all England, and known as the Royal Veterinary College, at Camden Town. There are two in Edinburgh, and one in Glasgow, while a new veterinary college has quite recently got into working order in Dublin. A testimonial of good character is required before the student can sign his name on the books and declare his willingness to abide by the rules. A fee of eighty guineas may be paid on entrance, to secure all the advantages of a four years' course, or it may be paid in four equal instalments, as follows: twenty guineas on entry, twenty guineas at the end of the first year, twenty guineas at the end of the second year, and twenty guineas at the end of the third year. A fee of one guinea to the library and reading-room fund must also be paid prior to entry, and a further fee of ten shillings and sixpence annually. A further fee of twenty guineas will have to be paid in advance for each year or portion of a year that a student is in attendance after the termination of the prescribed four years' course of instruction.

The lectures, demonstrations, and instruction of all kinds are in each year of the student's career specially designed to prepare him for the examinations, which are four in number—one at the termination of each academic year (July).

The first, or "A," Examination:—(1) Anatomy of the domesticated animals, bones, ligaments, joints; (2) chemistry and elementary physics; (3) biology, elementary zoology and botany.

The second, or "B," Examination:—(1) Anatomy of the domesticated animals; (2) histology and physiology; (3) stable management, the manipulation of the domesticated animals, and the principles of shoeing.

The third, or "C," Examination:—(1) Morbid anatomy, pathology, and bacteriology; (2) materia medica, pharmacy, therapeutics, and toxicology; (3) veterinary hygiene and dietetics.

The fourth, or "D," Examination:—(1) Principles and practice of veterinary medicine and clinical medicine; (2) principles and practice of veterinary surgery, clinical surgery, obstetrics, and shoeing; (3) meat inspection.

It will be seen from the foregoing that a student must spend a minimum of four years in attendance at a veterinary college, if invariably successful at each of the four tests of his knowledge, and about a hundred pounds in fees. In addition to these items he will need another thirty pounds at least for books, microscope, and other aids to study, and will have to allow for four academic years of eight months or so each, during which he must pay for board and apartments outside the college, for none of them are residential or cater for the student's private life.

A DIPLOMA IN OPTICS.

One of the most popular side-lines attached to the business of a chemist and druggist is the fitting and sale of spectacles, possibly because, in addition to the business being a fairly profitable one, a certain amount of scientific knowledge is required in order to supply the customers' wants satisfactorily. That knowledge the training of a chemist enables him to acquire readily. The

Spectacle Makers' Company,

London, recognising the fact that many chemists were already in the optical business, a short time ago instituted an examination scheme whereby they may obtain a diploma certifying to their competence to conduct the business. Examinations are held about three times a year, there being a Modified examination for those who have been in the business trading under their own names for at least seven years prior to January 1, 1900.

The fees are £3 5s. and £5 5s., according to the conditions under which the candidate joins the Company. Full particulars will be supplied by Colonel T. Davies Sewell, Temple House, Temple Avenue, E.C., on application. For the syllabus of the examinations, see page xii. of the Supplement to the *Pharmaceutical Journal*, March 28, 1903.

The other examining body in optics is the

British Optical Association,

which has recently instituted a new syllabus and regulations for its examinations. The scheme is entirely different from anything that has previously appeared, being exceedingly comprehensive and at the same time entirely devoted to optics and sight-testing. The importance of these new regulations is enhanced by the fact that the London County Council has under consideration at present the matter of an optico-technical institution. The principal changes for new applicants are the extension of the age limit from twenty-one to eighteen, compulsory British nationality, evidence of bench work in the case of those under eighteen, similar evidence from everyone after 1907. The optic grade is abolished, but those who already hold the certificate will be excused that part in future examinations. In the dioptric grade (fee £3 3s.) the lens and frame sections are more clearly defined than before. A practical optician who understands counter work will not find the least difficulty in this section. Section II. is difficult, inasmuch as the element of personality is strongly in evidence—systematic practice in sight-testing is absolutely necessary. Section III. includes the theory, physical, and physiological optics, anatomy of the eye, ethics, etc.

Candidates for the Fellowship examination must in all cases hold the Dioptric examination certificate. It is open to principals who have held for one year the Dioptric certificate of the Association, and to assistants and managers who have held for two years the Dioptric certificate of the Association. The examination fee required by the Association is £5 5s., unless the applicant was a member of the Association previous to October 22, 1896, in which case the fee is £2 12s. 6d. The certificate grants fellowship to the member, and clearly shows the various sections in which he has passed. The scope of both examinations was fully indicated at pp. xii.-xiv. of the Photographic and Optical Supplement to the *Pharmaceutical*

Journal, where mention was also made of the most useful optical books. The Secretary of the British Optical Association, 17, Shaftesbury Avenue, London, W., will supply all information on application.

Optical Classes.

The Spectacle Makers' Company has instituted classes for instruction in the subjects included in its syllabus, which are held at the Northumberland Institute, Clerkenwell, E.C., the course beginning in October and ending about the end of May the following year. Dr. R. M. Walmsley, the principal, will be pleased to supply particulars to those interested. Instruction in visual optics and sight testing can be obtained from Mr. Lionel Laurance, 326, Birkbeck Bank Chambers, London, W.C., who conducts both correspondence and ordinary classes. The Anglo-American Optical Company, 47, Hatton Garden, E.C., conducts correspondence classes, and has a school in which instruction is given to fit students for optical examinations, certificates of competence being given to successful students at the end of the course.

OWENS COLLEGE, MANCHESTER.

PHARMACEUTICAL DEPARTMENT.

Few Universities in the United Kingdom, and none in England, provide such facilities for the study of pharmacy and the allied sciences as does the Victoria University in the Pharmaceutical Department of Owens College, Manchester. The department is under the immediate supervision of the Dean of the Medical Faculty, and the whole of the work is conducted under the guidance of expert professors and demonstrators in the special subjects of physics, chemistry, organic chemistry, botany, etc. Dr. R. B. Wild is Leech Professor of Materia Medica and Therapeutics, and Mr. James Grier is Lecturer in Pharmacognosy, Demonstrator and Assistant Lecturer in Pharmacy. The course for the Minor Examination extends over one winter session, and the course for the Major Examination extends over one winter session. Composition fee for either course, £15 15s. Women students are admitted to the classes in the pharmaceutical department. Pharmaceutical students who desire to obtain the degree of B.Sc. in the Victoria University, and have passed the preliminary examination, may so arrange their courses for the Minor and Major Pharmaceutical Examinations as to include the other subjects required for the Intermediate, which may be taken at the end of their second year. The Manchester Pharmaceutical Scholarship, awarded annually by the Council of the Pharmaceutical Society, is tenable at Owens College. Students have access to the specimens in the museum of materia medica and to the botanical portion of the Manchester Museum, Owens College, as well as to the books in the Leech Library. Special courses of instruction in the microscopical examination of food and drugs are also arranged to meet the requirements of the Institute of Chemistry for the qualification of Public Analyst of Food and Drugs.

In addition to the lectures on Pharmacy and Pharmaceutical Chemistry, Mr. James Grier lectures during the Lent term on Pharmacy Law, dealing with the Apothecaries' Act, Arsenic Act, Pharmacy Acts, Spirits Act, Sale of Food and Drugs Acts, the Medicine Stamps Acts, and the interpretations of them which have obtained in the Courts of Law.

Of special importance in connection with student life at this college are the exceptional opportunities for mental and physical recreation which schools of pharmacy, pure and simple, are in most cases unable to provide. Students of pharmacy at the college are encouraged to take their share with students of medicine, law, and other faculties in this branch of University life.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

SCHOLARSHIPS AND PRIZES.

Student-Associates of the Pharmaceutical Society are supplied, free of charge, with the Journal of the Society regularly as published. They have also the use of the Library and Museums, in London or Edinburgh, and are eligible, under certain conditions, to compete for the Jacob Bell Scholarships, the Manchester Pharmaceutical Association Scholarship, and the Herbarium Prize. They have also the privilege of consulting the Curator of the Society's Museums, and may enter the School of Pharmacy at reduced fees.

ENTRANCE SCHOLARSHIPS TENABLE AT THE SCHOOL OF PHARMACY.

Jacob Bell Memorial Scholarships.*

Two Bell Scholarships are offered annually, and come into operation at the commencement of the Session in October, the scholars being for that Session pupils in the Pharmaceutical Society's School. In the current issue of the *Pharmaceutical Journal* a recent Bell Scholar explains how students should work in order to obtain one of the Scholarships. Each scholarship is of the annual value of thirty pounds, and is tenable for one year only; each Scholar may, however, at the termination of his year of tenure, apply for free admission to the next ensuing Advanced Course in the Society's School. The payment will be made in two moieties; the first to be paid when the Scholar enters upon his studies in the School, and the second at the expiration of five months. In addition to the endowment, the Council provides for the Bell Scholars free laboratory instruction and admission to the lectures, and books of the value of £5—given by the late Thomas Hyde Hills—are divided equally between them.

Subjects of Examination.

Latin: Virgil; the first three books of Æneid;
  Latin prescriptions;
  Translations of Latin into English and English into Latin;
  Translations from any Latin pharmacopœia, and parsing.
French or German.
English: Composition and parsing.
Arithmetic: The first four simple and compound rules, fractions and decimals;
  The British and metric systems of weights and measures.
Botany, Chemistry and Pharmacy: based upon an elementary knowledge of the principal Chemicals, Drugs, and Processes of the British Pharmacopœia such as a student may reasonably be expected to have acquired during his apprenticeship.

Conditions of the Competition.—Each Competitor must give notice to the Registrar on or before June 1. The notice must be accompanied by

(*a*) A Registrar's Certificate of Birth.

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* A scholar is supposed to be commencing his studies, or at least to have made only that progress which may be reasonably looked for during an apprenticeship. The object of the examination is to ascertain that the candidate has such an amount of ability, and affords evidence of having made such use of it in the acquirement of elementary knowledge, as will justify the expectation of his proving a successful student, who may do credit to the appointment, and become a useful and accomplished member of the pharmaceutical body.

(*b*) Testimonials from present or previous employers or masters as to capability, industry, and general conduct.

(*c*) A declaration that the competitor has passed not less, or has been engaged not less than three years in the pharmacy of a Registered Pharmaceutical Chemist, or Chemist and Druggist.

The form on which this declaration is to be made can only be obtained from the Registrar. At the time of giving notice the competitor must be a Student-Associate of the Society. On the day on which the examination is held the competitor must be not less than 20 or more than 22 years of age. No person to whom a Manchester Pharmaceutical Scholarship has been awarded is permitted to compete for a Bell Scholarship. The examination for these scholarships takes place on the third Tuesday in June at London, Edinburgh, and Manchester only. It will be wholly in writing, and will be conducted under such conditions as the Council may deem expedient. The written papers must be distinguished by a motto, and not by the name of the candidate. The examination will be conducted by two or more persons appointed by the Council, and the award made (subject to the approval of the Council) by a Committee consisting of the President, the Vice-President, and the said examiners.

It is understood that revision of the Regulations for the Bell and Manchester Scholarships is in contemplation, but at the present it is impossible to forecast the probable nature of the alterations.

Manchester Pharmaceutical Association Scholarship.

One Scholarship is offered annually, and will be presented at the commencement of the Session of the Pharmaceutical Society's School in October. The Scholar may for that Session be a pupil in the Society's School, or in case he may elect, he may be a pupil in any Provincial School of Pharmacy approved by the Council of the Society. The work for this Scholarship is the same as that for the Bell Scholarships. The Scholarship is of the value of about £26 (the income arising from a sum of £750), which is to be expended for instruction in the Society's School, or in the Provincial School selected by the Scholar and approved by the Council of the Society.

Subjects of Examination.

Latin:—Virgil: *Æneid*, first three books, or
Cæsar; *De Bello Gallico*, first three books of commentaries;*
Latin prescriptions;
Translation of Latin into English and English into Latin;
Translations from any Latin pharmacopœia, and parsing.

French or German.

English: Composition and parsing.

Arithmetic: The first four simple and compound rules, fractions and decimals;
The British and metric systems of weights and measures.

Botany, Chemistry, and Pharmacy: based upon an elementary knowledge of the principal Chemicals, Drugs, and Processes of the British Pharmacopœia such as a Student may reasonably be expected to have acquired during his apprenticeship.

Conditions of the Competition.—Each Competitor must give notice to the Registrar on or before June 1. The notice must be accompanied by

(*a*) Registrar's Certificate of Birth.

(*b*) Testimonials from present or previous employers or masters as to capability, industry, and general conduct.

(*c*) A declaration that the competitor has passed not less, or has been engaged not less than three years in the pharmacy of a Registered Pharmaceutical Chemist, or Chemist and Druggist, in Lancashire, Cheshire, or the High Peak Parliamentary Division of Derbyshire.

(The form on which this declaration is to be made can only be obtained from the Registrar.) At the time of giving notice the competitor must be a Student-Associate of the Society. On the day on which the examination is held the Competitor must be not less than 19 or more than 21 years of age. The Examinations are held at the same time and centres as for the Jacob Bell Scholarships, and the award made in the same manner and by the same persons as in the case of those Scholarships. No person to whom a Bell Scholarship has been awarded is permitted to compete for the Manchester Pharmaceutical Association Scholarship.

Competition of late years has not been so keen as could have been desired, and the attention of candidates who are "geographically" eligible is particularly called to this valuable scholarship.

Herbarium Prize.

A Silver Medal is annually offered by the Council for the best Herbarium, collected in any part of the United Kingdom, the Channel Islands, or the Isle of Man, between the first day of January in one year and the first day of July in the year following, and should there be more than one collection possessing such an amount of merit as to entitle the collector to reward, a second prize consisting of a Bronze Medal, and also Certificates of Honour, will be given at the discretion of the Council. In the event of none of the collections possessing sufficient merit to justify the Council in awarding Medals or Certificates, none will be given.

Conditions of the Competition.—Competitors must be Student-Associates of the Society, and under twenty-one years of age.

The collections must consist of Phanerogamous Plants and Ferns, arranged according to the Natural System adopted in some work on British Botany (such as that of Babington or Hooker), and be accompanied by lists, arranged according to the same method. No collection may contain more than 150 specimens, which must be carefully selected and mounted so as to display the characteristic features of the more prominent and *typical* genera of the chief British Natural Orders. The name of each plant, its habitat, and the date of collection, must be stated on the paper on which it is mounted. Each collection must be accompanied by a note, containing a declaration signed by the collector, and certified by his employer, or a pharmaceutical chemist to whom the collector is known, to the following effect:—

> The specimens which accompany this note were collected by myself, between the first day of January, 19—, and the first day of July, 19—, and were named and arranged without any other assistance than that derived from books.

The merit of the collections will be estimated not so much by the number of plants as by the correctness with which they are named, and by their being typical specimens. The manner in which they are preserved and mounted will also be taken into account. The collections must be forwarded to the Registrar, 17, Bloomsbury Square, so that they may be received by him not later than the first day of July, indorsed "Herbarium for Competition for the Prize." After the opening meeting of the session in October, they will be retained one month, under the care of the Curator of the Museums, and then returned to the collectors, if required.

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* Passages from both authors are given, but a candidate is only required to translate from one author.

POST-GRADUATE PRIZES AND SCHOLARSHIPS.

Pereira Medal and Council Prizes.

Pharmaceutical Chemists who were Members of the Society at the time of passing the Major Examination will be entitled to enter for the following prizes at the competition next following the date on which they passed the Major Examination:—

First Prize.—Pereira Medal in silver, and a present of books value £5, given by the late Thomas Hyde Hills in memory of Jacob Bell.

Second Prize.—The Pharmaceutical Society's Medal in silver.

Third Prize.—The Pharmaceutical Society's Medal in bronze.

Subjects of Examination—Materia Medica; Botany; and Chemistry.

The competition for these prizes takes place in April of every year, after the ordinary meetings in that month of the Boards of Examiners.

The Registrar communicates with each person entitled to compete, requiring not less than three days' notice of his intention to present himself for examination, and no person will be admitted to compete unless he shall have given the required notice.

The examination is a written one, and competitors may be examined in London or in Edinburgh.

The Council selects and appoints special Examiners, who set the questions, examine the answers, and report the result direct to the Council.

Redwood Scholarship.

The Redwood Scholarship is offered biennially in April to pharmaceutical chemists who are desirous of obtaining advanced instruction in chemistry and chemical pharmacology, with a view to conducting original investigations in these subjects. The scholar receives the sum of £60, and is provided, free of cost, with a working bench, apparatus, and materials in the Research Laboratory of the Society. He is required to work under the supervision of the Directors, and to observe the rules and regulations of the Research Laboratory. The nomination of the scholar is made by the Research Committee after ascertaining the candidate's fitness by means of an examination in chemistry and materia medica, or in such other manner as the Committee may think fit. The nomination of the Research Committee is submitted for the approval of the Council, which elects the scholar. This Scholarship, like the others, is open to ladies; indeed, the last holder of the Scholarship was a lady, who became a pharmaceutical chemist after studying at the School of Pharmacy.

Burroughs Scholarship.

The Burroughs Scholarship is offered every other year, alternating with the Redwood Scholarship in April to pharmaceutical chemists who are desirous of obtaining advanced instruction in chemistry and pharmacy, with a view to conducting original investigations in these subjects. The scholar receives the sum of £50, and the conditions of the Scholarship are the same as those relating to the Redwood Scholarship, the Scholarship being tenable in the Research Laboratory of the Society in Bloomsbury Square.

Salters Research Fellowship in Chemistry.

The Fellowship, of the value of £100, is offered annually by the Salters' Company. It is tenable in the Research Laboratory for one year, but may be renewed under certain conditions, and the holder is expected to devote his whole time to original investigation. Application for the Fellowship should be made in the first instance to the Professor of Chemistry to the Pharmaceutical Society, who submits names of suitable candidates to a Committee of the Council, which may make a recommendation. The appointment must receive the approval of the Court of Assistants of the Salters' Company.

PUBLIC APPOINTMENTS.

Dispensers in Naval Hospitals.

Persons holding the Major or Minor qualification of the Pharmaceutical Society of Great Britain or the licence of the Irish Pharmaceutical Society may become Naval Dispensers at the age of twenty-eight years. The pay now starts at the rate of £110 per annum, rising by £5 biennially to £130, and thence by £10 biennially to £230. Each dispenser is included in the list of salaried officers, and is entitled to a pension under the Superannuation Acts. He is provided with free quarters, and if placed in charge of stores has an additional allowance of £20 to £40 per year, and a further allowance to meet the increased cost of living if stationed abroad. The number of dispensers comprising the establishment is sixteen, compared with fifteen prior to the new regulations, the addition being a supernumerary at Haslar. They are stationed as follows:—Haslar, five (including supernumerary); Plymouth, three; Malta, two; Haulbowline, Chatham, Cape of Good Hope, Jamaica, Bermuda, and Hong Kong, one each. Dispensers are entitled to twenty-eight days' annual leave, exclusive of Sundays, subject to such arrangements as the public service may require. In the case of those serving abroad, they are at liberty to reserve their leave from year to year, so as to obtain a lengthened period of absence, not, however, to exceed six months. In cases of sickness, if necessary twelve months' leave is granted, for the first six months on full pay, but after that on half-pay, except when the dispenser would, if superannuated, be entitled to a higher amount, in which case he would be paid at the superannuation rate. From the foregoing it will be seen that the number of Naval dispenserships is limited, but when vacancies occur they are advertised in the *Pharmaceutical Journal*, the appointments being conferred as the result of open competition conducted by the Civil Service Commissioners. The examinations are held in London, Edinburgh and Dublin, and include the following subjects:—(1) Pharmaceutical chemistry; (2) Materia medica, including the B.P. and its Appendix, poisons and their antidotes, dosage of remedies, and preparation of antiseptic solutions; (3) Recognition of chemicals and drugs employed in medicine; (4) Practical pharmacy, reading of prescriptions and detection of errors in prescribing. The examinations in subjects (3) and (4) are *vivâ voce*. The fee is 10s., and successful candidates must satisfy the Civil Service Commissioners as to their physical fitness to serve on foreign stations. Intending candidates should apply to the Director-General of the Medical Department of the Navy, Northumberland Avenue, London, W.C.

Army Compounders.

It is not necessary that candidates who wish to obtain these appointments should be registered chemists, as is the case with dispensers in Naval hospitals. "Compounders" are selected from among the non-commissioned officers of the Royal Army Medical Corps, after passing an examination conducted by the medical officers in pharmacy, materia medica, posology, etc. It is of course necessary for those desirous of becoming Army compounders—even if qualified chemists—to enlist in the corps as privates. On leaving the service, Army compounders are eligible for Poor-law dispenserships.

Poor-Law Dispensers.

The appointment of Poor-law Dispensers is subject to the approval of the Local Government Board. Candidates are required to have a certain amount of qualification for dispensing, but not necessarily that of the Pharmaceutical Society of Great Britain. Still, when vacancies occur, those holding the highest qualification, other things being equal, stand the best chance of obtaining the appointments, which are open to chemists and druggists, pharmaceutical chemists (Ireland), apothecaries, apothecaries' assistants, and retired Army compounders. The salary ranges from £120 to £150 per annum, according to length of service.

Prison Dispensers.

Candidates for these appointments must be between twenty-four and thirty years of age, and must hold the Minor qualification of the Pharmaceutical Society. The prison dispenser is required to wear a uniform similar to that of a warder, and is provided with quarters and medical attendance, in addition to the uniform and a salary of £105 per annum, rising to £140.

Government Laboratory Chemists.

Chemists in the Government laboratory (Somerset House), Clement's Inn Passage, Strand, W.C., are usually appointed in the first place as temporary assistants, being selected by examination from assistants and junior officers in the Inland Revenue and Customs Departments. Appointments in those departments are competed for by men between nineteen and twenty-two years of age, the examination being conducted by the Civil Service Commissioners. Particulars of that examination may be obtained from the Secretary of the Civil Service Commission, Cannon Row, S.W. After a few months' service successful candidates may enter the competition for appointment in the Government Laboratory. Eight assistants are usually appointed each year after passing an examination in the following subjects:—(1) Elementary inorganic chemistry; (2) Elementary organic chemistry, with special reference to the chemistry of brewing, distilling, and other industries, subject to Revenue control; (3) Elementary physics; (4) Algebra (up to quadratic equations); (5) Euclid (Books I. and II.). Before entering the laboratory a two years' course in theoretical and practical chemistry at the Royal College of Science, South Kensington, is required, students receiving their current salaries and, in addition, a grant of £10 for books and special apparatus, £3 being paid the first year. Assistants must remain in the Government Laboratory for not less than three years, and are required to enter into an agreement to refund the cost of their chemical training should they leave the service before the completion of five years from the end of their laboratory studentship. On the advice of the principal, the Treasury allows a special grant of £20 per annum to those assistants who appear to take special interest in their work. In regard to salary, assistants receive the ordinary pay of their rank in the surveying department, and on promotion to the rank of second-class analyst the pay is increased to £160 per annum, with a yearly rise of £15 to £350; analysts of the first-class commence with £400, rising by £20 each year to £550; superintendent analysts are paid from £600 to £650, and the deputy principal £700 to £800. Members of the Government Laboratory staff are entitled, on completion of the full period of service or in case of retirement through ill-health, to a pension of about two-thirds their annual pay.

L.C.C. Gas Testers.

Gas-testing is an occupation in which more than one or two London pharmacists are engaged in their spare time. Under the London County Council there are two distinct staffs—the permanent and the relieving testers, vacancies in the former being filled from the latter. The permanent staff work every weekday, and the duties of the relieving staff are confined to Sundays, holidays, and times of emergency generally. Gas testers on the regular staff receive salaries varying from £120 to £150 per annum, and the occasional officers receive 10s. a day when on duty. Vacancies are not advertised, but Dr. Clowes, the Council's chief chemist, has on his books the names of more than enough men—usually analysts' assistants—to fill any vacancies that may arise. Before men are put on this waiting list they are put through a practical examination in the use of the apparatus employed. The first step to be taken by any who desire appointments as gas testers is to communicate with Dr. Clowes, enclosing particulars of previous experience and testimonials from any influential friends. With regard to the actual work involved, it may be said that three or more photometric tests per diem are to be performed. At least one hour must elapse between two successive tests, so that if the work be completed in one visit a stay of three hours or more is necessary. A frequent custom is, however, for operations to be commenced in the morning and concluded at night. In addition to the photometric tests, analyses, quantitative or qualitative, have to be performed for sulphur, ammonia, and sulphuretted hydrogen.

L.C.C. Asylum Dispenserships.

A number of lunatic asylums are under the control of the London County Council, and at most of them a dispenser is employed. In every case the dispenser holds the qualification of the Pharmaceutical Society, but no special examination is required. Vacancies are advertised in the *Pharmaceutical Journal* as they arise, and the remuneration varies from about £110 a year, with dinner daily, to £140. In a few cases, where the dispenser holds an additional position as photographer or organist to his asylum, the salary is greater.

Public and Technical Analysts.

The only Institution specially incorporated by Royal Charter for the promotion of the education and examination of public and technical analysts is the Institute of Chemistry of Great Britain and Ireland. The Diplomas A.I.C. and F.I.C. are generally recognised as guarantees of competency in analytical chemistry, and indispensable alike to public analysts and to those engaged in chemical industries.

There are three examinations for admission to the grade of Associate—viz., the Preliminary Examination in subjects of general education, the Intermediate Examination in general theoretical and practical chemistry, the Final practical examination in a selected branch of chemical science.

The Preliminary Examination.

Applicants for the studentship must pass this examination before they can be registered. The Council accept as approved Preliminary Examinations a large number of preliminary examinations of Universities, provided the following subjects, all of which must be passed at one time, be included:—English language, Latin, Mathematics comprising arithmetic, algebra (to simple equations inclusive), geometry (Euclid, books I.-III.), and one of the following:—French, German, Italian, any other modern language approved by the Council, Greek, or Logic.

Having passed the Preliminary Examination, any person of not less than seventeen years of age is eligible for registration as a student on paying an annual registration fee of 5s., provided that he is, at the time of application, a student at a college approved by the Council, or a pupil of a Fellow of the Institute, and is *bonâ fide* in course of preparation and training with the object of adopting the profession of analytical and consulting chemistry. Students are expected to present themselves for examination within five years of registration.

Training Required Before Admission to the Intermediate Examination.

Every candidate for the Associateship, except such as are specially exempted, is required to produce evidence that he has undergone a course of training, either A or B.

Training A.—This includes:—(1) A systematic course of three years' study in Theoretical and Practical inorganic and organic chemistry, at least fifteen hours per week being devoted to practical laboratory work, in an approved college; (2) 100 hours in the physical laboratory and fifty lectures on physics in a recognised college; (3) similarly a course of lectures on elementary mathematics at a recognised college, including Euclid, I.-III.; algebra to quadratic equations, ratio and proportion; plane trigonometry to solution of triangles, heights and distances, area of a triangle, and use of logarithms. (A certificate of having satisfactorily passed an approved examination in mathematics covering the work indicated will be accepted, in lieu of a special course.) (4) A course of instruction in one optional subject selected by the candidate from the following:—Mathematics; elementary mechanics, steam and general chemical engineering; metallurgy; geology and mineralogy; elementary physiology; or bacteriology. This course must amount to forty or fifty lectures, or an equivalent amount of laboratory work. The class examinations in each of the subjects taken during training must be passed satisfactorily.

Training B.—This includes at least a two years' course of theoretical and practical chemistry (inorganic and organic), at a selected college, with laboratory work at least fifteen hours a week. In addition, the requirements in physics, elementary mathematics, and one optional subject are the same as for Training A. Beyond this, candidates must have been systematically engaged in analytical chemistry for two other years in the Laboratory of a Fellow of the Institute.

The general regulations as to training provide that no instruction in the requisite subjects will be recognised as part of the curriculum unless given *in the day-time* by recognised teachers at recognised colleges.

Exemptions.

Graduates in Science (in chemistry, physics, and mathematics) in a recognised university are eligible for admission to the Intermediate Examination. The following examinations exempt from the Intermediate, provided the candidate has been trained in accordance with the Regulations of the Institute:—*e.g.*, the Final or Degree Examination for B.Sc., with First or Second Class Honours in Chemistry in either of the following universities:—London (if taken prior to October, 1902), Victoria University and the University of Wales; a First or Second Class in the Final Honour School of Natural Science of the University of Oxford in the subject of chemistry; a First or Second Class in Part II. of the Natural Sciences Tripos at the University of Cambridge, with chemistry as the principal subject; the Final Examination for the Degree of B.Sc., with special distinction in chemistry in the Universities of Aberdeen, Edinburgh, Glasgow, and St. Andrews; the Final Examination for the Degree of B.A., with the Final Examination for B.Sc. or M.A. (involving inorganic or organic chemistry), in the Royal University of Ireland; the Senior Moderatorship in Experimental Science in the University of Dublin; the Final Examination for the Degree of B.Sc. in the University of Durham, or in the University of Birmingham in the subjects of chemistry and physics (First or Second Division) with chemistry as the principal subject, including theoretical and practical inorganic and organic chemistry. Exemption from passing the Intermediate Examination is also granted to candidates for the Associateship who have passed one of the following examinations, and also an approved Preliminary Examination in accordance with the regulations of the Institute:—The Associateship of the City and Guilds of London Central Institute (A.C.G.I.) in the department of Chemistry; the Associateship of the Royal College of Science (Assoc. R.C.Sc.), London, in the Division of Chemistry; and the Associateship of the Royal College of Science, Dublin (Assoc. R.S.Sc.I.) in the Faculty of Applied Chemistry, together with a certificate from the Professor of Chemistry in the R.C.Sc.Dublin, or in some other university or college recognised by the Institute, that the candidate has spent an additional period of six months exclusively in the chemical laboratory of such college.

The Intermediate Associateship Examination.

Every candidate must forward to the Registrar one calendar month before an examination, a note-book containing a record of the chemical work of all kinds done by him during the last two years of his studentship, the genuineness of the record being attested by himself and his teachers. The examination fee is five guineas. The examination lasts four days, and comprises two papers on general theoretical chemistry, organic and inorganic, and an examination in qualitative and quantitative chemistry. Qualitative work includes the analysis of artificial mixtures of alloys, ores, etc.; the preparation of substances; recognition, by tests, of familiar inorganic and organic compounds; the detection of certain gases in gaseous mixtures; the use of the spectroscope and microscope.

Quantitative work includes common volumetric and gravimetric determinations; the determination of carbon, nitrogen, hydrogen, sulphur, and the halogens in organic compounds; volumetric determination of one or more of the constituent gases of a gaseous mixture; determination of boiling and melting points, relative density, solubility; the use of the calorimeter and polariscope.

Final Examination.

The examination occupies four days, except branch (*e*), which lasts five days. Every candidate is required to show a thorough acquaintance with one of the following branches of chemical science, selected by himself:—(*a*) mineral chemistry; (*b*) metallurgical chemistry; (*c*) physical chemistry; (*d*) organic chemistry: including ultimate organic analysis and the determination of the proximate constituents of organic mixtures; the preparation and detailed investigation of organic compounds; (*e*) analysis of food and drugs and of water, including examination and analysis of any food or drug within the meaning of the Sale of Food and Drugs Acts; the assay of alkaloids, the recognition of poisonous chemicals and crude drugs ordinarily found in commerce; the use of the microscope in the detection of adulterations, substitutions, and impurities in such substances; a general knowledge of their therapeutic effects, and of the quantities which, taken internally, would be fatal to man; (*f*) biological chemistry, with special reference to the chemistry and bacteriology of foods, water, and sewage, and the practical applications of biological chemistry to industries. The next examination in branch (*f*) will take place in October, and in other branches in January.

N.B.—The examination in biological chemistry is also open to Fellows and Associates who may desire to obtain certificates of competency in this branch of work. Candidates taking this branch are recommended the following course of study:—A course of fifty lectures on the morphology and physiology of micro-organisms; and practical work to include—(*a*) microscopy, the preparation, staining, mounting, drawing, and recognition of specimens; (*b*) the preparation and study of pure cultures; (*c*) the conduct of fermentation experiments, and the study of chemical changes brought about by bacteria, moulds, yeasts, etc.; (*d*) the study of enzymes and their actions.

The Final Examination fee is £5 5s. Successful candidates who are over twenty-one years of age are elected to the Associateship, and when twenty-four years of age, are eligible for admission to the Fellowship (F.I.C.) without further examination, provided that they produce evidence that since their election to the Associateship, and for a period of three years therefrom, they have been engaged in the study and practical work of applied chemistry in a manner satisfactory to the Council. Entrance fee, five guineas. The annual subscription for Fellows and Associates is one guinea. Life fee, twenty guineas.

Special Examination for Fellows Desiring Appointments as Public Analysts.

The Council has made special provision for Fellows and Associates desirous of becoming qualified for appointments as public analysts by holding examination in therapeutics, pharmacology, and microscopy. The examination is conducted on lines approved by the Local Government Boards, and the certificate is accepted by the Boards as evidence that the holder, being a Fellow or Associate of the Institute, is fully qualified for the office of public analyst under the Sale of Food and Drugs Acts. The course of study is similar to that of branch (*e*) of the Final Examination, which includes this examination. The syllabus comprises:—The recognition of specimens of poisonous chemicals and crude drugs ordinarily found in commerce; the detection, by inspection and by means of the miscoscope, of adulterations, substitutions, and impurities in such substances; questions on their therapeutic effects, and of the quantities that, taken internally, would be fatal to man. This examination is open to Fellows and Associates who have been engaged in the practice of the analysis of food and drugs for at least one year prior to the date of their applications. The examination occupies one day. Fee, two guineas.

SCIENTIFIC AND OTHER SOCIETIES.[*]

British Association for the Advancement of Science.—This is an itinerant association, corresponding to the British Pharmaceutical Conference. Headquarters: Burlington House, Piccadilly, W. Business is facilitated at the meetings by dividing the sciences into sections. This year's annual meeting will be at Southport. For further particulars address the Assistant-General Secretary.

British Pharmaceutical Conference.—Meets once a year, about the beginning of August, to promote the advancement of science and the improvement of pharmaceutical knowledge, as well as to foster good fellowship among its members. The membership is open to all persons interested in pharmacy. The annual subscription of 7s. 6d., payable July 1, entitles members to attend the annual meeting, and to receive a copy of the 'Year-Book' annually. President for 1904, Mr. T. H. W. Idris, J.P., L.C.C.; Secretaries, Mr. E. Saville Peck, M.A. Cantab, and Mr. Edmund White, B.Sc., Lond. Address, the Assistant Secretary, 17, Bloomsbury Square, London, W.C.

Chemical Society of London.—This is the parent chemical society of the world. A candidate for election as a Fellow must send to the Secretaries a certificate stating his name, address, profession, and qualification. Under "qualifications" should be given a concise statement of the candidate's contributions to science, as investigator or author, or of his position and past experience as lecturer, teacher, assistant or student, or in connection with analytical or manufacturing chemistry. If the candidate's qualifications are not included under any of the above heads the reasons for his desiring admission to the Society must be stated. The certificate must be signed by five or more Fellows, of whom at least three must certify their recommendation from personal knowledge. Election is by ballot, after the certificate has been read at three meetings of the Society. Every Fellow has the right to be present and to vote at all meetings of the Society, and to propose candidates for admission, and is entitled to one copy of the publications issued, and to the use of the books in the library. Fellows also have the privilege of introducing two visitors at the ordinary meetings of the Society. Admission fee, £4; annual subscription, £2, due January 1; life composition fee, £30. Meetings are held on the first and third Thursdays, at 8 p.m., from November to June. An occasional meeting at 5 p.m. on Wednesdays is also held. Apply to the Assistant Secretary, Mr. Robert Steele, Burlington House, Piccadilly, London, W.

Dermatological Society, 11, Chandos Street, Cavendish Street, London, W.

General Medical Council.—This Council has power to deal with medical education and registration. Registrar for England, Mr. H. E. Allen, LL.B., B.A., 299, Oxford Street, London, W.

Geological Society, Burlington House, Piccadilly, London, W. —Address, the Secretary.

Income-Tax Adjustment Agency.—The title explains the object of the agency. Address, 12 and 13, Poultry, London, E.C.

Institute of Chemistry.—The Fellowship of this Institute is obtained, except in special cases, by examination. Full particulars of the examinations, etc., are given elsewhere in this issue of the *Pharmaceutical Journal.* Students of the Institute pay an annual registration fee of 5s.; intermediate examination for Associateship, £5 5s.; final examination for Associateship, £5 5s.; special examination (open to Fellows and Associates), £2 2s.; entrance fee to the Fellowship, £5 5s.; annual subscription for Fellows and Associates, £1 1s.; life composition fee, £21. The F.I.C. certificate being recognised by the Local Government Board as evidence of qualification for appointment as public analyst, the Fellowship of the Institute is practically an essential for those desiring such appointments. Mr. David Howard is the President; Mr. Richard B. Pilcher, 30, Bloomsbury Square, W.C., the Secretary.

Linnean Society of London.—Candidates for the Fellowship must be proposed by three or more Fellows, who shall certify from personal knowledge his qualifications, Christian name, surname, rank, profession, and residence. Admission fee, £6; annual contribution, £3; composition fee, £45. Fees due May 24. Fellows are entitled to a copy of all publications of the Society and to the use of the library. Fellows may introduce a friend to the ordinary meetings, which are held on most first and third Thursdays, from November to June, at 8 p.m. Address, Mr. B. D. Jackson, General Secretary, Linnean Society, Burlington House, Piccadilly, London, W.

Lister Institute of Preventive Medicine, Grosvenor Road, London, S.W., and Elstree, Herts, is a richly-endowed institution, devoted mainly to bacteriological work and the preparation of pure animal medications—*e.g.*, various serums.

London Chamber of Commerce, Botolph House, Eastcheap, London, E.C.

London Commercial Sale Rooms, Limited, Mincing Lane, London, E.C.—Sales are held on certain Thursdays in the forenoon.

Pharmaceutical Society of Great Britain, 17, Bloomsbury Square, London, W.C.—Membership is restricted to persons who are duly registered as chemists and druggists. Annual subscription, £1 1s.; life membership, £10 10s. Student-Associates pay an annual subscription of 10s. 6d. See page 338.

Pharmaceutical Society of Ireland, 6, Lower Mount Street, Dublin. Membership is restricted to pharmaceutical chemists. Annual subscription, £1 1s. Associate druggists pay the same subscription.

Physical Society of London.—The headquarters are at Burlington House, Piccadilly, W. Meetings are held on Friday evenings in the rooms of the Chemical Society.

Röntgen Society, 20, Hanover Square, W. (Hon. Secretary, Mr. F. H. Low, M.B., 12, Sinclair Gardens, W.).—The objects of the Society are to discuss the Röntgen Rays in their relation to medicine, the arts and sciences; to exhibit apparatus and methods, to provide a museum, library, and Röntgen Ray appliances, and to publish transactions. Candidates for membership must have shown some scientific interest in the subject. Election is by ballot. Meetings are held monthly. Annual subscription, £1 1s.; life subscription, £15 15s.

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[*] N.B.—Intending candidates for admission to any Society should write to the Secretary for a form of application.

Royal Agricultural Society, 13, Hanover Square, London, W.

Royal Botanic Society.—The gardens of this Society are in the inner circle, Regent's Park, London, N.W. Candidates for the Fellowship must be nominated by one Fellow, and are entitled to free admission to the gardens, which are tastefully laid out. The attractions include numerous palm houses, a house and garden of medicinal plants, a lake, a winter garden, museum, library, and lecture-room. There are numerous special shows of chrysanthemums and other flowers throughout the year, and during the London season a military band plays on the lawn on Wednesdays. Numerous attractive garden *fêtes* are held in the summer evenings. A club-house is provided for Fellows. Lectures are delivered on botanical subjects. Fellows pay an entrance fee of £5 5s. and an annual subscription of £2 2s., or one payment of £26 5s. for life. Members pay £1 10s. annually, or £15 15s. for life; no entrance fee. Fellows have the extra advantage of books of tickets admitting two friends to the gardens on all occasions, except on *fête* days.

Royal College of Physicians, Pall Mall East, London, S.W.

Royal College of Surgeons, 39-43, Lincoln's Inn Fields.—The examination department of these two colleges is on the Victoria Embankment, London, W.C. Address the Secretary, Mr. F. G. Hallett.

Royal College of Veterinary Surgeons, Great College Street, Camden Town, London, N.W.

Royal Horticultural Society, 117, Victoria Street, London, S.W. (Rev. W. Wilks, M.A., Secretary).

Royal Institution of Great Britain, Albemarle Street, Piccadilly, W. (Assistant Secretary, Mr. Henry Young).—The chief objects of this Institution are to promote scientific and literary research, to teach the principles of inductive and experimental science, to exhibit the application of these principles to the arts, and to afford opportunities for study. The chemical and physical laboratories, which are magnificently equipped with apparatus, have been the birthplace of the principal researches of Thomas Young, Humphry Davy, Faraday, Tyndall, Frankland, Dewar, Rayleigh, and other eminent experimentalists. A prominent feature of the work of the Royal Institution is the various courses of lectures on all branches of science, literature, the fine arts, and music, as well as on subjects of general interest. These are held between Christmas and June. Candidates for admission must be proposed by four members; election is by ballot; the admission fee is ten guineas, and the annual subscription five guineas, or one payment of sixty guineas may be made on election. Members have the use of library, reading and writing rooms, and may admit friends to lectures under certain conditions. Non-members are admitted to all the courses of lectures in a session on payment of two guineas. Further particulars may be obtained from the Assistant Secretary.

Royal Meteorological Society, 70, Victoria Street, London, S.W.

Royal Microscopical Society, 20, Hanover Square, W. (Assistant Secretary, Mr. F. A. Parsons).—This Society was established for the promotion of microscopical and biological science. Ordinary Fellows are elected on a certificate of recommendation signed by three ordinary Fellows, setting forth the usual particulars as to name, residence, etc. Election is by ballot. Admission fee, £2 2s.; annual subscription, £2 2s.; composition fee, £31 10s. Meetings are held at eight p.m. on the third Wednesday in each month from October to June. Visitors are admitted by the introduction of Fellows. The journal, containing the transactions of the Society and a summary of current researches relating to zoology, botany, microscopy, etc., is published bi-monthly, and is forwarded post free to Fellows. The library with the instruments, apparatus, and cabinet of objects, is open for the use of Fellows daily (except Saturdays) from ten a.m. to five p.m.

Royal Photographic Society of Great Britain, 66, Russell Square, London, W.C. (Secretary, Mr. A. W. W. Bartlett).—The aim of this Society is the advancement of photography. Meetings are held on Tuesdays from October to June, those on the third Tuesday in each month being devoted to photomechanical processes, and those on the first Tuesday in each month to lantern lectures. An exhibition is arranged every autumn at the New Gallery, Regent Street, London, W., at which are included selected photographs, apparatus, and materials. The journal is published monthly, and includes abstracts of the most important photographic work throughout the world. There is a museum and a library of 1,500 volumes. Any one who is interested in either the science or the art of photography is eligible for election as an ordinary member. The Fellowship is open only to those members who are able to satisfy the Council that they have ability in one or other of the many branches of the subject, and they have a right to place the letters F.R.P.S. after their names as an indication that their ability has been acknowledged by the Society. Members pay an entrance fee of one guinea, unless they have been members of an affiliated society for at least two years. An annual subscription of one guinea is payable by ordinary members, and two guineas by Fellows. The life subscriptions are ten and twenty guineas respectively. Members have the right of attending all meetings of the Society, and of introducing two visitors to each; they have free admission to the exhibitions of the Society, a number of tickets for their friends, and additional tickets may be purchased at half-price. They receive gratis all publications of the Society, have the free use of the dark rooms, library, and other accommodation, as well as of numerous other dark rooms in this country and abroad. Nomination forms must be signed by two members of the Society. Candidates who are not acquainted with any members should communicate with the Secretary, who will endeavour to arrange for their introduction. (N.B.—This is the rule in most societies.)

Royal Society.—This Society, the pioneer of all the learned societies, stands on a somewhat different footing from all others, for the membership is regarded essentially and entirely as a recognition of special distinction in some branch of science, whereas in many societies the membership is simply a question of paying fees. The Fellowship of the Royal Society is an honour bestowed only on the leaders of science, and as such is much desired by scientific men. It is difficult of attainment. Candidates must be proposed and recommended by a certificate, stating the name, address, rank, profession, and qualification, and signed by six Fellows of the Society, three of whom must certify their personal knowledge of the candidate's fitness for the honour. The certificate must reach the Assistant Secretary (Mr. R. W. F. Harrison), Burlington House, Piccadilly, W., not later than the first Thursday in March. Election is by ballot; personal canvassing is not allowed. Fellows pay an entrance fee of £4, an annual subscription of £2, or a life composition fee of £30. Meetings are held at four p.m. on Thursdays from November to June.

Royal Society of Edinburgh.—Ordinary Fellows residing in Scotland pay an admission fee of two guineas and a yearly subscription of three guineas for ten years, and afterwards two guineas yearly for another fifteen years. Ordinary Fellows not resident in Scotland pay £26 5s. on admission. Ordinary Fellows receive the publications of the Society gratis. Candidates for admission as ordinary Fellows shall make an application in writing and produce a certificate of recommendation signed by at least four ordinary Fellows, two of whom shall certify their recommendation from personal knowledge. Election is by ballot. Meetings are held on the first and third Mondays of every month from November to March, with certain exceptions. The Society possesses a library and museum containing books, manuscripts, objects of natural history, scientific productions, etc.

Society of Apothecaries, London, Water Lane, Blackfriars, E.C. (Secretary, Mr. F. Haydon).—This Society grants a diploma on examination, entitling the holder to be registered as a general medical practitioner.

Society of Arts, 18, John Street, Adelphi, London, W.C.—This Society was formed for the purpose of advancing the useful arts and manufactures of this country, especially through the application of scientific and other researches to the development of commercial industries. The ordinary meetings are held on Wednesdays during the winter at 8 p.m. The Society bestows upon individuals rewards for such productions, inventions, or improvements as tend to benefit the country, directly or indirectly. The Cantor Lectures form a prominent part of each winter's programme. Examinations are held annually at various centres, which are open to any person, the subjects including the principal divisions of a commercial education and music. A programme containing detailed information can be had on application to the Secretary, Sir Henry Trueman Wood, M.A. The annual subscription to the Society is two guineas, life subscription twenty guineas. The privileges of membership include admission to the lectures, exhibitions, conversazioni, library, and reading-room of the Society. Candidates for the same are proposed by three members, one of whom, at least, must sign on personal knowledge, or are nominated by the Council.

Society of Chemical Industry, Palace Chambers, 9, Bridge Street, Westminster, S.W. (General Secretary, Mr. Charles G. Cresswell).—The Society was founded for the advancement of the study and practice of applied chemistry by discussion and by the diffusion of information on applied chemistry and chemical engineering among its members. Local sections have been formed at London, Liverpool, Manchester, Newcastle-on-Tyne, Nottingham, New York, as well as in Scotland (Glasgow and Edinburgh), in Yorkshire, and elsewhere. The monthly journal is of interest to manufacturers, works managers, inventors, and others as recording the latest advances in technical chemistry. Among others therein are sections on acids, alkalies, salts, electro-chemistry, fats, oils, and soap manufacture, resins and varnishes, manures, sugar, starch, gum, foods, disinfectants, fine chemicals, alkaloids, essences and extracts, photography, and analytical chemistry. London members meet in the Chemical Society's rooms, Burlington House, W. The Society holds its annual meetings in July. Annual subscription, 25s.; entrance fee, one guinea. Members are entitled to one monthly copy of the journal. Candidates for admission to the Society must be formally proposed by at least one member to whom they are known personally.

Society of Public Analysts.—The membership of this Society is open to persons who are engaged in the "profession of analytical chemistry," and is not restricted to public analysts holding their appointments under the Sale of Food and Drugs Acts. Election is by ballot, and a candidate must be recommended by not less than four members, of whom three at least must testify from personal knowledge to his "scientific and social fitness." The Society meets in the rooms of the Chemical Society, Burlington House, Piccadilly, W., on the first Wednesday in each month from November to June. Annual subscription, £1 1s. Hon. Secretary, Mr. E. J. Bevan, 4, New Court, Lincoln's Inn, W.C.

University of London, Imperial Institute, South Kensington, London, S.W.

Worshipful Company of Spectacle Makers, Guildhall, E.C. (Clerk, Colonel T. Davies Sewell, to whom all inquiries should be addressed).—The Freedom of the Company is open to members of the optical trade on passing certain theoretical and practical examinations. Further particulars will be found in the Photographic and Optical Supplement to the *P.J.*, published March 28 last, as to examination fees, privileges, etc.

COLLEGE OF PRECEPTORS' EXAMINATIONS.

One of the most popular of the examinations for registration as a student or apprentice is that of the College of Preceptors. A pass is necessary in the first or second classes in the subjects already specified. Candidates may either take all the required subjects at one examination, or they may take part at one examination and the remainder at another. There is no limit to the number of times a candidate may enter for examination, but for pharmaceutical purposes he may count the subjects passed at any two (not more) examinations. The examinations are held in March, July, September, and December at different local centres, the fees being 10s. 6d., to which must be added the local fee, generally 2s. 6d. for each candidate.

A number of alterations in the examination have recently been effected. Thus, alternative papers in geometry are set for second-class candidates; in modern foreign languages first and second class candidates will be allowed to substitute free composition for translation into the foreign language. Practical chemistry may be taken by those who take the second-class chemistry paper, and a second-class paper will be set in magnetism and electricity. Certain other modifications of previous conditions will come into operation in December next. Full information can be obtained from the Secretary of the College of Preceptors, Bloomsbury Square, London, W.C., while the papers set at previous examinations are supplied by Mr. F. Hodgson, 89, Farringdon Street, London, E.C. (price, by post, 7d. each set).

PRACTICAL NOTES AND FORMULÆ.

"White Vanilla" Flavouring Essence.

Vanillin, 30 grains; coumarin, 15 grains; glycerin, 2½ oz.; alcohol, 90 per cent., 3 oz.; water, *q.s.*, to make 20 fl. oz.—*Spatula*, **9**, 277.

Vasoliment of Salicylic Acid.

Salicylic acid, 10, is dissolved with gentle heat in oleic acid, 40; to the solution yellow vaseline oil, 40, and alcoholic solution of ammonia, 10, are added. The vasoliment should be kept in a moderately warm place.—*Pharm. Centralh.*, **44**, 59.

Liquid Silver Polishes.

(1) Prepared chalk, 6; solution of ammonia, 6; methylated spirit, 9; water, 40. (2) Sodium hyposulphite, 2; water, 6; dissolve and add prepared chalk, 1. (2) Oxalic acid, 1; jewellers rouge, 2; prepared chalk, 4; water to make 16.—*Amer. Drugg.*, **42**, 188.

Ointment for Infantile Eczema.

Zinc oxide, 2 drachms; tar ointment, cold cream, of each, ½ oz.; lanoline, 1 oz. Mix.—*Therap. Gaz.* [3], **19**, 320.

PERSONAL VIEWS ON CURRENT TOPICS.

Of Pharmaceutical Training.

BY A. W. BROMLEY.

The Raw Material.

Pharmacy is an occupation which, while it does not call for exceptional ability in any direction, requires good average intelligence and full possession of all faculties. The modern pharmacist must be a good man of business and a capable manager; he must also be a good man of the world, possessing tact and the power of securing the respect and confidence of those with whom he comes in contact. Finally, he must be something of a scientist, capable of using his chemical knowledge in dealing with the hundreds of different substances he has to handle. While it would be a mistake to apprentice a genius to pharmacy, ours is probably the last occupation that should be selected for a fool.

Preliminary Education.

The Preliminary Examination—now, fortunately, a thing of the past—has been responsible for conveying to hundreds a wrong impression of the amount of general education the pharmacist requires. English, Latin and French, geography, arithmetic, and book-keeping may be regarded as essential; German, algebra, euclid, history, physiography (elementary natural science), and even a little Greek are likely to prove useful. Most lads are eager to leave their education unfinished and commence business-life too soon, and parents are apt to admire and encourage this ambition; it arises chiefly from nothing more admirable than love of change. An accepted examination should be passed *before* the commencement of apprenticeship. The London University matriculation examination is a good one to select. A lad should be educated with some allowance for a possible change of ambition. The youth whose one desire at fifteen is to possess a shop with three coloured carboys in the window, may display a taste for pure science or a genius for teaching at twenty. If he has been educated with a view to this contingency, valuable time and possible disappointment may be saved.

Apprenticeship.

The apprenticeship-master should be carefully selected, with a view to obtaining a good sound training. A fairly large mixed country business, where one or two qualified assistants and two or three apprentices are kept, is as a rule the most suitable. In such a business the youngster will see a variety of work and have a variety of teachers—the experienced master, the recently-qualified and up-to-date assistant, and the familiar fellow-apprentice; the last-named, if fairly intelligent himself, will probably teach him more than the other two together. A lad should not be put to work alone with an elderly man, nor should he be apprenticed to his own father. Apprenticeship in a "nice" or good-class business is by no means essential; the easy-going, good-natured master should be avoided; bad teachers make bad pupils

Early Studies.

Two very popular, but very ridiculous, apprentices' fallacies may be dealt with here. One is that it is absurd to commence preparing for an examination four or five years before going in, because much that is learnt would be forgotten in that time. This may be true with regard to dry facts, but the man who has once properly mastered the principles of a science would not forget them, though he might forget the mere technical terms. Nor is the youth who has acquired an elementary knowledge of materia medica and pharmacy likely to forget much while he is handling drugs and galenicals. The apprentice should devote three or four hours a week (not more) to study, get an elementary knowledge of all the subjects he has to deal with, and endeavour, as far as possible, to retain by revision what he has learnt. He should work, if possible, under a teacher, or his reading is likely to become desultory.

Intelligent All-round Knowledge.

Another popular fallacy is that pharmaceutical chemistry and botany are *special* sciences, and that the *ordinary* sciences, taught everywhere under the Science and Art Department arrangements, are practically useless to the young pharmacist. This is very silly. No better introduction to these two sciences than the South Kensington arrangements afford could be wished. The pharmaceutical student should take the elementary and advanced stages in botany and theoretical and practical chemistry, sit for the examinations, and obtain as good a pass as he can. He need have no fear of crowding his mind with knowledge that will not help him to pass the Minor; an intelligent knowledge of science is useful at Bloomsbury Square as elsewhere. Four years is quite long enough for a lad to spend in one pharmacy. Before going to school to prepare for the Minor, he should work for not less than twelve months in each of at least two other establishments; one of these must be a brisk, general dispensing business, such as are found in London suburbs and in good-class health-resorts.

Post-Graduate Training.

After passing the Minor (and the Major if he elects to take the higher qualification), the full-fledged, but not fully trained, pharmacist should proceed to gain good, *varied* experience, spending not less than twelve months nor more than two years in one place, and finishing with a year or two in a good West-end business. A season at a French health resort will make a better pharmacist and a better man of the world of him; and a few months in a drug store will probably make him a better business man, and teach him how some things should not be done. The pharmacist, before going into business for himself or taking a responsible managership, should have at least ten years' experience in not less than five different businesses. The greatest cause of inefficiency is restricted, unvaried experience. It is quite possible for a man to spend twenty years in the trade and then go bankrupt through inexperience. A lifetime of one work in one place is not experience.

The Society's "Compendium of Medicines."

BY WALTER WHITE, LUTON.

A Suggestion.

So far as I can gather from a regular perusal of the Journal, it has been the constant aim and endeavour of the Council of our Society to bring about a large increase in the number of the members. May I suggest that this is a favourable opportunity of achieving the Council's object? It seems to me that every chemist in business must have a copy of the "Compendium of Medicines" about to be issued. Why not copyright the work, and issue it only to members of the Society? Then in course of time supplements will become necessary. Why not issue a yearly supplement only to members? A charge to be made for the "Compendium," and the smaller supplement to be supplied free, the whole of the printing, etc., to be so arranged that the yearly supplement could be pasted into the "Compendium" by the member himself.

Revision of the Major Examination.

BY ERNEST T. NEATHERCOAT.

Is the Change Desirable or Necessary?

The recommendations of the Boards of Examiners of England and Scotland to the Pharmaceutical Council came as a surprise, doubtless, to many students of pharmacy throughout the country. There has for a long time been a loud cry among pharmacists, and in the pharmaceutical world generally, for a division or a revision of the Minor or Qualifying Examination; but a revision into the system on which the Major is worked has not been demanded so vehemently by the pharmaceutical community, despite the fact, I believe, that about two or three years ago the Board of Examiners for Scotland suggested such a revision of the higher examination. It is also from Scotland that the present proposals appear to have emanated, although at the invitation and suggestion of the English Board. There is much to be said in favour of the change, while several reasons have been and can be adduced against so severe a modification of the existing system. It is recommended that candidates for the Major shall be only examined in any two of the four subjects (either chemistry or materia medica being compulsory), all of which have hitherto been compulsory subjects. Here, of course, at the outset, there appears to be an injustice to past Major men, in that whereas they themselves have passed in all four subjects, the later edition of pharmaceutical chemists will only have passed in two out of that number. This might to a certain extent be balanced, under the new *régime* by making those two subjects more stringent or wider in their scope—the latter, perhaps, to be preferred. Hitherto, the chief value of the Major certificate was supposed to be in the fact that pharmaceutical chemists possessed a more extended and deeper knowledge into the various subjects of examination than was the case, naturally, of the Minor man. If the subjects were reduced to two, this extra value would, in consequence, be more limited; but if the subjects were made wider in their scope this, again, would go a long way to meet this objection. It may be taken for granted that, as these recommendations have the endorsement of both the English and Scotch Boards, nothing will be done—or should be—to lower the distinction which at present appertains to the possession of the Major certificate.

The Major in its Relation to Pharmacy.

The Board of Examiners recommends a thorough revision of the Major syllabus, especially with the view of bringing the subjects into closer bearing on actual pharmacy itself. This is eminently desirable, and is exactly what is wanted for those candidates (and they are in the majority) who intend to go into business in after life. It is apparent to most students on reaching the Major course that it tends to the more elevated scientific training, rather than to practical pharmacy itself. Now, this is as it should be to a certain extent, and is, of course, distinctly useful to those candidates who intend to follow up the work and afterwards specialise in chemistry or botany; but it seems to me that the pharmaceutical examinations should, first of all, be for the future of the craft itself. These examinations will not be recognised—outside their own ranks—by other science institutions or societies, and this is another reason why the examinations should not be made too scientific in that direction; that is, in the way of the higher grades of mathematical physics and the like. If a Major man desires to study further into these branches of science, there are many institutions open to him, wherein to acquire that knowledge. There is a branch of physics which might, it appears to me, be made more extensive in its range in the Major syllabus, and that is the optical portion, relating to microscopes, spectacles, etc.—such an extension, as by practical application, would be useful to pharmacists in their business calling.

Bacteriology, Chemical Analysis, Materia Medica.

Another extension of the syllabus which might be useful would be the introduction of a little biology and bacteriology into the botany portion thereof. There is very little doubt but that, in a few years' time, this latter subject will come greatly into prominence in the public mind, and there appears to me to be no reason why the pharmacist should not, after a course of training and personal experiments in the science, take to himself some, at any rate, of the calls that will be made for bacteriological examinations in many forms by the public. The same applies to a systematic training in urine analysis, which also, more and more, will be required by the general public as it becomes enlightened in these matters, as it assuredly is. In both these branches that I have suggested, the botany in the one, and the chemistry of the Major in the other case lend themselves to an extension on these lines—to the advantage of the candidate for examination. The materia medica portion of the syllabus is of great use to the pharmaceutical calling in actual business, enabling them to ascertain, if they so choose, the purity of many of their drug powders. The suggestion that the examinations should only be held twice a year is also, it appears to me, one that should be recommended to the pharmaceutical world. The examination is not the qualifying one, and the number of candidates is not so large as to warrant the examinations taking place more frequently. I would suggest that the importance of the examination would be increased, and the value of the certificate more prized, if the examinations were only held twice a year. A revision is also to be advised, with the object of equalising the subjects.

The Effect on the Minor.

The effect of having the Major Examination halved, or even modified at all, would be that of increasing and intensifying the demand for the division of the Minor. Mr. Glyn-Jones suggested at the Council meeting that if the Major could be divided without fresh legislation, then there should be no difficulty in dividing the Minor Examination. There is no doubt that if the syllabus of the Minor remained the same, a division, in the sense of allowing subjects to be passed separately, or of allowing of a selection of subjects only, would have the effect of increasing the pass-list, and also, probably, the number presenting themselves for examination. The Minor is at present of such a severe character that it leads one to suppose that division would be desirable even in the interests of candidates, and that its syllabus, or system of management, will ere long be revised. Another effect of a division of the Major would in all probability result in a larger number presenting themselves for that examination also, and for these reasons:—Many candidates after passing the Minor at the present time fight shy of a particular subject in the Major syllabus, in regard to its extended scope and detail, but would probably enter on a course of preparation for the higher examination if they knew that they might leave out that particular subject. Again, in the matter of time taken up in sitting for the examination. Many men, who are assistants and have kept up their work, are unable to spare the time for four days in the examination room, whereas they might be more able to get away for one or two days. Also, many men keep up one or two favourite subjects after the Minor is over, and such men might then be tempted to sit for the higher examination who would not think of doing so with four stringently compulsory subjects. Some men might also be induced to study on with the object of taking the Major, if there were only two compulsory subjects of examination.

A Larger Pass-list?

The question as to whether it would increase the numbers in the pass-lists would depend largely upon the revision of the syllabus, whether increased in stringency or otherwise. It appears to me that it should not be made easier to pass the examination on the whole; and if the subjects are limited to two, then the examination should be more searching. A candidate would be at no greater disadvantage than at present, because he would not have so many subjects to study, and would, therefore, have more time to specialise in his two selected subjects. There is much to be said for the recommendation also, that materia medica (or chemistry) should be one of the compulsory subjects. It might have been carried further and materia medica been made compulsory in every case. This is the subject of all the others that the pharmacist in business finds most useful to him, and for this reason, if for no other, it might be made a strictly compulsory subject, and even extended in its scope, but certainly brought into closer relationship to the practical side of pharmacy.

Revision of the Syllabus.

If the syllabus is revised, as is suggested, the probability is strong that the histology section will be given greater scope and wider range, and also made more applicable to practical utility in the pharmacy, such as in the analysis of drug powders for adulteration and the like. It has been suggested that biology should be added to the list of subjects for examination. There is much to be said in favour of this, especially if the subjects were only to be selected from, there appears to be no real reason why there should not be more subjects. But if each subject is compulsory, then it seems to me there is quite enough work required to gain sufficient knowledge of those subjects already in the syllabus to satisfy the examiners without adding to the list, especially if the subjects were made of greater scope. There is also this to be said, that more knowledge of chemistry than is sufficient to pass the Minor is required to go fully into the materia medica of the Major syllabus, so that that subject would certainly have to be kept up, even if it were not one of the subjects selected for examination. One's experience of the Major Examination certainly shows that examination to be somewhat bulky and unwieldy as at present conducted, and a systematic condensation of some of the Minor matters seems desirable. But this is more particularly the case in the Minor Examination, which requires more revision and amendment than even the Major, which latter examination does not draw anything like the number of candidates that the former examination does, and is not of so great a direct importance to the majority of the calling at large. This may be one of the reasons for the suggested modification of the Major—that more should be induced to sit for the examination. This would certainly mean more in the way of fees; but one would surely not like the Major certificate to become too common, or the distinction would get proportionately less. If the modification should prove to work satisfactorily in the higher examination, it is to be hoped that something of a like nature will take place in regard to the Minor, a revision of which would be popular with chemists generally, and should tend to make the qualifying machine work more easily than it does at present. But whatever the criticisms of the new suggestions with regard to the division of the Major, it is certain that the proposals have been well considered and discussed by the Boards of Examiners for England and Scotland—a fact which will, and should, go a long way in satisfying the pharmaceutical community of the direct necessity for the modifications. And it is to be hoped that the results of the revision, if such should take place, will be the raising of the standard of the examination, whether the subjects be lessened or not, and that at the same time they will be arranged in closer relationship to the practice of Pharmacy, which will then be to the advantage of all concerned.

The Work of the Young Pharmacist.

BY J. WOOD.

The Goal.

It has frequently been remarked that a feature which distinguishes the "public man" in the United States of America from his cousin in Great Britain is the comparative youthfulness of the former. Across the "duck-pond" high positions in the State, as in commerce and the professions, are held—and held with credit—by men of an age which, in this country, would be an effectual disqualification. The solution probably lies in the fact that the younger nation, alone of the two, holds zeal and activity to be of an equal importance with discretion and experience. Without entering into a consideration of the relative advantages or disadvantages of either system, there are a few thoughts which suggest themselves as applicable to the state of pharmacy to-day in Great Britain. It may be remembered that the young male pharmacist was strongly criticised by a writer in the *Pharmaceutical Journal* of February 28 of the present year (see p. 299), and, although Mr. Leonard Grange was careful to say that he did not intend his remarks to apply to all, he represented the "typical young man" as a very undesirable sort of person. Perhaps he is; but a word may be said on behalf of many of the younger pharmacists of the day, and expression may be given to feelings which certainly, and very fortunately, are shared by not a few. While it would be futile to pretend that all, or even the majority, of our younger men are filled with anxiety to work in the manner which it is proposed to put forward, there is no doubt that many—and these the more important—possess considerable keenness and zeal for the good of their chosen profession, and a fund of loyalty to the Pharmaceutical Society.

The Barrier.

It should not be necessary to insist on the necessity for encouraging the zealous young pharmacist. He will become, unless the discouragement of his elders prove too strong for him, a leader of the craft in the future, when his zeal may be combined with discretion and experience. But there is too often a danger that the older men, by telling him that he lacks discretion and experience, by refusing to allow the young man to assume responsibilities, by saying in effect, "Leave it to me; you are not old enough to understand the position," may actually stifle that all-important zeal.

> Myself, when young, did eagerly frequent
> Doctor and Saint, and heard great argument
> About it and about, but evermore
> Came out by the same door wherein I went.

I suspect that if the doctor and saint had been able to realise that the young man was capable of thinking for himself, and had treated him in some degree as a trustworthy and practical being, he might have emerged by a different door, with more profit to himself and to the race.

The Means.

If, then, the hypothesis be admitted that some of the young men in pharmacy are ready and willing to work for the good of their calling, in what way can more encouragement be given, and how may their energies be directed into useful channels? My answer would be, first, let them be given some definite work by the headquarter staff or divisional officers of the Society. An assistant recently did valuable service by writing to coroners and chief constables for opinions on the question of poisons legislation, and the replies, embodied as they were in a paper read before a local association, were most valuable. Others might be doing similar service, if it were suggested to them. Let the young men be encouraged, by means of an occasional personal letter or visit, to make some inquiry for the Society; to write a letter to the local press; to send their views occasionally for publication in the Society's Journal; to speak at meetings of the local association as soon as they are eligible for membership; to form, if the town be large enough, a junior chemists' association; to obtain a vote, wherever possible, for Parliamentary elections, and to use it; to persuade others to work for the Bell Scholarships, and to come to the Society's School to study for the examination. These are only a few of the possibilities which suggest themselves as practical and profitable means whereby young pharmacists may be enabled to become, in the words of the President at the prize-giving at the School of Pharmacy, "propagandists for the Society."

The End.

The present system of decentralisation, whereby the Secretary of the Pharmaceutical Society has a representative in almost every Parliamentary division, should make all this guidance of energy a matter of no practical difficulty whatever. Some divisional secretaries are, no doubt, in the habit of looking after the young pharmacists of their locality in this way, but much more might be done. One thing is certain—that the more work of this kind that is given them to do the more wishful will they be to undertake similar work of their own initiative, and the more fitted to carry on the work of the Society in the future. The labourers are plentiful; the field, Heaven knows, is large enough. It would be a terrible reproach if the land were left fallow for the want of a little guidance from the foremen of the Society's work.

NOTE ON MAGNESIUM PYROPHOSPHATE.

BY F. H. ALCOCK.

When determining magnesium compounds quantitatively by the production of the above compound and final weighing, there is always much trouble in getting rid of the last traces of carbon from the filter-paper, and much heat, prolonged for some time, is necessary. To obviate this difficulty many suggestions have been made—notably, moistening with HNO_3, solution of $AmNO_3$, and the like; but I have found that a much safer way (to avoid loss) is to add a few drops of strong HCl aq., dry on the water-bath, and again ignite, when the ash becomes white within three minutes, and the weight remains the same, even after treatment with acid, drying, and ignition several times. Whether the same would be equally available for $Mg_2As_2O_7$ is worth an experiment.

REVIEWS AND NOTICES OF BOOKS.

'A Short Manual of Analytical Chemistry,' Qualitative and Quantitative, Inorganic and Organic. By John Muter, Ph.D., F.R.S.E., F.I.C., etc. Ninth edition—Illustrated. Pp. xiv. + 235. Price 6s. net. London: Baillière, Tindall and Cox, 8, Henrietta Street, W.C. 1903.

No extension of the ground previously covered has been made in this, the ninth edition of Dr. Muter's well-known manual. Perhaps the author has been encouraged by the demand for the eighth edition to leave the book to a great extent unaltered, but one could have wished that some attention had been paid to the defects indicated in the review which appeared in the *Pharmaceutical Journal* nearly five years ago. Particular reference may be made to the use of the word "estimation," when describing the operations of quantitative analysis. It may be well to repeat that "determination" is the more correct and scientific term. Again, more detailed descriptions, with equations, of some of the volumetric processes might with advantage have been given. We have been unable, for example, to find any explanation or description of the processes and reactions involved in the standardisation of potassium bichromate by means of the iodide. A student might well be forgiven if he expressed dissatisfaction with the brief dismissal of this process at page 129, where the reader is informed that "For equivalent liberation of halogens . . . . . the N/10 bichromate (as oxidant) can do the same work as the N/10 permanganate, and on the same principles. The process is done (*sic*) in presence of sulphuric acid, and the liberated iodine is titrated with N/10 'hypo.'" On referring to the article on potassium permanganate, no mention of the reaction is to be found. For the determination of eugenol in clove oil, Thoms' method is described, but no warning is given of the inaccuracy which recent investigators have laid to the charge of the process. At page 214, two curious words, carraway and *Cinnamonii*, strike the unaccustomed eye. But these are nothing more than slight blemishes on a book that deservedly retains a high and honourable position as the best of its kind for pharmaceutical students and pharmacists who desire, without spending time over the more difficult problems of practical chemistry, to be in a position to analyse water, urine, and common articles of food, as well as every drug in the British Pharmacopœia. In addition, the manual is an excellent and highly practical laboratory guide for the so-called "pure chemist."

'Chemistry: Inorganic and Organic.' With Experiments. By Charles Loudon Bloxam. Ninth edition. Rewritten and revised by John Millar Thomson, LL.D., F.R.S., and Arthur G. Bloxam, F.I.C. Pp. xi. + 872. Price 18s. net. London: J. and A. Churchill, 7, Great Marlborough Street. 1903.

Bloxam's 'Chemistry' needs no introduction and no words of commendation to pharmacists or students of pharmacy. The association of Professor Thomson, well known to pharmacists as a former examiner to the Pharmaceutical Society, and Mr. Arthur Bloxam as revisers and editors of the ninth edition may be regarded as a happy circumstance which augurs well for the continued popularity of the text-book. The changes that have been introduced are not of a character to modify to any considerable extent the general scheme and scope of the work. A change has, however, been made in the present edition in the order of treatment of the non-metallic elements, the consideration of Carbon now occurring after that of the Hydrogen, Oxygen, and Nitrogen. The constant references to experiment, which formed so pronounced a feature of earlier editions, have rightly been retained. The time necessary for the printing and production of so large and comprehensive a book has made impossible the inclusion of the very latest information concerning radium, but until further results of original work on this element are available it may be expected that authors of text-books of chemistry will be chary of committing themselves to statements which may within a few months be disproved. The illustrations of the book under review, always good, have in many respects been improved.

'Halation: Prevention and Cure.' No. 1 of "The Photogram" Series of Penny Pamphlets on Photography. Pp. 16. London: Dawbarn and Ward, Limited, 6, Farringdon Avenue, E.C. 1903.

This little booklet, as its title implies, deals with halation' one of the commonest defects in the early work of photographers. An explanation is given of what halation is, and the several factors which lead to it; how to avoid halation when exposing; and how to make the best of halation in development, or when the negative is finished. A chapter is devoted also to backed plates and backing. Other penny pamphlets uniform with "halation" deal with colour-correct photography; how a lens works; and the camera and its movements.

'Fixed Oils, Fats, Butters, and Waxes: Their Preparation and Properties.' By C. R. Alder Wright, D.Sc., F.R.S., etc. Second Edition, edited and partly re-written by C. Ainsworth Mitchell, B.A., F.I.C. With two Plates and 154 Illustrations. Pp. xvi. + 803. Price 25s. net. London: Charles Griffin and Co., Limited, Exeter Street, Strand. 1903.

It is now nearly ten years since the first edition of Dr. Alder Wright's work was published. In that edition Dr. Wright set himself, with no little success, to give general descriptions of the methods whereby animal and vegetable oils and fat are obtained from natural sources, their leading practical applications and uses, and of their chief physical and chemical properties and reactions. He did not, however, except in a few of the more important cases, attempt to deal with the properties and means of detecting the adulteration of individual oils. This omission has now been supplied, and it may at once be said, well supplied, by Mr. Ainsworth Mitchell. A chapter of more than two hundred pages is now specially devoted to the important subject of the systematic description of the adulteration of oils and fats, and consists almost entirely of new matter. With this exception the general idea of the book remains much the same as in the first edition, although the additions to scientific literature on the whole subject during ten years have necessitated considerable revision of details, and, in some cases, amplification. There can be no question but that the book will more than retain the high position which it has held during the past ten years.

'Foods: Their Composition and Analysis.' By Alexander Wynter Blyth, M.R.C.S., F.I.C., and Meredith Wynter Blyth, B.Sc., F.I.C., etc. Fifth Edition. Thoroughly revised, enlarged, and re-written. Pp. 616. Price 21s. London: Charles Griffin and Co., Ltd., Exeter Street, Strand. 1903.

Fresh and more exact legislation on the adulteration of food, improved analytical processes, and new standards of purity for butter, milk and other substances, have rendered necessary to a great extent the re-writing of Messrs. Wynter Blyths' manual. By judicious condensation it has been found possible, while adding much new matter, to keep the size of the book within the limits of previous editions. Among the subjects of the added chapters may be mentioned the detection and determination of arsenic, notably in beer and sugar, the composition and analysis of spices, and the bacteriological examination of water. An introductory essay deals with the history of adulteration of food and drugs in England, France, and Germany, and of the present scientific processes for the detection of adulteration. The provisions of the various Sale of Food and Drugs Acts are detailed and commented on, with references to leading cases, such as Jones *v.* Jones and Dickins *v.* Randerson. A useful chapter is that which describes the application of the microscope, spectroscope, and photographic camera to the chemical investigation of foods. Drugs are not touched upon to any great extent, but among the articles for the analysis of which special directions are given are vinegar, lard, olive oil, cayenne pepper, mustard, ginger, mace, nutmeg, cloves, and pimento. As might be expected of a book intended principally as a manual for public analysts, the greatest amount of space is devoted to the analysis of milk, butter, cheese, and fermented liquors. For all that, there is no important article of food that is not individually dealt with, the tables of "constants" being numerous and clearly compiled. The concluding chapter of fifty-seven pages on the examination and analysis of water is particularly worthy of commendation.

'A Course of Commercial German.' By E. E. Whitfield, M.A., and Carl Kaiser. Pp. 274. Price 3s. 6d. London: Longmans, Green, and Co., 39, Paternoster Row, E.C. 1903.

It has been realised during the last few years that there is nothing "splendid" in the isolation of the English man of business whose mother-tongue is "good enough for him." Experience, too often dearly bought, has taught the man of commerce the necessity of a knowledge of the German language. The scientist, and especially perhaps the chemist, has known, these many years, that if he is to keep abreast of the progress of natural philosophy, of medicine, of pharmacy, indeed of any branch whatever of pure or applied science, a good knowledge of German is indispensable. In the book under review, two writers, respectively of British and German nationality, but each with mixed experience of mercantile correspondence and teaching, have combined to produce a manual that should exemplify the way in which a modern language must be studied for practical use in business. In the introductory portion, only the indispensable parts of German grammar are given, but these are clearly set forth in a manner which should form the groundwork for the purposes of conversation or correspondence. The second portion of the book consists of a number of systematic mercantile vocabularies, with illustrating exercises in the form of letters or dialogues. Incidentally, an acquaintance with German industries, trade-law, shipping, and other subjects of general interest may be gathered by the student who carefully and intelligently translates the numerous and well selected examples which are given for translation in the latter portions of the manual. The appendices are not the least interesting part of the book. One such gives a useful list of standard books of reference, another mentions the commodities listed in the Hamburg market reports (among these are ammoniac, arsenic, drogen, salpetersäure, salzsäure, vanille, and other articles of chemical interest), and a third appendix comprises a table of comparison between German and English weights and prices. Whether the relatively small part assigned to the elements of the language will suffice for the self-taught student to master the remainder of the book is doubtful; but there can be no question that the 'Course' will be helpful, if not all-sufficient, for the student of German for commercial purposes.

HARTLEPOOLS AND DISTRICT CHEMISTS' ASSOCIATION.

FIRST ANNUAL EXCURSION.

Wednesday, August 19, 1903. Travelling in a saloon by train from West Hartlepool, the party arrived at Barnard Castle about 1.30 p.m., luncheon being partaken of during the journey. After arrival, the party indulged in a stroll through the woods, and afterwards paid a visit to the Castle grounds. The next item was a drive to Rokeby, passing on the way the ruins of Egglestone Abbey and paying a visit to that lovely spot at Greta, "The Meeting of the Waters." A walk along the riverside back to the Abbey Bridge completed this portion of the outing, the party returning to Barnard Castle in time for dinner, which was served at the Turk's Head Hotel. At the conclusion of dinner, the Chairman (Ald. Thos. Clarkson) proposed the loyal toast of "The King and Queen," and afterwards alluded to the success which had attended their first outing, and the satisfactory manner in which the arrangements had been made and carried out by the honorary secretary. A short ramble through the town filled up the time until the hour of departure, the party leaving Barnard Castle at 8.55 p.m. and arriving at West Hartlepool about 11 p.m., after a most enjoyable and successful outing.

IRISH CHEMISTS' ASSISTANTS' AND APPRENTICES' ASSOCIATION.

GENERAL MEETING.

Wednesday, August 19, in the Gresham Hotel, Upper Sackville Street, Dublin, Mr. John Frackleton, Belfast, in the chair.

Mr. Thackeray and the Chairman spoke of the need for such an Association, and detailed the history of previous attempts to carry on similar organisations.

The Hon. Secretary (Mr. Aplin) read a few letters from a large number received. The writers expressed sympathy with the movement, and requested to be admitted to membership. The communications were from the north and south of Ireland.

The Chairman invited suggestions for the name of the Association, and, after some discussion, it was resolved that it be known as the "Irish Chemists' Assistants' and Apprentices' Association," and that its membership be open to chemists' assistants and apprentices throughout Ireland.

The meeting then proceeded to the appointment of office bearers and a committee, the following being selected:—President, Mr. Edgar P. Aplin; Vice-Presidents, Messrs. W. McCarthy, R. G. Creed, D. Gilbert, R. W. McKnight, and H. C. Thackeray; Hon. Secretary, Mr. T. J. Doyle; Hon. Treasurer, Mr. William McCarthy, L.P.S.I.

It was resolved, on the motion of Mr. McCarthy, that the annual subscription be 10s. for assistants and 5s. for apprentices, this to include a copy of a trade paper, supplied post free, by arrangement with the publisher.

The Chairman said this was the same as in Belfast. It meant that the apprentices, by paying 5s. year, would get their weekly paper at half price and membership for nothing.

The Secretary was requested to communicate with the trade press in the matter.

Mr. McCarthy said steps would be at once taken to secure permanent meeting rooms.

Upwards of fifty signatures were affixed to the roll of membership.

CONGRESS OF CHAMBERS OF COMMERCE.

MEETING AT MONTREAL.

On Thursday, August 20, 1903, the delegates considered the

Metric System.

Seven resolutions were merged in that of the Birmingham Chamber of Commerce, asserting the advisableness of adopting the metric system of weights and measures for use within the Empire, and urging the necessity for legislative measures to make the use of metric weights and measures compulsory. This resolution was adopted after the discussion upon an amendment, which was defeated, suggesting that the United States should be approached with a view to their adoption of the same system. Another amendment, suggesting the appointment of a Royal Commission to consider the matter, was defeated.

A resolution submitted by the Montreal Chamber of Commerce, in favour of the adoption throughout the Empire of the decimal system of currency, was adopted.

The Wolverhampton Chamber's resolution, declaring that, as Great Britain imposes no licences on commercial travellers representing colonial houses, commercial travellers representing British houses should be free from imposts or licences when travelling in the colonies, was also adopted.

TORQUAY CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Wednesday, August 19, 1903, at the Pavilion Hotel, Torquay, Mr. Newlyn (President) in the chair. There were also present Messrs. Rawling, Ness, Quent, Waymouth, Knight, and Young (Hon. Sec.).

Several letters were read from members, apologising for non-attendance. A member stated that he objected to the Pharmaceutical Society publishing a book of formulæ "in opposition to existing publications."

A vote of thanks was accorded the Hon. Secretary for the admirable manner in which he had organised the recent picnic.

The Council's New Book.

The question was discussed at great length, and whilst one or two objected to the Pharmaceutical Society moving in the matter, the majority were in favour of assisting instead of throwing cold water over the Society, now that they had at last given some attention to trade questions. The following resolutions were eventually unanimously carried:—

> (1) That the question of sending formulæ to the Pharmaceutical Society be left to the individual effort of each member of the Association.
>
> (2) That the Association as a body gives its support to the Pharmaceutical Society in its efforts to assist the trade.

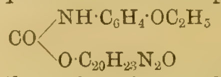
A vote of thanks to the Chairman terminated the proceedings.

NEW REMEDIES.

The Notes in this column embody recent suggestions in therapeutics, for the information of dispensers; they deal with novel applications of drugs and preparations in common use, in addition to new remedies strictly so-called.

Codeine Iodide in Broncho-Pulmonary Affections.—According to Labardie-Lagrave and Rollin, when two equivalents of hydriodic acid are heated with one equivalent of codeine, a salt, which is the di-iodide of codeine (codeine-dihydriodide ?), is formed crystallising in pale yellow needles. It has proved a valuable remedy in asthma, dyspnœa, emphysema, acute bronchitis, and similar affections of the respiratory organs. It is given in the form of a syrup, or in pills in doses of 1/3 gr.; from 2 to 3 gr. may be given in twenty-four hours. It may also be given as a hypodermic injection in doses of 1/6 gr.—*Répertoire* [3], **15**, 318, after *Bull. Méd.*

Quinaphenine.—This body, which is nearly related to euquinine, is a white, tasteless powder, sparingly soluble in water but readily dissolved in acid solutions, with which it forms salts. It is a quinine carbonic acid phenetidide,



$$CO\begin{cases} NH{\cdot}C_6H_4{\cdot}OC_2H_5 \\ O{\cdot}C_{20}H_{23}N_2O \end{cases}$$

and is obtained by the action of para-ethoxylphenylcarbamic acid chloride or para-ethoxyphenylisocyanate on quinine. Quinaphenine sulphate forms yellow crystals which are freely soluble in water. It is given to young children, in whooping cough, in doses of 2 to 3 grains, and to older children 3 to 5 grains. It may be given in chocolate, or to very young children, in milk. As a febrifuge quinaphenine stands between slow working quinine and rapidly acting substances, such as antipyrine, phenacetin, etc. In fevers it is given in daily doses of 20 to 30 grains, administered in two separate doses of half that quantity. It will also be found serviceable in certain cases of neuralgia.—*Pharm. Centralh.*, **44**, 81.

Quinine Lysoginate.—This compound of quinine, discovered by R. Fabingi, quinine diortho-cumar-ketone, is an orange-yellow powder sparingly soluble in water. A 5 per cent. solution may be obtained by means of hot oil, which does not separate on cooling until it has stood for some weeks. It has a slight aromatic odour. J. Heveri finds that its bactericidal properties are remarkable; it may be applied as a powder, or in a 10 per cent. glycerin mixture in all cases of suppurating wounds and growths. In addition to its value as an antiseptic it also has marked hæmostatic power, acting as a useful styptic in parenchymatous hæmorrhage. A sticking plaster incorporated with quinine lysoginate is useful for domestic use for cuts and contusions. No irritation or toxic effects have been observed to follow the use of large quantities of the antiseptic, except in one case, where the injection of 150 gr. of a 10 per cent. glycerin mixture into an abscess cavity caused slight respiratory disturbance.—*Therapist*, **12**, 206.

LEGAL INTELLIGENCE.

Pharmacy Act (Ireland), 1875.

The Sale of Arsenical Sheep-dip.

On Saturday, August 22, 1903, at Ballinasloe (Co. Galway) Petty Sessions, before Mr. R. R. Wade and other magistrates, a case was heard against Mr. Laurence Conroy, Ballinasloe. The charge was that on June 16 defendant, who was not qualified to sell poisons, sold arsenic contained in a packet of Cooper's sheep-dip, and was thus liable to a penalty of £5.

Professor Tichborne read his analysis, to the effect that the parcel ($1\frac{3}{4}$ lb. weight) contained arseniate of soda equal to 20 per cent. of white arsenic. Three grains of arsenic were poisonous, so that the package contained over 800 poisonous doses.

In cross-examination by Mr. Davidson, the solicitor for the defence, the witness said that he was familiar with all sheep-dips, and he believed all contained poison. It was competent for Mr. Conroy to go up and qualify as a registered druggist.

Mr. Davidson said if it was so easy as all that it could not be much good.

Mr. Byrne, J.P., said that Section 31 of the Act exempted dealers in "patent medicines."

Mr. O'Shaughnessy, J.P., said this was simply a medicine for sheep, and it was straining the Act to apply it to such a case. If a man wanted a poison he would not go to look for sheep-dip.

Mr. Davidson said that the defendant sold the article as he got it. It was not a case of dispensing or making up a prescription containing poison. Therefore, the Bench should scout the case out of Court.

Mr. Byrne said that the defendant had a perfect right to sell a "patent medicine."

Professor Tichborne said he would explain the matter, but the Bench refused to hear him, and dismissed the case "without prejudice."

A second case against Mr. T. B. Hibbits, of Kilconnell, for selling a packet of Wallis's sheep-dip was also dismissed.

Sale of Food and Drugs Acts.

Milk of Sulphur.

On Thursday, August 20, 1903, at the Droxford Petty Sessions, John Rees Jones, chemist and druggist, of Hambledon, Hants, appeared in answer to a summons charging him with selling a quarter of a pound of milk of sulphur which was adulterated with sulphate of lime to the extent of 29 per cent.

Charles Davis, an inspector under the Act, formally proved the purchase, and produced the analysis of the county analyst.

Defendant explained that he had purchased the business but two months before. When he entered into possession and came to overhaul the stock he found two lots of milk of sulphur. One was labelled "Common" and the other "Precipitated," and, thinking that the latter was the purest, he threw the former away, but he had not tested that which he kept to see whether it was genuine or not.

The Bench accepted the defendant's explanation, but ordered him to pay the costs of the proceedings, £1 6s. 6d.

Medicine Stamp Duty Acts.

Summonses Withdrawn.

On Monday, August 24, 1903, at the Hanley Borough Police Court, before Councillor W. O'Keeffe and Mr. F. J. Pidduck, John Howshall, herbalist, 9, Parliament Place, Hanley, was summoned, under eight separate informations, for that on March 27 he did utter, vend, and expose to sale certain preparations and compositions to be used and applied as medicines and medicaments for the prevention, cure, and relief of disorders and complaints incident to and affecting the human body, and liable to the stamp duty chargeable in respect of medicines, without a paper label being pasted on the bottle denoting the duty charged, whereby he rendered himself liable to a penalty of £10 for each offence. Each of the summonses related to a separate medicine, the various preparations being as follow: Composition essence, composition powder, digestive pills, blood purifying mixture, neuralgia mixture, stomach and liver mixture, gout and rheumatic mixture, and influenza mixture.

Mr. Geo. Richards, the local supervisor of Inland Revenue, informed the magistrates that the Inland Revenue authorities had agreed to withdraw the summonses on a compromise which had been affected between them and defendant, the defendant undertaking to pay the costs of the summonses.

The magistrates allowed this course to be adopted.

Shebeening in Aberdeen.

A Chemist Heavily Fined.

On Friday, August 21, 1903, in Aberdeen Police Court, before Baillie Glass, William Duffus, chemist and druggist, again appeared on the charge of having, in premises in Spital occupied by him, on a Sunday in the month of April, trafficked in excisable liquors by selling beer and whisky to four men without having a certificate. There were eight similar charges against accused, the latest being on August 4. Accused pleaded guilty to the last two charges mentioned in the indictment, and the Fiscal accepted that plea.

Mr. G. M. Aitken, who appeared on behalf of accused, said that defendant pleaded guilty to the eighth and ninth charges on the indictment, those of trafficking in excisable liquors on August 1 or 2, and on August 4. This was the first time that accused had been before the Court charged with an offence of that kind, and he had little doubt that the result of this would be that there would be no further trouble from the accused on that score. It was the first offence, and he (Mr. Aitken) asked the magistrate to deal with accused as leniently as possible.

Baillie Glass said that it was a very serious offence, and he could not look at the offence leniently. He must punish accused severely to prevent others from following his example, and accordingly he would impose a fine of £7 for each offence, with 40s. expenses—in all, £16—the alternative being one month's imprisonment.

POISONING CASES AND INQUESTS.

The deaths from poisoning reported during the seven days ended Wednesday, August 26, 1903, numbered twelve, thus :—

Poison.	Accident.	Suicide.
Alcohol	2	—
Carbolic Acid	—	1
Chloroform	1	—
Hydrochloric Acid	1	—
Opium	1	—
Ptomaine	3	—
Rat Poison	—	2
Yew Leaves	1	—
Total	9	3

Alcohol.—A child at Ketley, Salop, died after drinking a quartern of neat whiskey. A woman at Newhaven died from syncope and inflammation of the liver and kidneys, the result of alcoholic poisoning.

Carbolic Acid.—A woman in Grimsby Park committed suicide by taking carbolic acid.

Chloroform.—A woman at Glasgow died under chloroform, given as an anæsthetic for the purpose of an operation.

Hydrochloric Acid.—A man at Ashington drank spirit of salt by mistake, and died shortly afterwards.

Opium.—The captain of a German merchant vessel died at Cardiff from an overdose of opium, accidentally taken.

Ptomaine.—Unwholesome fried fish caused the death of an Italian woman at Hartlepool and of a child at Canning Town Ptomaine poisoning was also the cause of death of a lunatic in the Ipswich Asylum.

Rat Poison. — A compositor at Pemberton, Lancashire, poisoned himself by taking rat poison. A domestic servant at Upton Park died in a similar manner.

Yew Leaves.—An inmate of the Wells Asylum died after eating yew leaves.

Attempts at Suicide.—Carbolic acid, laudanum, and "lotion," were taken by would-be suicides.

IRISH PHARMACEUTICAL JOTTINGS.

Miss Jennie Wells, aged eighteen, daughter of Mr. W. F. Wells, ex-President of the Pharmaceutical Society of Ireland, has obtained "honours" at the Dublin University examination for women, and has been awarded book prizes to the value of £10.

The crypts of St. Michael's Church, Dublin, are so antiseptic, owing to the soil and walls being a compound of argillaceous earth and carbonate of lime, that the bodies placed therein several hundreds of years ago are to-day almost as when they were first interred.

A few admirers of the late Dr. J. E. Kenny, L.A.H., Dublin, who did yeoman's service to the Irish Pharmaceutical Society in assisting some years ago the Pharmacy Act through Parliament, have erected a granite monument to his memory in Glasnevin.

A vitriol tank, whilst being conveyed last week through Dublin for Messrs. Morgan, Mooney and Co.'s chemical concern, burst, and, scattering its contents, injured those in the immediate vicinity.

The Pharmaceutical Society of Ireland have in contemplation the re-starting of evening scientific meetings at 67, Lower Mount Street.

Decisive steps are being taken by the Apothecaries' Hall of Ireland to preserve intact its legal rights from the encroachment of unqualified traders. Information having reached the Board of at least one case in which the offender, a pharmaceutical chemist in Dublin, has trespassed beyond his province to the extent of prescribing, vaccinating, and otherwise infringing the law, the "Hall" has put the legal wheel in motion, and a writ in the matter is largely *en evidence.* Unless a compromise is arrived at there will be an abundant harvest of grist to the judicial mill in the course of a few days.

Professor Knight, a well-known south of Ireland chemist, has given to the public an interesting communication on "Radium," in the course of which he details the result of a number of experiments with liquid air and liquid hydrogen. The effects of sunlight on headache, and the action on the human skin of Becquerel and Röntgen rays, also the therapeutic value of the former rays in the cure of cancer, are set forth in phrases adapted to the capacity of the merest tyro.

The death occurred at Dublin, on the 20th inst., of Mr. George McMaster, J.P., a member of the extensive drug and chemical firm of McMaster, Hodgson and Co., Capel Street. The deceased, although upwards of eighty years old, took an active part in the affairs of the establishment, and, together with his partner, Sir Edward M. Hodgson, M.P.S.I., exercised a wise discretion in the management of the concern He was for several years a member of the Corporation, and was a distinguished *alumnus* of Trinity College, of which he graduated M.A. many years ago. The interment on Monday last was largely attended.

MISCELLANEOUS NEWS.

DIVISIONAL SECRETARIES and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

An American Riddle.—In a recently published collection of essays, of the type deemed humorous in the United States, occurs the following passage concerning George Washington:—"His whole demeanour is that of innate majesty, commingled with *dolce far niente*, *nux vomica*, and *pro bono publico*."

Cheap Drug Stores Fined.—*Science Siftings* is glad to see "that the authorities are taking energetic action against those drug companies selling inferior articles. In view of the rapid establishment of cheap drug stores, this is an evil that requires close watching, and we congratulate the prosecution on its alertness."

Grocers and the Sale of Drugs.—At a recent meeting of the Brighton Grocers' Association, a member drew attention to the sale of citrate of magnesia, and said there was likely to be some trouble with regard to it. He advised those who sold it in bottles or loose to have it properly labelled as "Effervescent Citrate." If an inspector or his representative called at their shop he would ask for citrate of magnesia, but such a thing was almost unknown in England now.

Value of German Chemists' Shops.—The number of chemists' shops in German towns is strictly limited, and new licences are rarely granted. The value of these licensed establishments is, therefore, constantly growing. At Breslau, a chemist's shop has just changed hands for £19,000, including £8,000 for the licence alone. At Danzig, a chemist's business recently realised £8,500, including £3,000 for the licence. It was sold a fortnight later for £9,600, including £5,000 for the licence.

Funeral of Mr. Parson at Cambridge.—The funeral of Mr. H. J. Parson, whose death was announced in last week's issue, took place on Friday, the 21st inst., at Cambridge. Mr. A. S. Campkin, President, Mr. E. S. Peck and Mr. E. H. Church, Vice-Presidents, of the Cambridge Pharmaceutical Association, attended the service on behalf of that organisation. Among the wreaths was one sent by the Committee of the Cambridge Pharmaceutical Association, as "a tribute of sincere sympathy."

Revenge on a Manchester Chemist.—At the Manchester City Police Court on Monday, August 24, an elderly man was charged with wilfully breaking a large plate-glass window in the shop of Mr. Wm. Ramsden, chemist and druggist, Fallowfield, Manchester. Defendant said he broke the window because Mr. Ramsden was Chairman of the Chorlton Board of Guardians, which had refused to continue to give him (defendant) outdoor relief. He was sent to prison for one month.

Quacks and Quackery.—A correspondent of the *Medical Press*, signing himself "A Consulting Dental Surgeon," again urges inquiry by a Parliamentary Committee into "the whole question of unqualified medical practice, including the manufacture and sale of quack medicines." The dental profession, he adds, is especially favoured by fraudulent quacks and pursued by many unqualified chemists (*sic*). "Many chemists' firms, often aided by the Limited Liability Act, are engaged in dental quackery, palming themselves off as qualified practitioners, and handing over their victims to unqualified assistants."

A Moneylender's Affairs.—At the Rochester Bankruptcy Court, on Tuesday, the public examination was begun of Mr. Moses Trayton Skinner, a Kentish churchwarden, who carried on the business of a moneylender under the style and title of the "Holborn Advance Company, Chatham," and had been made bankrupt on the petition of Mr. W. L. Towers, chemist, of Chatham. The debtor, examined by Mr. Cave, Deputy Official Receiver, admitted that he had borrowed £1,000 of Mr. J. N. Bryan, a retired chemist, at 20 per cent. interest in order to carry on his moneylending business. He gave bills as security. He also borrowed money of Mr. Towers and of Mr. Hyman, of Leeds, at the same rate of interest. The examination was adjourned *sine die*.

Glasgow Chemist's Report.—Mr. F. W. Harris, the Glasgow Corporation chemist, reports that during the quarter ended June 30 he received twelve samples of camphorated oil, twelve of olive oil, eleven of tartaric acid, twelve of cream of tartar, twelve of lard, twelve of sweets, twelve of milk of sulphur, and twelve of lime-water. All of these were genuine with the exception of the following:—One of cream of tartar, which was deficient in potassium hydrogen tartrate to the extent of 2·91 per cent.; four of tartaric acid, which were deficient in that acid to the extent of from 1 to 3·75 per cent.; two of lime-water, which were deficient in lime to the extent of 36·98 and 46·78 per cent. respectively; and one of milk of sulphur, which contained 1·78 per cent. of mineral matter.

Arsenic in Sweets.—Mr. Otto Hehner, analyst, reporting to the Isle of Wight Council, states that in one sample of sweets submitted from that Council's district he found a notable trace of arsenic. They were small chocolate-coloured sugar cubes, containing about one-fifteenth of a grain of arsenic per pound. The sweets were not coated with chocolate, as might be inferred from their colour, but with a mineral colour, oxide of iron, which almost invariably contained arsenic, and was an altogether improper substance to use, even when it was pure. Mr. Hehner has drawn the attention of the Royal Commission on Arsenical Poisoning, which is still collecting evidence, to the above case, and hopes that steps will be taken to prevent the use by manufacturers of foodstuffs of oxide of iron as a colouring agent.

The Customs.—The report of the Commissioners of H.M. Customs for the year ended March 31, 1903, has been published as a Blue-Book. The total Customs revenue was £35,499,723, or, after deducting drawbacks and repayments, £34,460,685. This is £3,414,125 less than the produce of 1901-2, and £739,315 less than the Budget estimate. Clearances of foreign spirits increased from 8,981,880 gallons in 1901-2 to 9,785,976 gallons in 1902-3, or 9 per cent. This percentage is higher than the corresponding increase in the duty receipts, as the principal increase in the quantities cleared was in spirits delivered for methylation, upon which a duty of only 5d. per gallon is charged. The quantity taken for methylating has risen enormously during the last three years on account of the great reduction in the price of foreign grain spirit.

Medical Equipment in the Boer War.—In the Blue-Book which contains the report of the Royal Commission on the Boer War, the medical arrangements are alluded to. Surgeon-General Sir W. Wilson said in evidence that the instruments used were "very good," and spoke highly of the dressings and drugs. Civilian medical men who went out had a different opinion. Dr. Ogston strongly condemned the whole equipment. Sir Frederick Treves said that the supplies were certainly antiquated, and the instruments were of the kind which he should have thought would only be found in museums. The Commission, summarising the matter, says that the evidence leaves "the impression that the Army Medical Service as a whole had not, either as regards *personnel* and equipment, been maintained at the high standard which in so vital a matter is essential. . . At any rate in the early part of the war, perhaps owing to accumulations of stores at home, medical supplies were not always of the newest pattern, and parts of the equipment were comparatively antiquated."

Dangers of Rat Poisoning.—At Fareham (Hants) on Monday last Mr. George Donaldson, chemist, of Cosham and Portsmouth, was summoned for having, on August 4, caused to be laid in his garden flesh which was impregnated with strychnine, and was calculated to destroy life. Mr. G. H. King, who prosecuted, explained that on that day a dog which belonged to Dr. Heygate was poisoned with strychnine, and it was afterwards found that the poison was obtained in a piece of meat that it had picked up in defendant's garden. A police-constable said that on the 6th inst., in consequence of complaints, he visited the defendant's garden, where, under a sieve in a shed, he saw some rabbits' flesh, which, he was told by the gardener, was poisoned, and had evidently been placed there for the poisoning of rats. Outside he met Mr. Donaldson, and whilst talking to him saw him kick a rabbit's maw from the path into the garden. This witness took possession of, and divided, leaving a portion with the defendant, and sending the rest to the county analyst for analysis. Miss Heygate said the dog—an Aberdeen terrier—ran in the direction of defendant's garden. A few minutes after its return it became ill and died. Dr. Heygate said it died from strychnine poisoning. Mr. E. J. T. Webb, who defended, said that as the poison was placed in the garden for the specific purpose of poisoning rats his client was not liable for this misadventure. According to the constable's evidence the poison was placed under a sieve in the shed, and from it a hole ran to the back of the house. The purpose, therefore, was obvious. The Bench dismissed the summons without calling upon the defendant or his witnesses.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. J. H. Preston, son of Mr. J. Preston, chemist, Sheffield, passed his "Intermediate Science" at the recent London University Examination. He was placed in the second division.

Messrs. Parke, Davis, and Co., 111, Queen Victoria Street, London, E.C., announce that their Post Office telephone number is 9201 Central, in addition to 5940 Bank on the National Telephone Company's system.

Mr. F. B. Parkin, of Kirkgate Head, Ripon, announces that he has taken Mr. G. E. Whysall, of Grantham, who has been his confidential assistant for some considerable time, into partnership, and the firm will carry on business under the name of Parkin and Whysall.

Mr. Richard Fitzhugh, J.P., pharmaceutical chemist, has been appointed by the Duke of Connaught to be Provincial Grand Master of Mark Masons for Notts, in succession to the late Judge Masterman, D.C.L. Mr. Fitzhugh is President of the Nottingham and Notts Chemists' Association.

Mr. J. P. Gibson, M.P.S., of Hexham, on Monday, August 17, delivered a lecture on "The Roman Wall" to the students at the nature-study classes of the town, under the auspices of the County Council. The lecture was given on the invitation of Professor Miall, F.R.S., who is conducting the classes.

Mr. P. E. F. Perredes, B.Sc., of the Wellcome Research Laboratories, has been awarded the John M. Maisch Prize by the American Pharmaceutical Association, for his papers on the anatomy of the stem of *Derris uliginosa.*

Dr. F. B. Power, Director of the Wellcome Chemical Research Laboratories, was awarded at the fifty-first annual Convention of the American Pharmaceutical Association, held at Mackinac Island, Michigan, U.S.A., on August 3 to 7 last, the Ebert Prize for his paper on the chemistry of the stem of *Derris uliginosa*, Benth.

Rossetti and Dr. Paul. — A recently-published volume entitled 'Rossetti Papers,' includes the diary of William Rossetti between 1862 and 1870. Under date Friday, October 9, 1868, is the following:—"Paul called on me at Somerset House. . . . . He says that the lady lately married by Hannay is his cousin, Miss Hannay." An editorial footnote by W. M. Rossetti runs thus:—"Benjamin Horatio Paul, a scientific chemist, whom we had known through Hannay: I saw a good deal of him towards 1854."

SCHOOL AND COLLEGE NEWS.

School of Pharmacy.—As announced elsewhere, the Session will be opened on Thursday, October 1. In the evening a smoking concert will be held, which past, present, and future students are asked to attend. Further particulars will be announced later.

Preliminary Examinations.—Among the coaches who prepare students for preliminary examinations and the schools and colleges where this class of instruction may be obtained are the following:—A. H. Dawes, 55-56, Chancery Lane, W.C., the success of whose students in the Jacob Bell Scholarships examinations is well known; Mr. J. Charleston, B.A., Burlington Correspondence College, 8, Crescent Grove, Clapham Common, S.W.; The Nottingham School of Pharmacy, Carlton Chambers, 13, Victoria Street, Nottingham; Birkbeck College, Breams Buildings, Chancery Lane, E.C.; and Messrs. Borland and Godsell, 49, King William Street, London, E.C.; Messrs. John Gibson, M.A., and G. Loly, B.A., 24, Chancery Lane, E.C.; and the University of Liverpool.

TRADE NOTES.

The Dental Manufacturing Co., Limited, 6, Lexington Street, London.—Dental Hospital students can obtain every requisite strictly in accordance with the authorised list of their hospital from this firm, whose terms are very moderate.

British Botanical Association, Limited, York.—Students of botany can obtain every description of botanical material from the Association mentioned above. Flowering and fruiting specimens of economic and medicinal plants from all parts of the world are supplied.

Southall, Brothers, and Barclay, Limited.—Mention should be made here of the various students' requisites supplied by this well-known Birmingham firm. For materia medica, chemical and microscopical collections, herbaria, standardising apparatus, and every class of article required by the pharmaceutical student, Messrs. Southall, Brothers, and Barclay have a wide reputation.

A. Gallenkamp and Co. Limited.—For chemical and scientific apparatus in general for students and for schools, there are few firms better known than the one mentioned above. Every description of article required in the laboratory, as well as all kinds of chemicals, reagents, and volumetric solutions for schools and analytical purposes can be obtained from 19, Sun Street, Finsbury Square, London, E.C. In a catalogue published by this firm, comprising nearly 700 closely-printed and illustrated pages, every size and variety of article required in chemical experiments is classified, and everyone interested ought to procure a copy of this concise and complete work. It should be mentioned that Messrs. Gallenkamp and Co. supplied all the Sartorius Balances used in the laboratories of the Pharmaceutical Society. They also supply the famous Becker Balances, made by Becker, Fils and Co., Brussels.

F. Darton and Co., 142, St. John Street, London, E.C.—Before finally choosing a microscope students would be well advised to procure a catalogue from the Clerkenwell Optical Works, at the above address. A very large selection of microscopes of the highest quality, and at extremely reasonable prices, are supplied by Messrs. Darton and Co. It is unnecessary to describe here the various instruments, full particulars of which will be supplied on application. Suffice it to say they can be confidently recommended. The microscope, in addition to being a necessary adjunct to a student's outfit, is a very suitable and profitable article for chemists to deal in, and in those districts where there is likely to be any demand for this class of goods the retailer should be prepared to supply them. Pharmacists dealing in spectacles and other kinds of optical goods should put themselves in communication with the above-mentioned firm, which always gives satisfaction.

PATENTS AND TRADE MARKS.*

New Patent Applications.

MASSAGE APPLIANCE FOR IMPARTING VIBRATION TO PARTS OF THE BODY (No. 16,772, of 1902).—R. Petskey, Hydropathic, Peebles, N.B. Relates to a portable appliance for the above purpose, consisting of a clamp, carrying a wheel (rotated by hand), said wheel driving a smaller overhead wheel which rapidly rotates a length of flexible shafting, to the end of which the vibrator is attached. The vibrator consists of a bent arm piece which has a rubber pad loosely connected to the end thereof, the arrangement being such that the rotation of the bent arm gives a series of rapid impacts against that portion of the body to which it is desired to impart vibration. A tubular piece is provided through which the flexible shafting rotates, and constitutes a handle for the operator to hold whilst he rotates the driving wheel with the other hand.

APPARATUS TO BE USED FOR CURING SKOLIOSIS (No. 235, of 1903).—F. Nusch, 81, High Holborn, W.C. (Communicated by Heldmann and Bender, Bensheim, Germany.) Consists of an apparatus, designed for the cure of skoliosis, which compels the patient to bend backwards. Means are provided whereby the degree of the backward bend of the patient may be varied at will.

ARTIFICIAL HANDS (No. 2,969, of 1903).—A. Daniels, 7, Sandon Street, Waterloo, Lancaster. Relates to the construction of an artificial hand which can be made to grasp anything which the ordinary hand can grasp. This is effected by forming the fingers and thumb in a bent position at the second joint and jointing them next the body of the hand. Tendons formed of watch spring metal, or combined catgut and watch spring metal, are passed from front to back of the hand through slots or spaces at the joints, and fastened at one end to handles, sliding in ways at the back of the hand, and at the other end to the fingers and thumb, so that by pulling the handles they can be drawn down or contracted to grasp anything. Means are provided for locking the handles to hold the fingers and thumb at any required degree of contraction, and springs for pushing them back when the handles are released. It is assumed that the wearer has one sound hand with which to manipulate the artificial one.

Note.—Opposition to the grant of any of the above-mentioned patents must be filed at the Patent Office, on or before September 29, 1903.

New Trade Mark Applications.

"**20 MULE TEAM BRAND**" label, for chemical substances used in manufactures, etc., and perfumery, etc., by Borax Consolidated, Limited, 77 and 78, Gracechurch Street, E.C. 256,213 and 256,217.

"**HAMMOND'S REMEDY**" label, for a vermin poison, by G. C. Andrews and Son, 2, Lausanne Road, Peckham, S.E. 248,588.

"**ELSA-FLUID**" label for (1) medicinal preparation for veterinary and sanitary purposes, (2) medicinal preparation for human use, (3) an article of perfumery. Nos. 252,918-20.

"**ELSA PILLS**" label, for (1) pills for veterinary purposes, and (2) pills for human use. Nos. 252,921-22. By E. V. Feller, Stubica, Croatia, Hungary.

Tipper's "**3 TIPS**" label, for chemical substances used for veterinary purposes, by B. C. Tipper and Son, 43, Homer Street, Balsall Heath, Birmingham. 253,146.

"**HAMMER**" and device, for pills for dogs, by M. W. Carr, 79, Oakworth Road, Keighley, Yorkshire. 255,761.

"**SUBCUTIN**," for medicine for human use, by Dr. E. Ritsert, 75, Gutlent Strasse, Frankfort-on-Main. 255,643.

"**SETTLER**," for chemical substances prepared for use in medicine and pharmacy, but excluding oil or extract of eucalyptus, by J. Knight and Sons, Limited, Silvertown Soap Works, Victoria Docks, E. 255,787.

Signature ("**S. JOHNSON**"), for medicinal pills, oils, etc., by S. Johnson, Summer House, Wrinehill, near Crewe, Staffs. 255,793.

Device of two Snakes, Beetle, etc., for vaccine and other sera for use for the purposes of inoculation by the Incorporated Liverpool Institute of Comparative Pathology, Crofton Lodge, Runcorn. 255,428.

"**HAZELINE**" Snow ("Hazel" disclaimed), for a toilet preparation, by H. S. Wellcome, Snow Hill Buildings, Holborn Viaduct, E.C. 255,933.

"**NIZO**," for perfumery, etc., by Schulke and Mayr, Moorfurtweg, 13/15, Hamburg, Germany. 255.939.

Note.—Opposition to the registration of any of the above-mentioned Trade Marks must be filed at the Patent Office, on or before September 26, 1903.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and 'Patent Notes for Inventors' free on application.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

General Markets.

London, Thursday Night, August 27, 1903.

The week has been an uneventful one as far as the market in drugs and chemicals is concerned. It has been uneventful in one respect because very little business has been transacted, and in another respect because no alteration in price has occurred. Of course, every day the market value of some article or other is bound to fluctuate to a slight extent; but no rise worthy of note and no fall sufficiently serious to place on record in these columns has taken place since last Thursday. Business during the week just ended has perhaps been quieter than during any week this summer. Opium remains firm, and very few inquiries have been made concerning it. Buyers appear to be holding off, but any reduction in price is not to be anticipated, in view of the short crop. There is a conspicuous absence of news from Salonica. Tartaric and Citric Acids are a trifle easier, but, to all intents and purposes prices are unchanged. Holders of these articles must have suffered some disappointment, as the weather has not been conducive to the consumption of beverages of this nature.

ARROWROOT.—At auction, about 850 barrels of St. Vincent were offered, of which a little less than half found buyers at 2d. to 2½d.

BISMUTH CARBONATE.—8s. 1d. per lb.; Subnitrate, 7s. 4d. per lb.

BORACIC ACID.—Powder, 24s.; crystals, 22s.

BORAX.—Howard's powder is quoted at 15s. 6d. to 16s. 6d.

BROMIDES—Unchanged. Potassium, 1s. 11½d.; Sodium, 2s. 2½d.; Ammonium, 2s. 3d.

CAPSICUMS.—31 bales Bombay were offered on Wednesday and 10 sold, bright red mixed yellow on stalk at 14s.

CASCARA SAGRADA—Is firm. From the other side it is reported that there is practically nothing to be got beyond what has already been sold.

CHILLIES.—At the spice sales 15 bales Zanzibar were offered and bought in at 45s.

CINNAMON BARK AND CHIPS.—12 bags were offered at auction, but none were sold.

CITRIC ACID.—1s. 1d. per lb. Schering's puriss. crystals is quoted at 1s. 10d.

CLOVES.—At Wednesday's auction, 4 cases Penang were offered and sold, fair bright picked at 8½d.

COCAINE.—No alteration. 17s. 6d. per oz. is quoted for the Muriate; 1 oz. bottles 2d. each extra. Cocaine pure, 2s. 9d per oz. more than the Muriate.

CREAM OF TARTAR—Slightly easier; 98 per cent. foreign powder, 89s.

GINGER.—There was little demand at auctions, and only small supplies were catalogued. A few packages Jamaica sold at 40s. for ordinary. All the Cochin offered was bought in.

GLYCERIN.—68s. for half-ton lots. Schering's water-white and odourless double-distilled, 73s. per cwt.

HYDRASTIS RHIZOME, otherwise known as Golden Seal, is reported very scarce, and is very dear; 2s. 5¾d. is the spot price.

IODIDES.—No change. Potassium, 8s. 9d.; Sodium, 9s. 10d.; Iodoform, 11s. 8d.; Iodine Resublimed, 10s.

ISINGLASS.—At the auctions held on Tuesday there was a good general demand, and the prices obtained were slightly in advance of those obtained at the last sales.

MENTHOL.—Nominal spot price for Kobayashi is 21s. 6d. to 22s. 6d., according to brand, quantity, and holder.

MERCURIALS.—No further alteration in price. Calomel, 2s. 10d.; Corrosive Sublimate, 2s. 5½d.; White Precipitate, 3s. 3½d.; Red Precipitate, 3s. 2d.; Mercuric Sulphate, 2s. 5d.; Hydrarg. Sulph. Nig., 2s. 4d.

NUTMEGS.—At the spice auctions 13 cases Penang were offered and 8 sold, 65's at 2s. 6d., 77's at 1s. 10d. 20 cases Singapore offered and sold, all slightly broken, wormy and defective, 90's at 11d. For West Indian higher prices were obtained than at last sales. 170 packages were offered and nearly all sold, 68's at 2s., 71's to 72's at 1s. 8d. to 1s. 10d., 75's at 1s. 8d., 84's to 85's at 1s. 5d. to 1s. 6d.

PEPPERMINT OIL—Is dearer. H. G. H. 11s. Japan dementholised: Sales have been made at 5s. 6d., and 6s. is now asked.

PIMENTO—Was firm at the spice auctions. 129 bags were offered and 50 found buyers, fair old import at 3d.

QUININE.—Practically no business is doing in this article, and prices remain unaltered. Howard's Sulphate in 1oz. vials 1s. 3d. to 1s. 4d., according to quantity.

SARSAPARILLA MEXICAN—Is dearer at 4⅞d., c.i.f.

SENEGA.—Some sales have been made in New York for the Continent at 3s. 2¾d., c.i.f., to Hamburg.

SHELLAC.—Prices are firm and unchanged.

TARTARIC ACID.—English, on the spot, 1s. 1½d.; foreign a fraction cheaper.

VANILLA.—After a lapse of nearly two months, Vanilla sales were held on Wednesday last. The supply offered was moderate, and buyers were found for about 300 tins, or a little more than half the quantity catalogued. Short medium beans met with a good demand at steady prices; long medium were slightly cheaper.

Foreign Markets.

WHY DO BRITISH FIRMS OBJECT?—Drugs and pharmaceutical products are manufactured in Russia only to a very limited extent. Germany monopolises the market, exporting also British products to this country. It would appear that good British firms object to do direct business with Russian in their products, with the result that by the employment of intermediaries in the trade the price of their wares is increased and the demand is necessarily curtailed.

AN INCREASE IN THE IMPORTATION INTO RUSSIA may be expected of all chemicals used in the mining industry, such as cyanides, compounds of mercury, etc.; all chemicals used in photography are also in steady demand. Coal-tar products and their derivatives might be pushed more in the Russian market by our manufacturers than has hitherto been done. All the manufacturers of aniline dyes in existence in Russia are branches of well-known German parent works.

WANTED—BRITISH GOODS.—"In spite of foreign competition," reports the British Consul-General at St. Petersburg, "the native perfumery industry shows considerable progress, demanding yearly a large quantity of essential oils for the satisfaction of its needs. The local production is, however, quite insufficient to meet this. Essences for confectionery would also meet with a good demand here. For foreign perfumery, in spite of heavy duties and progress of the native industry, there is a steady and growing demand, and scents of British origin are held in the highest esteem. Adherents to the art of photography are very much on the increase in

Russia, and there is no native production of photographic appliances. Cheap and handy apparatuses find a ready sale." The British Consul at Moscow says:—"Chemicals and perfumery are mainly in German hands. Nearly every chemist's assistant knows German, and consequently most of the orders go to Germany. I notice the Americans are coming in with capsules, tabloids, etc., so there is evidently something to be done in that line. A certain amount of British perfumery, etc., is on sale, but the prices are usually prohibitive except for the wealthy. French firms locally established do a large business in soaps, scents, etc., and a large amount of cheep goods in this line from Germany is to be seen in most shops. The use of the camera is spreading. Those most in favour seem to be the lighter and easily portable sorts. Pocket varieties are in great vogue. British makes have such a good reputation that a higher price is readily paid for them. Instructions should be printed in English and Russian."

CLOVES.—The following table shows the actual quantity of cloves brought into the town of Zanzibar during the last five years:—

Year.	Quantity.		
	Zanzibar.	Pemba.	Total.
	Frasilas.*	Frasilas.*	Frasilas.*
1898	60,364	308,486	368,850
1899	139,320	344,765	484,085
1900	49,180	248,936	298,116
1901	49,977	294,709	344,686
1902	58,438	235,107	293.545

* A frasila = 35 lb.

THE OPIUM TRADE OF AMOY.—Owing to the failure of the native opium crop (states Mr. Consul Hausser, in his report on the trade of Amoy for the year 1902), the importation of foreign opium of all sorts rose in 1902 to 464,838lb., valued at £283,990, as compared with an import of 337,517lb., value £246,625, during the previous year. The increase was confined to Persian, of which there were large stocks in Hong-Kong at the beginning of the year. Prices showed an improvement of about 100dols. per chest on those of 1901, but the ruinous rate of exchange practically took away the benefit of the higher dollar values. Of native opium, the trade in which is entirely in the hands of the Chinese, the importation was much curtailed. At the beginning of the year the price of native drug was only 560dols. per picul, but advanced more than 200dol. during the year, being thus comparatively dearer than Persian. Opium from Kiangsu appears this year for the first time in the customs returns, as a competitor with the Ssuchuan and Yünnan varieties, 4,000lb., valued at £1,660, being imported.

A CAMPHOR MONOPOLY.—Camphor appeared in the customs returns as a separate item for the first time in 1901 when 25,466lb., value £1,166, were exported. During the year 1902 the production rose to 55,033lb., value £1,720, and with a little fostering there is no doubt this commodity might in time become a most valuable article of trade. In June the provincial authorities established a Government Bureau for the control of the camphor industry throughout the province, all merchants dealing in the drug being obliged to purchase through the Government office at the fixed Government price. The monopoly thus created being plainly an infringement of treaty rights, representations have been made on the subject, and for the present the Government Camphor Bureau has been unable to enforce its prohibitions against the so-called illicit production and sale of camphor by the native still-owners. The camphor continues to find its way down to the port with or without transit pass in quantities which, though small, are sufficient to create competition with the Formosan product.

VETERINARY NOTES.

BY "CENTAUR."

Doctoring Snakes.

Reference has been made in these columns to some of the difficulties met with by veterinarians in the administration of medicines, as well as to the curious patients requiring treatment. Drenching a rhinoceros with a will of his own, or reaching the mouth of a giraffe to administer a ball, are sufficiently arduous tasks; but snake doctoring, when the subject is venomous and 25 ft. long, is an undertaking from which anyone might shrink. Nevertheless, this has been done, and more. A python, of the above-mentioned proportions, is described in the report of the New York Zoological Society as suffering from a cankered mouth. The treatment of this offered no insurmountable difficulty, and it was cured; but the habit of abstinence from food had been established, and the creature positively refused to make use of his restored faculty for seizing and disposing of such trifling objects as rabbits in their skins. Seeing that the python was losing flesh, it was determined to have recourse to forcible methods, and four rabbits (dead ones) were sewn together and attached to a bamboo pole 8 ft. long and thrust down his throat, as one would a cow probang. That it might be rammed "home," the pole was pushed until only a few inches remained outside. Snakes are not like ruminants, in whom vomition is well-nigh impossible; and as soon as the light meal had been left behind, the python showed symptoms of ejecting it. To divert his mind from such a waste of good living the hose was turned on, and this ruse proved successful, for it raised his "dander," and, placing himself in a fighting attitude, he forgot to disgorge the rabbits. For nearly a year this method of feeding was persisted in, and the patient then regained his appetite, and took food voluntarily. Many good snake stories come from America, but are not suited to this journal; this is an authorised story from a scientific body, which would scorn to deal in romance.

The Register of Veterinary Surgeons.

The new register shows an actual decrease in the number of veterinary surgeons, which is not to be accounted for by the "waste" incurred in the late war. There are several reasons for it: Some fifteen years ago, when the question was being asked "what to do with our boys," a popular writer directed attention to the veterinary profession as offering a career to young men with a taste for animals (and sport), and a great influx of students followed. The profession was for a time overstocked, and then came the motor-car and other means of traction besides that of the horse. This gave pause to parents and guardians, but the time was also chosen by the Council of the R.C.V.S. to raise the standard of the Matriculation Examination, and extend the curriculum to four years. Many students entered the colleges very young in order to pass under the old rules and the three years' system, and their fees came in so freely that the R.C.V.S. launched out into expenses for rebuilding, which were hardly justified in the light of subsequent events. The number of entrants fell off so seriously when the longer curriculum came into force that a proposal to amalgamate some of the Scotch colleges has been seriously entertained. With the ever-increasing value of good horses and other live stock, there is likely to be always a demand for "vets.," and those with a taste for horses need not, we think, be deterred from becoming veterinary surgeons, as there is a distinct shortage which must take years to replace.

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

The Major Examination and Post-Graduate Classes.

With reference to these subjects it seems obvious to me that there are many points to be considered in connection with both which will need very careful scrutiny before altering the former. First, with regard to the Major, there is no doubt in my mind that the Minor now fills the place in the training of pharmacists which the Major was originally intended to. Twenty years ago the Major qualification was of some value to the possessors thereof but now it only seems a stepping stone to some other qualification or degree. I once heard a President of the Pharmaceutical Society remark in public that "no one was better fitted to undertake the work of a public analyst than a pharmaceutical chemist"; but it has always seemed to me that the Institute of Chemistry has entirely taken upon itself the functions which our Society ought to have developed—viz., the training of chemists who would be eligible for the position of public analyst. It would be well, therefore, to ask ourselves what use the Major is in our present scheme of education? We must admit that it gives the successful candidates a further knowledge of chemistry, botany, and materia medica, which is good for them; but can we prove that this knowledge is of any real service to them as pharmacists under existing conditions? Do we often see an advertisement, "Major qualification essential," or ever meet anyone who appreciates the difference between a pharmaceutical chemist and a member of the Pharmaceutical Society? We may impose examinations and grant qualifications, but we cannot command the candidates, and probably the Chairman of the Board of Examiners is the only person who ever suggests the Major to nine-tenths of the successful Minor condidates. The Council cannot consider the division or alteration of the Major Examination without these questions cropping up, so it is best to face them plainly. Can they, therefore, make the Major qualification a marketable commodity, or shall we have to relegate it to the abode of the title Research Fellow of the Pharmaceutical Society?

The suggestion that post-graduate lectures should be arranged is a good one, but I fear it is not practicable. I ventured to suggest some ten years ago that the Society ought to do something for young men except grant them the Minor certificate and put their name on the Register, but I was told "not to throw stones at the old lady of Bloomsbury." I was then strongly of opinion that something ought to be done, and I am more convinced than ever, after the lapse of years, that it would be beneficial but almost impracticable. I frequently get students who have passed the Minor wanting to return to me as pupils to learn some of the applications of analysis which they see in my private laboratory. Many would like to take up bacteriology, some would like to understand how to make a complete examination of urine, others want to take up water analysis or understand photography thoroughly, and some even (I am pleased to say) want to take up a further period of study in microscopy and botany. Now this sounds very well, and I have no doubts of the sincerity of the intentions of these young men, but they are practically all in business, and cannot get the time except in the evening, and seldom can I meet with more than two or three who want to take up the same subject on the same evening. This fact would necessarily be an important factor in establishing classes, for the Society cannot afford to add to the annual deficit on the School, and, in addition, young men would ask afterwards: Where can we find a market for our brains? Certain wholesale houses and associations will undertake urine and water analysis at a price which would not pay for the time expended by a pharmacist (unless he were doing nothing else all day). Bacteriological work is practically confined to medical practitioners, specialists, and brewers' chemists. Photography is taught at the polytechnics for a few shillings per term, and so are botany and microscopy. Naturally, one asks: What is the use of teaching extra subjects? But even with this outlook I am still convinced that a wider and better knowledge always helps a man forward, and if only one could hope to ever see young men taking any interest in pure pharmacy again it might be possible to take that as an extra post-graduate subject; but, apparently, everyone is ready to trust his wholesale house, because it is cheaper and less trouble so to do, and so pharmacy as an art is not developed in the "retail." Having committed these facts and opinions to writing, I may be asked what remedy I propose, and at present there seems but one answer—viz., let the future take care of itself, and, meanwhile, let the Society do what it can to obtain some recognition for the Major qualification; then the examination will do as it is. Letters I receive from old pupils tell me that men who want to know more always find out the way to do so, and apparently they make it pay them; but I do not think that any scheme of post-graduate classes would be remunerative or practicable. The only thing we can do meanwhile is to alter the style of our evening meetings in London, making them more attractive and educational, and remembering always that we are pharmacists and not medical practitioners.

London, E.C., August 24, 1903. C. Edward Sage.

As at present conducted the Major Examination occupies three days, the time allotted to the various subjects being: Practical chemistry six hours, theoretical chemistry three hours, physics three hours, theoretical botany two hours, practical botany one and a-half hour, materia medica one hour, practical materia medica one and a-half hour. The arrangements with regard to chemistry and physics I consider quite satisfactory, except that in physics it would be an advantage if the candidate were examined in the practical use of simpler apparatus used in the branches of physics he has studied. In the other subjects the time allotted is, in my opinion, much too short. To the student who has studied general morphology and physiology thoroughly for his Minor, and subsequently given six months to the study of systematic botany, the present short paper is disappointing. Three hours should be given to theoretical botany, the candidate to answer, say, six out of eight questions, and three hours to practical botany. The same remarks will apply to materia medica. This would make a four days' examination, but if the candidate could obtain his diploma on two subjects, which I think an excellent suggestion, it would reduce the time for any one individual to two or two and a-half days. If this alteration were made the division of the examination would be quite unnecessary. I am not an advocate for taking an examination, comprising only two or three subjects, in bits; but if a candidate obtains a good percentage of marks in one subject, and shows weakness in the other, he might be allowed to obtain a pass after examination in the one subject in which he failed. With regard to post-graduate courses in subjects outside the ordinary pharmaceutical curriculum, the general run of chemists have such a very limited time for either recreation or study that courses intended specially for pharmacists would, I am afraid, not be supported by sufficient numbers; on the other hand, for those who have leisure and inclination, suitable general courses of instruction are obtainable at all large centres. While on the subject of examinations, I might suggest that it would be an immense boon to rejected candidates, both in the Minor and Major, if they were informed in their notices of the subject or subjects in which they have failed or shown weakness.

London, S.W., August 24, 1903. Henry Wootton.

I am very pleased to see that certain members of the Council so far see the defects of the Major Examination as to propose something towards rectifying them. As far as the revision of the present examination is concerned, I have not given it a thought, for I do not see that anything short of an entire rearrangement of the syllabus will make the examination of any real value to the pharmacist. The recent discussion by the Council has been an admission that the honorary qualification is not appreciated; also, that it is valueless, or almost so, for business purposes; but why not admit honestly the truth of this, and make the subjects of the suggested post-graduate course those of the Major syllabus. Personally, I have never encouraged students to enter for the Major Examination. I have advised a course including chemistry (general, pharmaceutical, and physiological), pharmacy, materia medica, bacteriology and chemical physics. Botany I have omitted altogether, for a slight variation in the Minor course would cover everything in that way a pharmacist requires. The general chemistry would include manipulation in qualitative and quantitative analysis, and water and milk analysis. The pharmaceutical chemistry would consist in the application of chemical and physical methods to the examination and standardisation of pharmaceutical chemicals and galenicals, overlapping in this way the pharmacy and materia medica courses. Physiological chemistry I consider an essential portion of every pharmacist's training; likewise, so is an elementary knowledge of bacteriology. Probably many pharmacy schools may not at present be able to cover the ground; but in Liverpool, and no doubt in other similar cities, arrangements can be made with the university to take those subjects where the paucity of students undergoing such a course of instruction would not pay for the necessary expenditure in plant. I hope before long to see instituted in Liverpool a series of classes arranged somewhat on the above lines, but the extent of the syllabus and the working details will necessitate more serious consideration than the space you can permit me will allow.

Liverpool, August 24, 1903. R. C. Cowley.

I think the proposal to alter the Major Examination a very good one, and believe if it were carried out would induce very many Minor men, who at present are content with the Minor, to take up the advanced studies (probably at part time classes), and so take the higher qualification. With respect to post graduate courses being obtainable, there is no doubt whatever that the various schools are only too glad to encourage prolonged study by their late students, but there is little inclination evinced in this direction; indeed, it is hardly to be wondered at, considering the late hours the chemist's assistant has to work, and the little liberty he has at his disposal.

Manchester, August 24, 1903. Geo. Clayton.

The Pharmacology of the Suprarenal Gland.

We observe that Dr. J. C. McWalter, in an article on the above subject, published in the *Pharmaceutical Journal* of the 22nd inst., makes the following statement:—"More recently Dr. John J. Abel separated the substance (active principle) in the form of a benzoate. This basic or active principle of the suprarenal he has further isolated in the form of a bright grey powder, whose percentage composition is expressed by the formula $C_{17}H_{15}NO_4$. It is a fine crystalline powder, known as adrenalin." Permit us to say that this statement is not in accordance with the facts. The substance isolated by Dr. Abel, which was considered by him to be the active principle of the suprarenal gland, was named by him epinephrin. The substance now regarded by all the best authorities as the true active principle was subsequently discovered and isolated by Dr. Jokichi Takamine, and this he named adrenalin. These two bodies, Abel's epinephrin and Takamine's adrenalin, are quite distinct, and it is difficult to conceive how any one professing to be acquainted with the subject could pen such a misleading statement as the one quoted above. We presume that Dr. McWalter's paper will later on appear in the 'Year-Book of Pharmacy.' As the paper was held as read at the Conference, and no opportunity occurred for exposing its inaccuracies, we trust that some means will be taken, for the credit of the 'Year-Book' as a historical record, to make it clear that the statement to which we have taken exception is not correct.

London, August 25, 1903 Parke, Davis and Co.

A Guild of Assistants.

The *Pharmaceutical Journal*, being free from the influences which very much control the other Trade press, seems to be the best medium through which assistants may properly be reached with a view to unite on a code of honour. It has been recognised that the key of the situation of the present state of pharmacy is largely in their hands, and it has been felt that if all the best men will accept a pledge not to enter the service of the unqualified competitors it will materially assist the efforts now being made by the various authorities to have the just rights of diplomaed men properly recognised. For this purpose a Guild of Assistants is being formed, and should a desire on the part of assistants be expressed, a private meeting of Metropolitan men will be convened at my address to pioneer the movement.

London, N.W., August 25, 1903. C. E. Pickering.

Wanted, a Sheep Dip.

Chemists doing an agricultural trade will hardly endorse the suggestion of a new dip, for they have mostly settled down to a well-known packeted dip, which is only heavy, and not troublesome for them or their customers to handle. "Ye idle 'prentice" no longer labours with a heavy pestle, attached to a springer above, to compound a dip of arsenic and sulphur and brown umber, with ol. picis and sapo mollis; indeed, the "gentlemanly youth wanted as apprentice" would be rather surprised nowadays if expected to spend days in succession in such laborious work. The composition of sheep dips is made a prominent point in a recent booklet published at Bradford by Mr. S. B. Hollings, who speaks as one having authority on behalf of the woollen manufacturers of that famous city. He complains of the injury done to the staple by caustic alkalies employed in dips, and of the stain caused by tobacco, and includes in his condemnation carbolic acid and "pitch oils"; while attributing the greatest blame of all to preparations of lime and sulphur. This general condemnation of dips leaves us little choice but the various phenyl and creosote emulsions, which, in the experience of the writer, are not nearly so effective as arsenic and sulphur. How shall we provide a preparation as convenient and effective as the packets now universally sold? Is there any other cheap and efficient solvent of arsenic? If so, our pharmaceutical friends should provide a dip containing it. It must not saponify the natural oil or "dry" the fleece, and must not render the fibre or staple brittle. Neither must it stain, like tobacco or "pitch oils." With better prices for home-grown wool, this is a good time to provide the sheep farmer with a dip free from the above objections. Young pharmacists, "wake up!"

August 24, 1903. "VETERINARIAN" (218/29).

Prescribing and Dispensing.

Bearing upon a subject which has already been discussed in the Journal, we beg to enclose exact copy of prescriptions received by us this week at 10.30 p.m., the patient being two miles away. We make no reflection on these—only to say we think it accentuates the desirability of a good feeling between medical men and chemists, which we are happy to believe does, in large measure, exist.

℞ Liq. bis. am. cit.	♏xxx.
Tinct. nuc. vom......................	♏vii.
Acid. hydrocy. dil......................	♏iii.
Acid. hydrochlor. dil....................	♏x.
Aq. chloroform ....ad	℥i.
M. t.d.s. a. c. ℥viii.	
℞ Phenacetin.	gr. v.
Ext. caffeine..........................	gr. ss.
M. Ft. Cachet send 12.	
℞ Tabloids hyd. perchlor. (B. and W.)	
℞ Boric. lint	℥i.

The mixture was incompatible, the "extract caffeine" unknown; soloids hyd. perchlor. were intended, but as no directions were given we were compelled to send tabloids as ordered to guard the patient.

August 22, 1903. "PHARMACISTS" (218/14).

The Sale of Oxalic Acid.

Among the cases of death by poison recorded weekly in our Journal suicide by means of oxalic acid is the verdict found by coroners' inquests in a number of instances. The acid is used extensively for cleaning brass and renovating straw hats, and for nothing else. If a clause prohibiting its retail sale were inserted in the Poisons Bill of the Government the public would not be prejudiced. Other substances which are not poisons could be used; acetic acid, for instance, is an efficient cleanser of brass, and being a liquid, is always ready for use. We registered chemists, subject to statutory regulations, are called upon to supply poisons for medical use, but as oxalic acid is not used medicinally, the prohibition of its sale by retail would probably result in fewer cases of suicide, and certainly relieve us of some responsibility.

Knightsbridge, August 22, 1903. J. B. BARNES, SEN.

PUBLICATIONS RECEIVED.

THE ART OF RETOUCHING, with a Chapter on Portraiture. By J. HUBERT, F.R.P.S. Twelfth edition. Pp. 84. Price 1s. net. London: Hazell, Watson and Viney, Limited, 52, Long Acre, W.C. 1903. From the Publishers.

LES DÉRIVÉS TARTRIQUES DU VIN. By Dr. P. CARLES. Third edition. Pp. 173. Price, 4 fr. 50. Paris: Libraires Associés, Editeurs, 13, Rue de Buci. 1903. From the Author.

THE WELLCOME PHYSIOLOGICAL RESEARCH LABORATORIES. Founded 1894. Walter Dowson, M.A., M.D., Director. Pp. 36. London: Brockwell Hall, Herne Hill, S.E. 1903. From the Publishers.

BIRTHS.

Barker.—On August 22, the wife of J. B. Barker, Chemist, York Road South, West Hartlepool, of a daughter.

Bray.—On August 18, at Burnham Market, Norfolk, the wife of George R. Bray, M.P.S., of a daughter.

MARRIAGES.

Field—Storey.—On August 11, at St. Giles's Parish Church, Northampton, by the Rev. Markham Evans, William Field, chemist, of Wolverton, Bucks, youngest son of the late Captain William Field, of Burpham, Arundel, Sussex, to Sarah, youngest daughter of the late Steel Storey, of Northampton.

Jull—Barrow.—On August 26, at St. Mark's, Winshill, Burton-on-Trent, A. P. Jull, M.P.S., of Charlbury, Oxon, to Lydia Constance, eldest daughter of H. M. Barrow, Ashby Road, Burton-on-Trent.

Muter—Walworth.—On June 30 at All Souls' Church, Leichhardt, Sydney, N.S.W., by the Rev. Thomas Holme, Charles William Muter, younger son of Dr. John Muter, F.R.S.(Ed.), of Horley, Surrey, to Mabel, daughter of the late John Walworth, of Sydney.

Young—Robinson.—On August 7, at West Didsbury Wesleyan Chapel, Edward F. Young, to Emily S. Robinson, daughter of L. F. Robinson, of Manchester.

DEATHS.

Cobb.—On August 22, Florence Maud, dearly beloved wife of H. C. Cobb, Chemist, 309, High Street, Brentford, of phthisis, after three months' painful illness.

Corfield.—On August 26, at Marstroud, Sweden, Dr. W. H. Corfield, Professor of Hygiene and Public Health, University College, London. Aged 60. Dr. Corfield was born at Shrewsbury and was educated at Magdalen College, Oxford, University College, London, and medical schools in Paris and Lyons. He was the first professor of hygiene appointed in London and started the first hygienic laboratory at a university. In 1891 he originated the meeting of the International Congress of Hygiene and Demography in London. For twenty years he was Chairman of the Sunday Society, which achieved the opening of public museums and libraries on that day. He was the author of many publications dealing with the laws of health, house sanitation, and typhoid fever.

Coupe.—On August 16, after a fortnight's illness, at High Street, Shoeburyness, William Coupe, Chemist and Druggist. Aged 79. Born at Mansfield, Nottingham, he followed the vocation of a chemist and stationer at Blackheath, until he went to Shoeburyness nearly forty years ago. In 1891 he received a clock "presented in token of their regard by officers of the Royal Artillery now and formerly connected with the School of Gunnery, Shoeburyness." His medical skill was of great service on February 26, 1885, on the occasion of the explosion of a shell at the garrison pier, when several men were killed. Mr. Coupe was on the spot before a medical man could be obtained, and helped the wounded

Jones.—On August 20, Thomas Pryce Jones, Chemist and Druggist, Llanidloes. Aged 48. Mr. Jones was a member of the Pharmaceutical Society.

McMaster.—On August 20, at Dublin, George McMaster, J.P. of the firm of McMaster, Hodgson and Co., Dublin.

Williams.—On August 16, William Williams, Pharmaceutical Chemist, Swindon. Aged 43. Mr. Williams was a member of the Pharmaceutical Society.

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Plants (F. F. W.—94/8).—(1) *Melilotus officinalis*. (2) *Helosciadium nodiflorum.*

Valerianates in Pills (B. S.—93/26).—Add a little powdered gum acacia and mass with diluted alcohol.

Perfume (C. J.—94/6).—It appears to consist of tincture of orris, with traces of rose, almond, vanilla, and possibly other perfumes.

Cooling Powders (E. J. L.—94/10).—We should imagine not. Presumably, you are aware that the use of the name incurs liability to medicine stamp duty.

Cream for Chapped Hands (G. C.—94/11).—As a toilet preparation which is not specifically recommended for any ailment, it would not be considered liable to duty.

Sodium Salicylate in Mixture (F. E. M.—93/31).—A yellowish or reddish coloration is produced when they are mixed, but similar prescriptions are frequently dispensed.

Toilet Cream (W. F.—94/5).—The label you send would not render the preparation liable to medicine stamp duty, as it is not recommended for any ailment. See reply to "G.C."

Medicine Stamp Duty Act (J. W. D.—94/1).—The question of the qualification of a manager or assistant does not arise in this connection; it is the proprietor of the business who must be legally qualified.

Aniline Dyes (H. M.—93/36).—You can obtain aniline dyes for all purposes from Williams Brothers and Co., Hounslow. They make a specialty of non-poisonous dyes for bakers, confectioners, and mineral water manufacturers.

Special Cardboard Boxes (C. P. 93/29).—We have always understood that the firm you mention was prepared to execute orders for cardboard boxes of every description. Try Ford, Shapland and Co., 6, Great Turnstile, High Holborn, London, W.C.

Optical Books (C. T. J.—93/30).—Very full information was given in the Photographic and Optical Supplement to the *Pharmaceutical Journal*, March 28, 1903. You will see that a number of different books were then recommended for various branches of optical work.

Covered Pots (B. and C.—94/3).—Try the following:—Maw, Son and Sons, Aldersgate Street, London, E.C.; Ayrton, Saunders, and Kemp, Limited, Hanover Street, Liverpool; William Toogood, Heddon Street, London, W.; E. Youldon, Great Garden Street, London, E.

Students' Columns (J. E. W.—93/35).—You will see by the announcement at page 323 that the interests of students are not being neglected, nor their claims to attention overlooked. The mere publication of this week's issue of the Journal should suffice to disprove any suggestion to the contrary.

Book-keeping (W. C. B.—93/32).—Full articles on the subject were published in the *Pharmaceutical Journal*, August 3 and 31, 1901, pages 124, 298. An excellent book for the accounts of a retail business is 'McQueen's A B C System' (J. McQueen and Sons, 60, Lower Addiscombe Road, Croydon. 7s. 6d., post paid).

Liquid Skin (C. J. G.—93/25).—You must have used impure acetone. The purified article is what is used in making such preparations. Have you tried camphoid, a solution (1 in 40) of pyroxylin, in a mixture of equal parts, by weight, of camphor and absolute alcohol? The quantity of camphor can be reduced to half if desired.

Unqualified Practice (H. J. M.—93/27).—Unless you secure registration as a chemist and druggist, it will be illegal for you to style yourself "druggist" or "chemist," or to sell any of the scheduled poisons in the list you enclose. For further information, we must refer you to the British Pharmacopœia and the 'Calendar of the Pharmaceutical Society.'

Iva (W. F. B.—94/4).—*Achillea moschata*, Jaeg. (*Ptarmica moschata*, D.C.), known as Genipp and Iva, is used as a stomachic, aromatic and antiepileptic. It contains ivain, moschatin, and an essential oil, of sp. gr. 0·932, which contains cineol. The other information for which you ask is being obtained by the Curator of the Society's Museums, who will, doubtless, write to you in due course.

Liq. Potass. Citratis (J. L.—93/34).—The following is the U.S.P. formula:—(1) Dissolve potassium bicarbonate, 8 Gm., in water, 40 C.c., filter, and wash the filter with sufficient water to make 50 C.c.; (2) dissolve citric acid, 6 Gm., in water, 40 C.c., filter, and wash the filter with sufficient water to make 50 C.c.; (3) mix the two solutions, and, when effervescence has nearly ceased, transfer the liquid to a bottle.

Sale of Pills (A. J. W.—94/7).—Any person can sell pills or other compounded medicines unstamped, provided no proprietary rights or secret method of preparation are claimed, and no recommendation is expressed or implied on the labels or in advertisements, etc. If labelled as you indicate, therefore, the boxes containing the pills would not require to be stamped.

Docks and Drug Rooms (T. C.—94/9).—Entrance to the drug warehouses at the London Docks is only granted to those whose goods are stored there; no drugs are on show here, and one can only see the outside of packages. The sale-rooms at Mincing Lane may be visited without permission. The sales are held on alternate Thursdays at 10.30 a.m. Next Thursday is a sale day. On the Wednesday preceding the sale the warehouses at Crutched Friars are open, and you will have no difficulty in getting in.

Syr. Pinus Albæ Co. (J. L.—93/33).—The compound syrup of white pine of the 'National Formulary' is doubtless intended, but the proper Latin name is Syrupus Pini Strobi Compositus. The formula is as follows:—White pine bark and wild cherry bark, each 75 Gm.; spikenard root and balm of Gilead buds, each 10 Gm.; sanguinaria root, 8 Gm.; sassafras bark, 7 Gm.; morphine sulphate, 0·5 Gm.; chloroform, 6 C.c.; sugar, 750 Gm.; alcohol, water, and syrup (U.S.P.), of each a sufficient quantity to make 1,000 C.c. The drugs are reduced to No. 40 powder, macerated for twelve hours with a mixture of alcohol and water (1 to 3), then percolated with the same until the percolate measures 500 C.c. The sugar and morphine sulphate are then dissolved in the tincture, and the chloroform added, with sufficient water to make up the required volume. Finally strain.

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Alcock, Barker, Baxter, Beeney, Bramley, Bray, Brown, Carr, Cobb, Cooling, Craig, Davis, Dent, Dewson, Dowzard, Ellison, Felton, Field, Flint, Gadd, Gibson, Goodyear, Grier, Hales, Henderson, Jack, James, Johnson, Lattard, Lees, Loosmore, Marsden, Miller, Parker, Parkin, Payne, Preston, Sawyer, Swan, Timmins, Walker, Wharton, White, Young.

Telegrams "PHARMACEUTICAL JOURNAL LONDON"
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The Journal circulates widely in the United Kingdom, France, Germany, Austria, Italy, Russia, Switzerland, Canada, the United States, South America, India, Australasia, South Africa, etc. It is supplied regularly to the majority of the Chemists and Druggists in business in England, Scotland, and Wales, and to the whole of the members of the Pharmaceutical Society of Great Britain. Orders for Advertisements or for Copies of the Journal should be addressed to the Publishers, 8, Serle Street, London, W.C.

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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, September 3, 1903.

Pepsin-Valuation, on the basis of the amount of albuminoses and peptones formed, is dealt with in an article by Mr. M. Dechan, F.I.C., who has devised an improved method for determining the digestive power of pepsin.

Many So-Called Patent Medicines (according to a medical contemporary) depend for their virtue, or, at all events, for their popularity and potency, simply on the fact that they are disguised alcohol in the strongest form.

A Gateshead Herbalist, described as "The King of the Forest," has been fined for selling unstamped medicines which were liable to duty. The defendant, so it was stated in court, gathered his own herbs, like the old wives of mediæval days.

The German Apotheker Verein, which recently met at Munich, discussed the question of compulsory insurance against old age infirmity for the profession, and it was decided to submit proposals on the subject at the next general assembly, which is to be held at Hamburg.

An Irish Prosecution in which Ginger Wine, containing 3·3 grains of salicylic acid per pint was concerned, has failed. According to Mr. O'Doherty, M.P., for the defence, salicylic acid is put into all cordials "to satisfy the craze of teetotalers," who object to the use of intoxicating liquors.

The Law Regulating the Practice of Pharmacy in the Kingdom of the Netherlands is accorded space in this issue. It is by courtesy of the Privy Council that we are enabled to print the document. It will be interesting to compare the conditions prevailing in this country with those in force in the land of Van Tromp.

With Reference to the Dispensing Difficulty a correspondent sends a very satisfactory and interesting communication. He sees a likelihood of the chemists and doctors in his locality coming to an understanding with regard to dispensing and prescribing, and recommends his fellow pharmacists to talk the matter over with their medical neighbours.

Vol. 71. No. 3385. (4th Series, Vol. 17. No. 1732.)

Before Destroying Old Labels for dutiable preparations chemists should wait until the end of the year. It may not be necessary even then; a little disc bearing the initial letters of the title of the Pharmaceutical Society's Compendium of Medicines will in many cases meet the requirements of the Inland Revenue authorities, and so save the stock labels.

An Anti-Cutting Crusade has been set on foot by the chemists of New South Wales, who, together with the wholesalers, have formed an association on the lines of the P.A.T.A. Similar attempts at organisation have been made in the past, but their failure was attributed to the fact that the sympathy of wholesale dealers had not been sought.

An Overdose of Syrup of Squills, according to a coroner's jury, caused the death of a child aged three months; but the coroner himself, in a letter to the local press, comments on the action of the doctor who instructed the parents to give the infant brandy. Judging by the tone of the letter it would appear that the coroner's opinion did not coincide with that of the jury.

Mr. Chamberlain has been Congratulated, by a Birmingham firm of chemical manufacturers, on "his courage in bringing forward the subject of fiscal reform." The chairman of the company stated, at the annual meeting of shareholders, that, whilst it was impossible for them to do any trade with the United States, the English market was flooded with similar products of American manufacture.

At To-Day's Drug Auctions things passed off very quietly indeed. The only article which sold with anything like competition was Senna, which realised slightly higher prices. Generally the drug and chemical market remains exceedingly quiet; the fluctuations during the week have not been serious, except in the case of Cascara Sagrada, the price of which has risen beyond expectation.

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NEW LABELS FOR OLD.

Though most chemists are now probably considering that, at the end of the year, they may be obliged to destroy a large quantity of labels, the majority do not seem inclined for the present to place orders with the printers for new supplies of certain of their stock labels. This latter fact has been confirmed by an important firm of medical label printers interviewed this week by a representative of the *Pharmaceutical Journal*. Customers, according to a member of this firm, who has during the last few months visited a large proportion of chemists in business, are awaiting developments, and, in the case of labels now nominally "non-liable," but which will be considered liable to duty after December 31, they are only ordering a sufficiency for their immediate needs. As a result, the medical-label trade is much quieter than usual just now. According to the firm in question, "the general opinion among chemists seems to be that at the last moment Somerset House will reconsider its decision, and will not enforce the Act to its full extent in the case of penny packages of medicines. In any case chemists are not, except in a very few instances, ordering labels to comply with the new regulations. A few orders, however, have already been received for small disc labels for pill boxes, and in most cases on these are printed the formulæ according to which the pills are made or a reference to the source from which the receipt is obtained." One or two chemists, it appeared, on further inquiry, had ordered labels to be printed with the name and dose of the pills, and the name and address of the chemist, as well as the composition; this, of course, is impracticable on a one-drachm disc label, though it would be simple enough to make the addition of two or three initials indicating the source of the receipt. Where it is desired to place the full formula on a label for the usual shaped drachm pill-box, it will be necessary to order supplementary labels to place on the bottom. Or, another alternative will be to use shallower boxes with a larger circumference so as to take a larger label.

In answer to a question as to whether the firm was expecting to have to destroy a huge quantity of labels, our informant replied that if the Inland Revenue authorities adhered to their decision, that would be inevitable unless chemists used a supplementary label. And in that case medical label printers would profit to some very slight extent. For the present printers, like chemists, are simply awaiting developments, and the trade in ordinary pill labels is more or less at a standstill. "What do you intend to do now that the Board refuses to give opinions as to the liability or non-liability of certain labels?" asked the Journal representative. "Well, there is nothing left to do but to make a very careful study of the Act, and of course we shall, like the retail chemist, look to the *Pharmaceutical Journal* to give us the assistance we used to get from Somerset House."

STATE RECOGNITION OF PHARMACY.

MUCH credit is due to the American Pharmaceutical Association for the efforts it has made to obtain recognition from the State for those who practise the profession of pharmacy. A special committee of that Association exists for the purpose of fostering the advancement of the status of pharmacists in the service of the United States Government, and at the recent annual meeting of the Association at Mackinac Island, Mich., was able to report that official delegates attended from the United States Naval Department, the Department of Agriculture, and the Public Health and Marine Hospital Service of the Treasury Department. The last-named department, as a result of consideration of the claims made by the Committee, has given the title of pharmacists to the hospital stewards of the service, dividing them into three classes, and increasing the salaries of the various grades. The nomination and attendance of delegates from three important departments of the State to the annual meeting of the American Pharmaceutical Association constitute the first recognition of the kind that pharmacists in the States have ever secured. In marked contrast, however, is the action of the Department of the United States Army, which appears to be marked with some of those characteristics which have been credited to the War Office in this country. When the Surgeon-General of the United States Army was invited to attend the same meeting and to send delegates, he replied that the position of pharmacist did not exist in the army. The sergeants of the Hospital Corps, he continued, must first be soldiers, able to manage and instruct men, and one of their secondary duties was "to dispense the ready prepared tablets or compound the simple medicines required." The Committee of the Association states in its report that the army examination in pharmacy is elaborate and difficult, that there are some graduates in pharmacy in the service, and in some rare instances something more than a counter of tablets is required. While many physicians, in America as in Great Britain, depend on the ready-made prescriptions of the manufacturer, there are still some capable ones who "get up" their own combinations, and the Committee regrets the attitude adopted by the Surgeon-General.

RADIUM.

PROFESSOR DEWAR has already shown that the Bath waters contain a certain proportion of helium, and H. S. ALLEN, in a communication to *Nature*, now states that the King's Bath spring contains a radio-active gas in solution. The radio-activity begins to decrease very soon after the liberation of the gas. If the therapeutic action of the Bath waters is due in any degree to the radio-activity of the gases contained in them, the fact that the activity of the gas now being investigated begins to decrease so soon after the gas has been liberated acquires special significance, as it may confirm the opinion that the waters of various spas have more efficacy when used on the spot. Sir WILLIAM and Lady HUGGINS recently made a communication to the Royal Society, in which they stated that they had discovered several lines resembling those of the spectrum of helium in the light emitted by radium at ordinary temperatures. They now find, however, that the lines are not those of helium, but of nitrogen. As radium is known to oxidise the oxygen of the air, the concomitant production of an oxide of nitrogen can occasion no surprise.

THE PROGRESS OF VACCINATION.

THE annual report for 1901-1902 of the Principal Medical Officer to the Local Government Board is a bulky volume of some six hundred and forty pages, and contains much instructive information. Statistics show that rejection by parents of infantile vaccination, which had steadily increased while the Royal Commission continued its labours, culminated in 1898 in the maximum so far observed of abstention, but since that year acceptance of infantile vaccination has steadily increased. Except as regards the metropolis, there was in 1900 in England and Wales less abstention from infantile vaccination than in any of the five years preceding the enactment of the new law. In London defect of protection of infants against smallpox was due not so much to "conscientious objection" on the part of parents as to default of vaccination authorities and their officers in enforcement of the law. In the year ending March 31, 1902, the Local Government Board was able to issue not less than 974,595 charges of glycerinated calf lymph, all of it of excellent quality, as proved by a recorded "insertion success" of more than 93 per cent. A number of bacteriological reports, which have at various times been alluded to in the *Pharmaceutical Journal*, are printed in the form of an appendix, as also is a further report by Dr. GREEN on the action of chloroform in the preparation of pure vaccine (*vide ante*, **16**, 675). It appears that experiments were conducted with a large number of different chemical substances, in order to ascertain that which most effectually destroys extraneous micro-organisms without diminishing the potency of the specific germ of vaccine. Dr. GREEN's discoveries may be briefly summarised thus:—Of the alcohols, methyl, ethyl, and amyl alcohol injure the specific germ to a greater or less extent; iso-butyl alcohol, glycol, and glycerol all have a selective potency, killing the extraneous micro-organisms without injuring the specific germ, while many polyhydric alcohols have no germicidal value at all. Various alcoholic derivatives were also tried, among them acrolein, glyceric acid, the acetins, glycollic acid and glycocoll. Of these, the last-named only was shown to have a selective germicidal action. A number of other substances, among which were tannic, oxalic, and formic acids, ammonia and creosote, yielded results of an unsatisfactory nature, while eucalyptol, oil of peppermint, borax, saccharin, carbolic acid, and boric acid were found to have a certain value. But chloroform in aqueous solution (1 in 200) was found to be at once the most rapid and most certain agent for eliminating extraneous bacteria, without exercising any harmful influence on the potency of the specific germ of vaccine. It may be expected indeed that very shortly glycerin will be replaced entirely by chloroform. The method of treatment recommended by Dr. Green consists of passing a mixture of chloroform vapour and air through vaccines previously mixed, either with distilled water or with a mixture of distilled water and glycerin. In this way elimination of extraneous organisms is found to be as complete as, and more rapid than, by former chloroform methods, while the specific germ remains fully active.

SLEEPING SICKNESS.

The investigation of tropical diseases is being pursued with more assiduity, perhaps, than is any other branch of medical research. Not long ago a Parliamentary paper was issued from the Colonial Office, recounting the work of the Malaria Commission. The Royal Society has now published a Progress Report from the Commissioners (Lieut.-Colonel D. Bruce and Dr. D. Nabarro) sent to Uganda to investigate sleeping sickness, which for some time has been on the increase in Tropical Africa. The report, though necessarily provisional, contains some important results. Examination of the blood of sufferers, so far as it has gone, has proved the presence of a species of the microbe called Trypanosoma, which has not been found in that of persons free from the disease. The next discovery was that sleeping sickness in Uganda occurs in a strip of country, about fifteen miles wide, along the northern shores of the Victoria Nyanza, and that this district is infested by a species of tsetse fly, another species of which is so fatal to horses and cattle in the south. This has been identified as *Glossina palpitans*, which hitherto has been known only as a West African form, so that its occurrence here is remarkable as a fact of distribution. Experiments have been made to see whether these flies do carry the Trypanosoma from animal to animal. At the date of the report they were in progress; but it had been demonstrated in one case that this had been done.

JURY SERVICE.

This week the lists of common and special jurors are being exhibited on the doors of places of worship and various other public buildings throughout Great Britain. Pharmaceutical chemists are by law entitled to exemption from jury service, and if any pharmacist finds that his name has been inserted in the jury list, he can claim to have it expunged on the day of appeal, and for that purpose should obtain, for production before the justices, a certificate of registration on application to the Registrar of the Pharmaceutical Society, Mr. Richard Bremridge, 17, Bloomsbury Square, London, W.C. The exemption applies to coroners' juries, as well as to those in other courts of law. It must be remembered that any pharmaceutical chemist whose name may be inserted in the jury list will not be entitled to be excused from serving on juries unless he secures the removal of his name from the list. Ignorance in this case is not bliss.

THE BENEVOLENT FUND.

The Secretary of the Pharmaceutical Society intimates that, in looking over the list of subscribers to the Benevolent Fund, he finds he has not yet had the pleasure of receiving for the present year the usual contributions from several subscribers. He therefore solicits a continuance of their kind assistance to so desirable an object, and points out that the benefits of the Fund are exclusively applicable in case of need to any of the sixteen thousand persons whose names appear on the Registers of Pharmaceutical Chemists and Chemists and Druggists, or to their widows and orphan children. Of those registered persons for whose exclusive benefit the Fund is available there are over ten thousand who contribute nothing towards it, and as the total annual relief granted is nearly three thousand pounds, a much larger amount of support is required to enable this expenditure to be maintained. Every registered person is urged to give a small annual contribution, and thus enable the Council to continue to deal with the numerous distressing appeals for assistance. In conclusion, Mr. Bremridge remarks that it is scarcely credible that there is any registered person who could not spare at least half-a-crown a year for the Fund.

THE PHARMACEUTICAL SOCIETY'S SUBSCRIPTIONS.

Among the numerous letters of congratulation received by the Editor, respecting the Students' Number of the Journal published last week, is one from a student who says he is considering whether it is worth his while to become a student-associate of the Pharmaceutical Society. His hesitation appears to be due to the fact that, if he joins the Society immediately, he will only enjoy the privileges until December 31, although he will have paid a subscription for the entire year. This he regards as an injustice and he suggests that the regulations should be altered, apparently with the object of enabling subscriptions to cover twelve months from the date of payment, whenever that should be. Doubtless much can be urged in favour of the proposed alteration, but certain disadvantages would attend such a change in practice, and the matter would, therefore, require careful consideration. Possibly other readers of the Journal have views upon the subject, in which case the Editor will be pleased to hear from them. It may be pointed out that it is only the payment of the original subscription which has to be considered, and that members or student-associates who join the Society late in any year receive complete sets of the *Pharmaceutical Journal* from the beginning of that year.

PHARMACY IN HOLLAND.

Staatsblad of the Kingdom of the Netherlands.

(No. 149.) DECREE of the 2nd of June, 1903, to make known the text of the law of 1 June, 1865 (*Staatsblad* No. 61) regulating the practice of the profession of druggist, amended by the laws of 15 April, 1886 (*Staatsblad* No. 64) and 21 June, 1901 (*Staatsblad* No. 157).

We Wilhelmina, by the grace of God Queen of The Netherlands, Princess of Orange-Nassau, etc.

On the proposal of our Minister of Home Affairs of 27 May, 1903, No. 1,113^1, division *Binnenlandsch Bestuur;*

With reference to the laws of 1 June, 1865 (*Staatsblad* No. 61), 15 April, 1886 (*Staatsblad* No. 64), and 21 June, 1901 (*Staatsblad* No. 157);

Have found good and assented:

to make generally known the text of the law of 1st June, 1865 (*Staatsblad* No. 61), regulating the practice of the profession of druggist, as that law is amended by the laws of 15 April, 1886 (*Staatsblad* No. 64) and 21 June, 1901 (*Staatsblad* No. 157), the same by causing the said amended text to be attached, in its entirety, to this decree.

Our Minister of Home Affairs is charged with the execution of this decree, which shall be placed in the *Staatsblad.*

Soestdijk, the 2nd of June, 1903.

WILHELMINA.

The Minister of Home Affairs,
KUYPER.

Published the sixteenth of June, 1903,
The Minister of Justice,
J. A. LOEFF.

Text of the law of 1 June, 1865 (*Staatsblad* No. 61), regulating the practice of the profession of druggist, amended by the laws of 15 April, 1885 (*Staatsblad* No. 64), and 21 June, 1901 (*Staatsblad* No. 157).

Section 1.—General Regulation.

ARTICLE 1.

Practice of the profession of druggist is the preparation of medicines and the furnishing of the same for medical purposes.

The persons qualified to practise the profession of druggist are only: Apothecaries, assistant apothecaries, and pupil-apothecaries, subject to the regulation laid down in Art. 22, and those medical men to whom permission to do so has been granted.

Section 2.—Of Apothecaries.

ARTICLE 2.

Before practising the profession of druggist, the apothecaries shall have their certificates of qualification *visa*'ed by the Chief Inspector of Public Health in the district in which they establish their domicile.

On application being made for such *visa* the legal certificate of such domicile must be produced.

They shall give notice to the *burgemeester* of their place of abode, of their establishment in that place as apothecaries, showing at the same time their certificates of qualification with *visa.*

ARTICLE 3.

An apothecary may not have more than one apothecary's shop.

He shall practise his profession only in a part of a house, exclusively used for that purpose, always accessible during the day and occupied also during the night by him or by an assistant apothecary.

ARTICLE 4.

In every apothecary's shop there must be kept accurate measures, weights and balances, a copy of the Netherlands Pharmacopœia and the medicines included therein in the form in which they are therein described.

The inspector charged under the Health Law with the supervision over the observance of the legal regulations affecting the practice of the profession of druggist shall decide whether a sufficient quantity of each medicine be present.

In case of a difference of opinion with the apothecary or with the medical men keeping an apothecary's shop, the Chief Inspector shall decide.

The deficiency in the stock must be made good within the time fixed by the Inspector or the Chief Inspector.

ARTICLE 5.

Apothecaries who work exclusively for establishments for the care of sick persons or for other charitable institutions are not required to keep in stock or available for inspection any other medicines than those appearing in a list, drawn up by the medical man of the establishment or institution and signed as "seen" by the Inspector. In this connection Art. 9, 4th paragraph, of the law regulating the practice of the medical profession shall apply.

ARTICLE 6.

Each medicine shall be kept in a suitable vessel, which shall bear an easily legible inscription giving the official and the most usual colloquial name of the medicine.

In the case of medicines not enumerated in the Pharmacopœia, the inscription shall indicate from what prescription they are made up.

ARTICLE 7.

The poisons, to be indicated in a public notice by Our Minister of Home Affairs, after having heard a commission of experts, shall be kept in one or more locked cupboards.

The key of such cupboard shall remain in the keeping of the apothecary or of the assistant apothecary.

The poisons, not included in the Netherlands Pharmacopœia, which the apothecary has in stock shall be kept in the same cupboard or cupboards.

ARTICLE 8.

An apothecary shall supply no medicines, made up to prescription, which are not prepared exactly in accordance with the prescription and from proper ingredients.

If he suspects that a prescription contains a mistake likely to have a harmful effect, he shall at once notify, verbally or in writing, the medical man who gave the prescription. In the absence of the latter person, he shall postpone the delivery of the medicine and give immediate notice of the fact to the said medical man.

ARTICLE 9.

An apothecary may not supply any medicines except on prescription or such as are asked for with definite specification of the medicine required.

ARTICLE 10.

An apothecary shall take care that on the side or top of every object in which he delivers a medicine or prescription a paper shall be attached on which appears the name of the patient, or, if so desired, a number in place thereof, a definite description of the method of using the medicine, the day on which it is supplied and his own name.

The inscriptions shall be upon uncoloured paper in the case of medicines for internal use, and on blue paper in the case of those for external application.

ARTICLE 11.

Apothecaries shall file prescriptions presented to and made up by them, in the order in which they are made up, and shall keep them so for twenty years.

If the shop is transferred to another apothecary, the prescriptions also shall be handed over to the latter; if the shop is given up, they shall be given over to the Inspector by the persons most nearly interested.

ARTICLE 12.

They may not show the prescriptions, for inspection or for copying, to any other person than the medical man who gave them or who attended the patient, to the patient himself, or to the judicial officers or the officers of the State supervision of national health, who are charged with the inspection of those prescriptions.

They shall give an accurate and signed copy of those prescriptions whenever so required by the persons above mentioned.

Article 13.

The apothecaries may not supply any poisonous substances except on the prescription of a medical man, or to apothecaries, to medical men qualified to supply medicines, to veterinary surgeons, or on a written and signed application giving the purpose for which the poisonous substances are required, to other persons personally known to them.

A poisonous substance not prescribed by a medical man shall be delivered in a sealed object on which, in addition to the name, the word *vergift* (*poison*) is clearly visible.

Article 14.

Apothecaries shall enter in a register, without delay, each delivery of poisons, recording the day on which and the person to whom they were delivered. This regulation does not apply to the delivery of poisons on the prescription of a medical man.

They shall file the written applications referred to in the foregoing article, separately from the medical men's prescriptions, and shall keep them for twenty years. The second clause of Art. 11 applies here.

Article 15.

It is prohibited for an apothecary to enter into any agreement direct or indirect with a medical man with regard to the supply of medicines.

Article 16.

An apothecary shall furnish to the officers of the State supervision of national health any information concerning his shop which they may require for the observance of the medical laws and ordinances.

Article 17.

An apothecary shall give a specified account of the medicines supplied, whenever a request to that effect is made by one of the persons described in Article 12.

Article 18.

Permission may be given to an apothecary to take over and manage, temporarily, the shop of an absent, sick, or deceased apothecary, together with his own. The necessary written permission from the Inspector, who shall decide whether sufficient reason therefor exist, must be applied for anew every three months.

With a similar permission, but renewable once a year, he may also take over the management of the apothecary's store of a charitable institution where there is no apothecary.

He is then responsible for all that is in those shops, and also for the preparation of the medicines.

Article 19.

The shop of an absent, sick, or deceased apothecary may be taken over and managed by an apothecary not resident in the place, after the latter's certificate of qualification has been *visa*'ed by the Chief Inspector.

The managing apothecary is responsible for all that is in the shop, and also for the preparation of the medicines.

Article 20.

If on the decease of an apothecary no provision has been made for the management of his shop the key of the poison-cupboard shall be handed to the *burgemeester* of the commune within twenty-four hours by the heirs, or the executor, or, failing these, by the members of the deceased's household.

As soon as any one has been charged with the management the key shall be handed to him.

Article 21.

With regard to medical men qualified to supply medicines, the following articles apply, viz.:—Art. 4, paragraphs 1 and 2, save as laid down in the 4th Clause of Art. 9 of the law regulating the practice of the medical profession; also Articles 6 to 8 inclusive, 10 to 14 inclusive, 16 to 20 inclusive, 24, 25, 26, 31 and 32.

Section 3.—Of Assistant- and Pupil-Apothecaries.

Article 22.

An assistant or pupil-apothecary may only be employed in an apothecary's shop under the supervision of an apothecary or of a medical man qualified to supply medicines.

An assistant apothecary must have his certificate of qualification *visa*'ed by the Chief Inspector.

Whenever an assistant or pupil-apothecary is taken into employment in an apothecary's shop or dismissed therefrom, the apothecary or the medical man shall at once notify the Chief Inspector of the fact.

Article 23.

Assistant- and pupil-apothecaries are responsible for any breach of the present law committed by them. At the same time, the apothecary or medical man remains also responsible in these cases for anything done in his shop in contravention of this law, if any fault or negligence on his part has caused or contributed to the offence.

Section 4.—Of the Supervision of Apothecaries' Shops.

Article 24.

All apothecaries' shops, excepting the military ones and those in prisons, all laboratories and store-rooms of apothecaries, their pharmaceutical apparatus, measures, balances and weights and their medicines, shall be inspected by the Inspector from time to time without notice. The measures, balances, and weights can be inspected by the arrondissement-gauger.

Article 25.

Apothecaries' shops shall be open to the Chief Inspector or the Inspector from 7 o'clock in the morning to 9 o'clock in the evening.

Apothecaries shall take care that the inspection mentioned in the foregoing article can take place even during their absence.

Article 26.

If, on inspection, medicines which must be kept in stock be found unfit for use or be absent, the Inspector shall draw up a *procès-verbal* of the circumstance.

He shall determine the time within which suitable medicines must be added to the stock in the place of those found unfit or absent.

If the apothecary does not admit the unfitness of his medicines he can appeal to the Chief Inspector, to whom the condemned medicines, sealed by the apothecary and by the Inspector, shall be sent, together with the necessary documents.

If the state of the apothecary's shop be found unsatisfactory, so that a further visit is deemed necessary, then the apothecary shall receive notice of the fact from the Chief Inspector.

Article 27.

Any person who appoints a medical man to serve on board a mercantile ship shall have the medicines and surgical instruments which are provided for each voyage approved by or on behalf of the Chief Inspector.

He shall apply for such approval to the Chief Inspector at least five days before the departure of the ship, at the same time submitting the list referred to in Art. 13 of the law regulating the practice of the medical profession.

The said medicines and instruments must be contained in one or more locked chests. If they are found fit for use the person who made the inspection shall seal the chest or chests in which they are contained and shall give a written certificate of approval to the person who applied for the inspection. This certificate must be shown at the registration (*monstering*) by the commanding officer or his substitute.

If one or more of the medicines or instruments be found wanting or unfit, the stock shall not be approved, unless the unfit items be replaced by fit and any deficiency made good.

Article 28.

Medical men qualified to supply medicines and apothecaries who work exclusively for establishments for the care of sick persons, or for other charitable institutions, shall, at the inspection, produce the list, signed by the Inspector as seen, of the medicines which they must keep in stock.

Section 5.—Of the Sale of Medicines.

Article 29.

If an apothecary's shop be publicly sold the poisonous substances may be sold only to apothecaries, medical men qualified to supply medicines, or veterinary surgeons.

The sale may not take place without at least five days' previous notice in writing to the Inspector.

Article 30.

Except by apothecaries and by medical men qualified to supply medicines, the medicines to be indicated by our Minister of Home Affairs, after hearing a commission of experts, may not be sold in less quantities than those to be determined as above for each of the said medicines.

Section 6.—Penal Regulations.

Article 31.

Each offence against the provisions of the present law, except those of Art. 1, those of Art. 12, second clause, for so far as copies are required by Judicial Officers or by Officers of the State Supervision of National Health, those of Art. 19 and those of Art. 25, shall be punished by a fine of from 0.50f. to 200f.

On a repetition of the same offence within two years after the first conviction the fine may be increased to 500f., or a sentence of imprisonment may be imposed of from one day to one year.

Article 32.

For every medicine which, on examination according to Arts. 26 and 27, is found unfit for use, and for every medicine which, by Art. 4 of the present law and Art. 9 of the law regulating the practice of the medical profession, must be kept in stock, but which is absent, a fine shall be imposed not exceeding 3f.

If, when the second inspection is made, the deficiency has not been made good or the unfit medicines have not been replaced by medicines of suitable quality, the above fine shall be doubled.

If, on a third inspection being held, with due regard to the provision of the second clause of Art. 26, the state of the apothecary's shop be found still unsatisfactory, the apothecary shall be liable to a fine of from 0.50f. to 600f., or to imprisonment for a period of from one day to one year.

Article 33.

If any infringement of Art. 29, first clause, take place, the poisonous substances offered for sale shall be seized and declared forfeited.

Section 7.—Transition Clauses.

Article 34.

Those persons who have been admitted as apothecaries or druggists, at the latest, four months before the date on which this law comes into operation, shall retain the qualification which they possessed when this law came into operation, but shall be subject to the provisions of this law in so far as those provisions are not in strife with the above.

Those persons who, at the latest, four months before the date on which this law comes operation, have been recognised and registered, by the Commission of Medical Protection concerned, as shop asistants and pupils of apothecaries, and have been taken into employment in such capacity in an apothecary's shop, may continue to render the same services in the apothecary's shop.

Permission may be granted by the Inspector, on the advice of the Medical Council, to depart from the provisions of Art. 3, paragraph 2, concerning the arrangement of apothecaries' shops already existing when this law comes into operation.

Article 35.

Those persons who at the time when this law comes into operation hold the rank of military apothecary shall be qualified to exercise the profession of druggist in military dispensaries.

Article 36.

The laws of 12 March, 1818 (*Staatsblad* No. 16), of 27 March, 1838 (*Staatsblad* No. 10), the ordinances for the execution of those laws, the law of 12 July, 1821 (*Staatsblad* No. 7), the decrees of 15 July, 1818 (*Staatsblad* No. 31), of 10 October, 1824 (*Staatsblad* No. 58), and of 28 April, 1821 (*Staatsblad* No. 2), and all other ordinances in conflict with the provisions of the present law, are repealed.

Article 37.

This law shall come into operation before or on the 1st of January, 1866.

With Royal decree of 2 June, 1903 (*Staatsblad* No. 149).

Known to me,
The Minister of Home Affairs,
Kuyper.

PATENT MEDICINES.*

It is stated that the Board of Inland Revenue has given notice that after the end of this year stamp duty will be exacted in respect of all compound drugs sold to the public under a title without a formula explaining their composition being thereto attached. This is no new regulation, but simply an extension of the sense in which the regulations have hitherto been read, so as to cover the sale of things which, without definitely claiming to be patent or proprietary medicines, are sold under such titles as "liver pills," etc. The new reading may possibly add a few shillings to the revenue, and may possibly also trouble to a slight extent herbalists and barrow vendors of cheap drugs; otherwise it is not likely, nor probably is it intended, to dissuade the public, rich or poor, from dosing itself with drugs of unknown composition, so long as it pays His Majesty's Government for the privilege. At this distance of time it is not easy to say whether the tax on patent medicines was ever advocated or defended on other than fiscal grounds, but the time has come when the question of the trade in patent medicines should be reviewed from the point of view both of its effects upon the public revenue and of its effects upon the public health. To some extent these two interests may be regarded as opposed, since it is possible to maintain that the public would indulge less freely in patent products if their virtues did not enjoy the pseudo-guarantee of a Government stamp. With or without a stamp, however, people will always dose themselves with patent medicines; and, so long as they confine themselves to simple remedies for more or less trifling complaints, there is no reason why the public revenues should not get some profit out of the transaction, even if patients get none. It is more than questionable, however, whether all patent medicines are innocuous and whether the profit to the revenue is nearly as great as it should be, and whether the whole trade might not be put upon a much more satisfactory footing. Enormous fortunes are made by the proprietors of secret remedies or preparations which are sold as such, and the Government stamp upon them does not represent an adequate percentage of the profits of their sale. The cost of the manufacture of such remedies relatively to the price at which they are sold is, as a rule, ridiculously small, and quite out of proportion to that obtained in any other trade or manufacture. This profit is truly an "unearned increment," since it results simply from trading on that human weakness which leads the public now, as it did thousands of years ago, to take everything *ignotum pro magnifico;* so far as the success really represents work, it represents the work of skilful and profuse advertising only. Increase of the stamp duty would simply mean increase of the price to the public, but it would not be impossible to devise some means of obtaining for the revenues a greater share of the profits out of the pocket of the manufacturer himself, as, for instance, by imposing a stamp duty on all advertisements that appear elsewhere than in the columns of the press or as leaflets in magazines, etc. A heavy tax, for example, might very well be put on hoarding advertisements of patent medicines, especially on those which disfigure the country along the sides of the principal railways. There are a great many patent medicines, however, of which the sale as such ought not to be permitted at all; in short, it should be made impossible to sell them without a full statement of their contents in language which would be comprehensible by everyone. Many of them depend for their virtue, or, at all events, for their popularity and potency, simply on the fact that they are disguised alcohol in the strongest form. The majority of those who buy them, either for themselves or for others, are in entire ignorance of this fact, and there is not the slightest doubt that the sale of alcohol in this apparently innocent form results in enormous harm. There is ample room, therefore, for the study of the patent medicine question both by temperance and fiscal reformers.

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* Reprinted from the *British Medical Journal*, August 29, 1903.

THE DIGESTIVE VALUE OF COMMERCIAL PEPSIN.

BY M. DECHAN, F.I.C.

The ordinary methods employed for ascertaining the digestive value of pepsin do not give any information as to the amount of albuminoses or peptones formed. As the latter are really the most important factors to be determined, any method by which the quantity formed could be ascertained ought to be of special value to the physiologist and therapeutist, as well as to the pharmacist, who is responsible for the effective and uniform action of the drugs supplied by him. It is very generally admitted that the true digestive value of pepsin depends not so much upon the proteids rendered soluble, but upon the amount of diffusible peptones formed. The physiological chemist looks upon the digestive processes as a series of hydration reactions whereby non-soluble proteids are rendered soluble, but non-diffusible, to others which are both soluble and diffusible, the latter condition being necessary to enable the varying metabolic changes to take place, ending in the physiological assimilation of the tissues These hydrolytic changes may be summarised as (1) the production of parapeptone, acid albumin or syntonin, these not being diffusible; (2) proteoses, which include albuminose, globulose, vitellose, gelatose, etc., and are only very slightly diffusible; (3) peptones, which are the final products of gastric or acid pepsin digestion, and readily diffusible.

The hydrolytic or digestive power of pepsin is, therefore, the quantity of peptone which a given weight of pepsin can produce. To determine this, the following scheme, which is an extension of the B.P. method, was adopted in testing nine samples of pepsin of commerce, being the products of eight representative firms. The pepsin solutions were prepared so that each 125 C.c. contained 0·2 per cent. HCl and 0·005 Gm. pepsin. The egg albumin was prepared in accordance with the B.P., and the percentage of albumin, moisture, and ash determined. In this case 13·2, 86·0, and 0·8 per cent. respectively were the results obtained, and were used as the data in the various calculations. Nine 8-oz. bottles were taken and marked by means of a glazier's diamond, 12·5 Gm. of the coagulated and granulated egg albumin were placed in each bottle, 125 C.c. of 0·2 per cent. HCl added, together with 0·005 Gm. of the respective pepsins. These were kept in the incubator for six hours at a temperature of 40·5° C., the contents of each bottle being briskly shaken every half-hour.

With the object of staying the action of the pepsin, the bottles were now placed in the water-bath, the water of which was kept boiling, and allowed to remain there for half an hour. They were then set aside until next morning. The clear liquid was decanted into similarly marked flasks and the undissolved residue poured on to tared filters, dried at 100° C., and calculated to original egg albumin. The filtrates were now very carefully and very nearly neutralised by means of normal potassium hydroxide solution, for the purpose of rendering the acid-albumin or syntonin insoluble. This was allowed a few hours to settle, decanted, filtered, dried, weighed, and calculated into moist albumin, as in the case of the undigested albumin. The nearly neutral filtrate was now saturated with zinc sulphate and set aside for two hours, again decanted, and the insoluble sediment poured on to an untared filter, washed three times with a saturated solution of zinc sulphate and allowed to air dry. The filtrate was now fully saturated with bromine water, and, after one hour, poured on to an untared filter and air dried, as in the previous case. By this means an approximate, if not perfect, separation of undissolved albumin, acid albumin, albuminoses, and peptones have been affected. The filters containing the precipitated albuminoses and peptones were treated by Kjeldahl's method for the determination of the nitrogen, and this calculated into albumin by using the factor 6·25. The error due to the filter and zinc sulphate is allowed for by a blank experiment with these materials. The following tabular statement shows the results obtained.

—	1.	2.	3.	4.	5.	6.	7.	8.	9.
Undissolved Albumin	45·0	2·5	20·7	57·5	58·5	50·5	3·2	3·2	3·1
Acid Albumin	35·4	58·0	4 3	26·0	26·1	30·0	56·6	53·5	57·8
Albuminoses	9·1	14·8	11·5	5·6	7·0	8·5	14·8	13·7	14·5
Peptones	9·2	13 6	16·8	9·6	7·0	9·6	23·9	28·5	23·1
	98·7	98·9	98·3	98·7	98·0	98·6	98·5	98·9	98·5

Note.—It is not necessary to actually determine the percentage of peptones, as this can be ascertained by differences, and thus lessen the work.

Carbon Paper.

A useful manifolding paper may be made as follows. Melt together lard, 12, beeswax, 2, and pour into a warm mortar on to finest lampblack, 2. Mix thoroughly and brush while still warm over the surface of soft paper. Remove excess with a piece of flannel.—*Drugg. Circ.*, **46**, 214.

THE STUDENTS' COLUMNS.

A Competition for Student-Associates.

Introductory and Explanatory.

The preliminary arrangements having been completed, it is now possible to give further details regarding the competition for students, which it has been decided to institute in the columns of the Journal. First of all, it may be said, with reference to letters on the subject which have been received by the Editor, that it has been considered necessary to assume that the apprentices or students for whom the competition is intended have at least some acquaintance with the routine work of a pharmacy, and are used to the handling of drugs, besides having that amount of general knowledge which is required in the examinations which qualify for registration as an apprentice or student by the Pharmaceutical Society. No student, however, need entertain any fear or suspicion that the treatment of the subjects will be outside the range of what is possible for him to understand, or advantageous for him to know. At the same time, a warning may be given that the competition will not constitute a special form of preparation for the Minor Examination. The subjects treated will be those required for that examination, and therefore most of the information given will necessarily be of value in preparing therefor. It is not, however, proposed that the articles shall be written "with one eye on the examination syllabus"; the information given may be of a higher or a lower standard than that of the Minor Examination, and the more advanced student must not complain if in some respects he is reminded of what he already knows. In all the different subjects the aim of the writers will be to assist the student to avoid such misconceptions as experience has shown to be of frequent occurrence. As teachers of pharmacy are aware, there are certain mistakes in every subject of the curriculum, which are wont to be made again and again by successive classes of students, and it is proposed that attention should be specially directed to such points. The Editor will also be glad to receive suggestions from readers of any special difficulties to which allusion might with advantage be made.

The subject of pharmacy, which will probably receive more attention than any other, will be regarded as a branch of applied physics, and particular stress will be laid on the principles which underlie the various stages in the chief processes for the preparation of galenicals. In this respect the scope of the lessons may be expected to correspond more or less closely with that of the Jacob Bell scholarships examination. Again, in the columns devoted to dispensing, while specific examples of the methods of mixing particular substances will be given, special regard will be paid to the general principles which form the basis of the art. The Latin of pharmacy—almost always neglected by students until they begin to prepare for examination—will receive its due share of attention; while botany, chemistry, materia medica, and physics will not be overlooked. With regard to the last-mentioned subject, the application of the principles of physics to the art of pharmacy is of far greater importance than students might suppose, and recognition of the fact should disabuse their minds of the idea that the study of physics is a needless worry. A correct knowledge of principles results frequently in no little saving of time and energy, and though economy of effort is not a thing to be encouraged universally, where such economy can be effected by the exercise of common sense or by the application of the principles of "natural philosophy," that course is surely to be commended.

References will be given in the various articles to suitable text-books by the aid of which the particular topics under notice may with advantage be studied in greater detail or from a different standpoint. A full list of such text-books was published in last week's Journal (see pages 332, 336, and 338). It should not be necessary to say that the series of articles in the Journal will not diminish the need for the use of text-books or for a course of instruction at a school of pharmacy; on the contrary, it will probably lead to the more frequent use of the former and to the derivation of greater advantage from both. It will be desirable, in order to obtain full benefit from the lessons, that students should familiarise themselves with the practical application of any pharmaceutical process which may be described. They should also endeavour to make as many as possible of the preparations official in the Pharmacopœia, and pay particular attention to their general composition and physical properties, as well as to their behaviour towards substances with which they are commonly prescribed. For unless that be done, no written description can possibly have its full educational value in so eminently practical an occupation as pharmacy.

The competition itself will take the form of examination papers periodically set—probably every three months—and limited to the field covered by the lessons given during that period. In judging the merits of the examination papers, attention will be paid not only to the matter of the answer, but to the manner in which it is expressed. Everyone who proposes to practise pharmacy should be able to express his knowledge in grammatical and readable language, even if refinement of style be in some degree lacking. Only student-associates of the Pharmaceutical Society may compete, and they will be required to sign a declaration that the answers represent their own work. Any text-books may be used in framing answers to the questions, but personal assistance from friends will not be allowed. Pseudonyms may be used, and lists will be published with the names of successful competitors and the marks awarded to all; the names of unsuccessful competitors will not be divulged. Competitors should observe the ordinary rules—given weekly in the "Notices to Correspondents" on the last page of the Journal—with regard to the manner in which communications are to be written. The first of the series of articles appears this week. It treats of an important operation with which apprentices usually become familiar at an early stage of their career, though it is doubtful if many of them devote much consideration to the principles involved in the process. The next article will deal with that branch of applied botany commonly known as vegetable materia medica, and the subjects will subsequently be varied from week to week.

DISINTEGRATION OF DRUGS (I).

One of the earliest operations the pupil in pharmacy is called upon to perform is the disintegration of drugs in one way or another. The primitive pestle and mortar constitute the simplest and most frequently employed apparatus, even at the present day, for small quantities of drugs, although more efficient machinery is now employed for large quantities of material. But when used with skill and patience, and a full knowledge of the end in view, the results obtained by means of the pestle and mortar are surprisingly good. Before proceeding to discuss the methods employed in disintegration, the student should comprehend clearly the reasons for submitting the material to the process. It may be that the material is to be administered as powder, or in the form of pills or tablets, or enclosed in cachets: in all these cases the whole of the material is to be swallowed by the patient. For this reason one endeavours to produce a very fine powder—an impalpable powder—which is smooth and free from grittiness when rubbed between the fingers. In this condition the powder is more easily swallowed, or if taken in water or other fluid it mixes more easily to a milky condition and the fineness of the powder materially aids its suspension in the fluid. If the powder is to be made into pills or tablets, fineness is very essential for mechanical reasons, since a coarse powder will produce a crumbly pill-mass and, in the case of tablets, granules for compression, which are not uniform in size or in the distribution of the constituent materials. Still another reason exists in the case under discussion: it is desirable that the substance shall, after administration, be in the condition best calculated to favour its absorption from the stomach and intestines. Fineness of division is here a very important factor, since it increases the surface of the material exposed to the solvent action of the intestinal juices, and therefore hastens solution of such substances as are already soluble, while favouring the maceration and extraction of powdered vegetable drugs, the cells of which contain the active principles whose medicinal action is desired.

On the other hand, the process of disintegration may be preparatory to subjecting the drug to further treatment, such as maceration, percolation, etc., with a view to producing some form of galenical preparation. In this case the disintegration is effected in the manner best calculated to secure the end in view, and that again depends upon the nature of the substance, as well as upon the subsequent treatment to which it is to be subjected. In the case of vegetable substances, it is nearly always desirable to accomplish the disintegration with as little preliminary drying as possible, since the application of heat, however carefully applied, damages the natural colour of the material and dissipates its aroma, which may be due to an important constituent, as in drugs containing essential oil. Sometimes the constituents are coagulated, or rendered less soluble, and occasionally partly or entirely destroyed. Drying the material naturally renders it more friable and brittle, and hence more easily producible in fine powder; but in the case under consideration artificial drying is seldom really necessary. Vegetable drugs when harvested and preserved air-dry still contain about 10 to 20 per cent. of water. A larger proportion causes the material to go "mouldy"—*i.e.*, when obviously moist the germs or spores of the lower vegetable organisms known collectively as "moulds" find in such moist material a suitable medium for their development, which results in the formation of a mycelium produced at the expense of the organic constituents of the drug substance.

The structure of the tissue in air-dried drugs influences the manner in which the disintegration is best accomplished. In the case of leaves it is essential, however small they may be, that they should be broken across in order that the cuticle and epidermis may offer no obstruction to the solvent action of fluids to which the disintegrated leaf is to be exposed. For the epidermis in the living leaf prevents the too rapid loss of water from the succulent cells within, and naturally prevents the access of fluid from without when the whole leaf is immersed. In the case of roots and stem, where the tissue elements are mostly longer than they are broad, a transverse section exposes the interior of the cells and vessels most completely, and hence, when such substances are required only coarsely disintegrated, slicing transversely is usually the method adopted. For seeds and fruits, which do not exhibit such symmetry of structure, bruising in a pestle and mortar, without special reference to direction, is usually sufficient. In the case of materials like calumba and ginger, which contain much starch, it is desirable to slice thinly and not bruise them, in order to avoid ejecting the starch grains from the cells; particularly so if water be the fluid to whose action they are to be exposed, as in the infusions of calumba and senna, since the fine particles of starch render the clarification of the fluid difficult. The fineness of the powder also depends upon the nature of the drugs. Those which contain much mucilage or albuminous substances tend to form slimy or doughy masses when too finely divided and moistened with water. This condition naturally impedes the circulation of the solvent fluid, and not only retards extraction of soluble materials, but materially interferes with any subsequent process of filtration. It should be noticed that substances of this class behave quite differently with alcohol, in which gummy and mucilaginous substances are not soluble, while it hardens or coagulates albuminous substances (proteids).

By reference to the British Pharmacopœia, it will be seen that the directions for making official preparations are framed as far as possible to secure uniformity in the appearance and potency of the products. Thus the quality and quantity of each constituent are stated, temperature and time for treatment are specified, and, where necessary and practicable, the state of disintegration of the solid constituents is defined. Such terms as "thinly sliced," "cut small," or "bruised" are easily understood, and a little variation in their interpretation makes, in most cases, an inappreciable difference in the result. Where it is desirable to be more definite, the condition of disintegration is defined by reference to the sieve through which the material is to be passed before use. "Different degrees of coarseness or fineness of the powders of drugs are distinguished by numbers, such as No. 20 or No. 60, which indicate the number of parallel wires of ordinary thickness contained within a linear inch, in either transverse direction, of the sieves employed by pharmacists." (*vide* B.P. preface, page xix.) In the case of a No. 20 sieve there will therefore be 20 × 20 = 400 holes in each square inch; but in order to secure uniformity, the thickness of the wires needs more accurate definition. With any given sieve the size of the holes will depend upon the thickness of the wires, and it is conceivable that with a sufficiently high number and a sufficiently thick wire there would be virtually no holes at all. By examining various seized sieves, it will, however, be found that with the higher numbers a finer wire is employed, although the practice of different makers varies. As the official definition stands, the powders will only be approximately uniform, since, *e.g.*, a No. 20 powder will contain particles of all degrees of fineness capable of passing through the No. 20 sieve. In the case of homogeneous definite chemical bodies, such as sugar or salt, the powder may be again sifted with a No. 30 sieve, and the particles finer than this eliminated. The powder which has passed the No. 20 but is retained on the No. 30 sieve will consist then of particles nearly uniform in size. But this treatment is inadmissible with non-homogeneous substances, such as roots, leaves, barks, etc., because a very cursory glance will show that the finer particles consist of those elements which are drier or more brittle, while the coarser particles are composed of the tougher and more fibrous portions. Since the distribution of the active principles in vegetable drugs is seldom, if ever, uniform, but more or less localised, the powders of various degrees of fineness separated by such consecutive sifting will vary in potency accordingly.

Books for Reference.

'British Pharmacopœia,' 1898. Preface, page xix.; also Monographs on Infusions.

'Lectures in Practical Pharmacy,' Proctor. Lectures I. and II.

'Pharmacopedia,' White and Humphrey. Article on "Infusa."

REVIEWS AND NOTICES OF BOOKS.

'Lectures on Massage and Electricity.' By Thomas Stretch Dowse, M.D., F.R.C.P. Fourth and Revised Edition. Pp. 454. Price 7s. 6d. net. Bristol: J. Wright and Co. 1903.

The treatment of diseases, and particularly of chronic diseases, by physical methods is slowly but surely receiving greater attention from members of the medical profession in this country. Dr. Stretch Dowse is of opinion, and most persons who have made any study of the question will heartily agree with him, that, in spite of hostile criticism and other causes that have tended to hinder the progress of massage, there is a great future before both massage and electricity, which will sooner or later take their proper and justifiable place in medical treatment. Beginning with a clear explanation of the principles of massage, the author proceeds to deal with its method of application and its effect in a large number of diseases. Electro-physics and electro-therapeutics are the titles of the concluding chapters of the work, which deals also in some detail with the Weir-Mitchell treatment, the Nauheim or Schott treatment in diseases of the heart, the Röntgen rays, light treatment, and modern electrical methods generally for medical purposes. It is probable that there may be greater openings in the future for the pharmacist with a knowledge of electricity to supply much of the apparatus required by medical men who adopt electrical methods of treatment. To all who desire to be well posted in electro-therapeutics Dr. Stretch Dowse's book may be thoroughly commended.

'Chemistry: General, Medical, and Pharmaceutical,' including the Chemistry of the British Pharmacopœia. By John Attfield, F.R.S., M.A., Ph.D., F.I.C., F.C.S. Edited by Leonard Dobbin, Ph.D., F.I.C., F.C.S. Eighteenth Edition. Pp. xvii. + 854. Price 15s. London: Gurney and Jackson, 1, Paternoster Row. 1903.

That a book of over eight hundred pages should reach its eighteenth edition in the space of thirty-six years is a fact which speaks for itself—and for the book. Dr. Attfield's 'Manual on the Science of Chemistry and its Applications in Medicine and Pharmacy,' was a standard work of reference before some distinguished pharmacists of to-day were born, and such it has always remained. In the preparation of this new edition the author has for the first time sought the collaboration of an editor. Dr. Dobbin, it may at once be said, has done his work unostentatiously and well. There has been much to do. For, although the distinguishing features of previous editions are preserved, innumerable minor changes have been introduced, and much new matter added. The Manual, however, contains less than did the last edition, the pruning-knife having been wisely brought into frequent requisition. But there is still room for more condensation and excision. The tedious prefaces, introductions, advice to students, author's notes, and the like are not attractive to the student, nor do they greatly improve either his mind or his methods. The nomenclature of the book has a character quite its own, and for the most part highly commendable. In these days, when the outcry is so loud against the study of those classical languages which have made English literature what it is, one reads with particular gratification the Greek, Latin, and sometimes the Hebrew origin of the technical terms of modern chemistry. Dr. Attfield also very rightly avoids the common use of the hybrid terms "hexavalent" and "tetravalent," preferring "sexivalent" and "quadrivalent." The mathematical symbol = is not misused to any great extent; the author has avoided the vulgar error of some writers on volumetric analysis, who state, for example, that because sulphuric acid reacts in a certain proportion with calcium hydrate, therefore $\frac{97{\cdot}34}{2} = 48{\cdot}67$. As instances of the actual "newness" of the new edition, in contrast with the want of that quality in new editions of some books of the same size, it may be mentioned that the formula for barbaloin, published this year by Léger (*vide* Vol. 16, p. 386) finds a place. Of later date still is Nicholls' process for the determination of arsenium in Ferri Arsenas, this research having been embodied in a paper communicated to the British Pharmaceutical Conference at Bristol (*vide ante*, p. 163), exactly one month before Dr. Attfield's Manual was placed on sale. Surely, however, space might have been found for fuller and more satisfactory explanations of the chemistry of articles mentioned in the British Pharmacopœia. Something more than mere statements of fact (or fiction) is required in explanations for students. The colossal index, always one of the very best features, remains as valuable as ever, and will probably ensure the continued use of Attfield's Manual as a work of reference when others fail. Many pharmacists will doubtless remember occasions when they have referred to various works for information on some particular point of pharmaceutical chemistry, and have been obliged to fall back on "Attfield." There is no reason to believe that in this, or many other respects, the eighteenth edition will fall short of the expectations of those to whom previous editions were familiar.

PHOTOGRAPHIC LITERARY NOTES.

'**The Photogram**' for September, 1903, contains several interesting articles for photographers. The first is by A. Lockett on "A Mirror Accessory for the Camera," the author showing the advantages of a "reflectoscope" in dealing with architectural subjects such as the fretted roof of abbey or cathedral, or frescoed ceiling, and showing how a mirror may be attached to the lens of the camera. Another article deals with "Knifework on Negatives," by T. J. Healy, who gives some useful hints to the retoucher. "The How and Why of the Lippmann Colour Process" is dealt with by T. A. Donohoe, F.R.M.S., and a special editorial note is devoted to "Development Without a Dark Room."

"**Press Photography**" is the title of a very readable article, by C. H. Claudy, in the June number of the 'Photo-Miniature.' Press photography is described as the science of making illustrations by photography for the press. The field of work is said to be as wide as the world itself, and for the man with a camera, who has a fancy for making his instrument pay for itself and its supplies, much useful information is given.

'**The Art of Retouching**,' by J. Hubert, F.R.P.S., forms No. 6 of "The Amateur Photographer's" Library, published by Hazell, Watson, and Viney, Limited. This little work, which is sold at 1s. net, has already run through eleven editions, and in the present revised edition the author has added a description of the now extensively used and valuable method of retouching with a knife, and has more fully gone into the old professional practice of working upon a coating of matt varnish or a stretched vegetable tissue or paper applied on the back of the negative.

'**Carbon Photography Made Easy**,' by Thomas Illingworth, just published at 1s. nett by Iliffe and Sons, Limited, has been written with a view to answering the questions which arise in the minds of amateur photographers concerning the carbon process. The author has endeavoured to give complete instructions sufficient to enable anyone who has never made a carbon print before to make one by the easiest and most direct method. He has also tried to include everything that the carbon worker may wish to know about the process and to give in some detail its many modifications, though the working directions for the commoner methods are based upon the result of his own experience.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Enzymic Decomposition of Fats, Oils, and Esters.

K. Braun and F. C. Behrendt have made comparative experiments as to the action of the enzymes in castor-oil seed and jequirity seed on lanolin, carnaüba wax, and lower esters of organic acids. On treating 10 Gm. of lanolin with 25 C.c. of water and 2·5 Gm. of finely-powdered castor-oil seeds at 40° C., the total acid liberated after ninety-six hours corresponded to 3·65 C.c. of N/10 alkali; whilst in parallel experiments with jequirity seed the free acid corresponded to 11·45 C.c. after ninety-six hours, and, after neutralisation of the acid first liberated, to 3·9 C.c. of alkali after 120 hours. Similar experiments with carnaüba wax showed that here, too, the jequirity seed had a stronger decomposing effect than the castor-oil seed. These results show that neutralisation of the acid first formed has not the same stimulating effect on the jequirity enzyme (abrin) when acting on lanolin or carnaüba wax as in the case of castor oil. The action of the enzyme of castor-oil seeds, however, is checked in all cases by neutralisation of the free acid. Only a moderate degree of warmth is required to promote the decomposition. Experiments with simple esters of the aliphatic and aromatic series gave analogous results, with the exception that in the case of ethyl benzoate the decomposition effected by the castor-oil seeds was greater than that effected by jequirity seed. It was proved that light had no appreciable influence on the decomposition in either case. Slight quantities of mercury, copper, and iron salts checked the enzymic decomposition, as was also the case with alcohol. On the other hand, magnesium salts, alkali-metal salts, and tungstic compounds had no influence on the results. Experiments made with mixtures of equal quantities of castor-oil and jequirity seeds gave the curious result that the free acid had an injurious effect, whilst the small amounts of acid liberated after neutralisation of the free acid soon disappeared again. The experiments with emulsin were repeated, the pure enzyme being used this time. It was found that it effected only a very slight decomposition of fats, and that the action was not increased by the presence of free acid. Less acid was liberated from castor oil by the action of crushed bitter almonds than by the pure emulsin, which the authors attribute to the emulsin in the almonds being used up in the decomposition of the amygdalin. When castor oil was treated with amygdalin no decomposition was observed, as was also the case when a mixture of equal parts of pure amygdalin and emulsin was used. In like manner it was found that the myrosin from black mustard seed and gold lac (*Cheirantus cheiri*) had a fairly energetic action on castor oil, but that when potassium myronate was also present no decomposition occurred. The myrosin of gold lac comes about midway between emulsin and ricin as regards its activity. The buds showed greater enzymic activity than the stalks or leaves, whence the authors conclude that the myrosin in gold lac is concentrated in the buds.—*Berichte*, **36**, 1900, through *Journ. Soc. Chem. Ind.*

Sandalwood Oil Capsules.

The quality of the medicaments supplied in capsules and pills has often been the object of examination, not unfrequently with remarkable results. R. Peter finds the sandalwood oil capsules of (German) commerce to be by no means above suspicion. Out of seven samples examined the oil in one was grossly adulterated, and that in two others was deficient in santalol, whilst that in the remaining four could be accepted as genuine. *Pharm. Zeit.*, **48**, 573.

Determination of Sulphuric Acid.

F. Raschig finds that, in the determination of sulphuric acid in a cold solution, Wolf Müller's method of precipitation with benzidine hydrochloride in excess, gives excellent results if some slight modifications are introduced. 18·5 Gm. of benzidine is warmed with 200 C.c. of N/10 hydrochloric acid and 1 litre of water until all is dissolved, the solution is then filtered and diluted to 10 litres. 100 C.c. of this solution are theoretically equivalent to 0·098 Gm. of sulphuric acid, but in practice 150 C.c. are taken to precipitate 0·1 Gm. of sulphuric acid as insoluble benzidine sulphate. The solution to be analysed is treated with the benzidine solution in the cold, the mixture stirred, and, after five minutes, the precipitate of benzidine sulphate filtered off with the pump, and washed with water. Filter and precipitate are then placed in an Erlenmeyer flask, shaken up with 50 C.c. of water, a drop of phenolphthaleïn solution added, and titration effected with N/10 sodium hydroxide solution. As soon as the red colour only disappears slowly, the flask and contents are heated to 50° C., and the titration completed at that temperature. To make sure that the reaction is completed, the flask is heated to boiling, and the titration, if necessary, continued. The duration of a complete determination is fifteen minutes. Some analytical results are given. The method is inapplicable if ferric salts be present. Organic substances, such as starch, also prevent the complete precipitation of the benzidine sulphate.—*Zeits. angew. Chem.*, **16**, 617, through *Journ. Soc. Chem. Ind.*

Determination of Phosphorus in Phosphorated Oil.

W. Staub has observed that when phosphorated oil is shaken with solution of copper sulphate, finely-divided brown or black copper phosphide is formed; this yields up its phosphorus to the water as phosphoric acid, while the copper combines with more phosphorus from the oil, the reaction continuing until the phosphorus is entirely removed. Staub suggests the following method for the detection and approximate determination of free phosphorus in phosphorated oil:—Shake 5 C.c. of the oil with 5 C.c. of a 5 per cent. aqueous solution of copper sulphate vigorously for exactly two minutes, then set aside. The resulting colorations are appended:—

Percentage of Phosphorus.	Colour Observed.
0·2	black during the shaking
0·02	black after two minutes
0·01	dark brown after four minutes
0·005	light brown after one hour
0·0025	few brown flocks after one hour

—*Pharm. Zeit.*, **48**, 616.

Balata.

It has been supposed that the balata tree of Demerara is not the same as that of Trinidad, but Hart finds no difference in the two kinds when cultivated in Trinidad, although trees of the same species vary considerably in the forests. Balata is exported from Trinidad and Venezuela, and realises about 2s. 6d. per lb. (*Rep. Bot. Gard.*, *Trinidad*, **303**, 8). Attempts have been made to ascertain if balata could be obtained from the leaves. Professor E. Jungfleisch, of Paris, obtained from the leaves, in 1896, about 4 per cent. of balata, and Professor H. P. Wijsman, of Leyden, 5 per cent., but recent experiments made at Haarlem by Professor Greshoff gave a yield of only 1·7 per cent. In 1901 C. Mannich, of Berlin, obtained from the leaves by extraction with chloroform 5 per cent. of a product insoluble in alcohol, but it did not possess the good qualities of balata. Dr. Greshoff has, therefore, come to the conclusion that it will not pay to extract balata from the dried leaves in Europe, on account of the freight, nor in South America, on account of the expense of the necessary chemicals.—*De Ind. Mercuur*, **432**.

PRACTICAL NOTES AND FORMULÆ.

Violet Perfume for Powders.

Bergamot oil, ½ drachm; sandal oil, 1 drachm; bitter almond oil, 4 drops; otto of rose, 8 drops; tincture of musk, 2 drachms; tincture of orris, 16 fl. oz.—*Spatula*, **9**, 87.

Aromatic Glycerole.

A transparent, clear glycerole, firmer than glycerin ointment, easily spread on the skin, readily incorporated with various medicaments, is obtained by the use of the following formula:—Tragacanth, 4; acetone, 60; glycerin, 46; water, 18; essential oil, 4.—*Journ. Pharm. d'Anvers*, **59**, 62.

Liquor Santal Flav. c. Cubeb. et Buchu.

Sandal wood oil, 60; cubeb oil, 30; copaiba oil, 22·5; pimento oil, 2·5; cassia oil, 2; tincture of buchu, 180; infusion of buchu (1:7), 180; alcohol (90 per cent.), 240; solution of potash, 180; magnesium carbonate, 30; distilled water, 90. Heat the potash solution with the oils, and allow to stand in contact for two days. Then add the water, shake thoroughly, add the tincture and infusion of buchu, the spirit, and lastly, the magnesium carbonate. Shake up thoroughly, allow to stand for twenty-four hours, then filter. Dose, 1 to 2 teaspoonfuls.—*Pharm. Post*, **36**, 428, after *Deutsch. Amer. Apoth. Zeit.*

Antidiphtheric Lozenges.

It is stated that Roux's antidiphtherial serum is now prepared in the form of lozenges for use during convalescence. It has been observed that diphtheria bacilli are found in the mouths of patients several weeks after recovery, and are liable to convey the disease to others. The use of the lozenges overcomes this danger, and renders unnecessary the preventive inoculation of those who come in contact with the patient.—*Scientif. Amer.*, **88**, 425.

Palatable Castor Oil.

Little, in the *Brooklyn Medical Journal*, recommends the following manner of prescribing castor oil for children:—Castor oil, glycerin, of each, ½ fl. oz.; oil of winter green, 10 minims. Mix. A teaspoonful to a tablespoonful, according to age.—*Therap. Gaz.* [3], **19**, 319.

Embrocation for Itch.

Glycerin, 200 Gm.; sulphur, 100 Gm.; powdered tragacanth, 2 Gm.; the yolks of two eggs; oil of lavender, 1 Gm.; oil of lemon, 1 Gm.; oil of peppermint, 1 Gm. To be rubbed in over the affected region.—*Bull. Gén. de Thérap.*, **145**, 720.

Putz Pomades.

(1) Dried sodium carbonate, 1; tallow soap, 4; levigated emery, 25; water, 25. Heat on the water-bath and stir until smooth. (2) Jewellers' rouge, 1; petrolatum, 1; oil of mirbane, *q.s.* to perfume. (3) Oil of turpentine, 1; finest levigated emery, 1; jewellers' rouge, 2; petrolatum, 2; oil of mirbane, *q.s.* Rub together. (4) Finest levigated emery, 5; jewellers' rouge, 5; mutton suet, 4; crude oleic acid, 4; perfume, *q.s.* Melt the suet and oleic acid together in the water-bath and remove from the fire. When cool, but still soft, add the powders and rub down until smooth. (5) Stearin, 8; mutton suet, 32; neat's-foot oil, 2; jewellers' rouge, 20; precipitated chalk, 40. Proceed as in No. (4). (6) Finest levigated quartz sand, 2; jewellers' rouge, 3; petrolatum, 5. Mix. Instead of quartz sand levigated infusorial earth may be used.—*Nat. Drugg.*, **33**, 67.

Palatable Syrup of Magnesium Sulphate.

Little prescribes magnesium sulphate dissolved in syrup of raspberry thus:—Magnesium sulphate, ℥ss.; syrup of raspberry, 2 fl. oz. Dissolve. Dose, a tablespoonful or more.—*Therap. Gaz.* [3], **19**, 319.

Handle Cement.

Resin, 12; sulphur flowers, 3; iron filings, 5. Melt together, fill the handle while hot, and insert the instrument.—*Spatula*, **9**, 281.

Bismuth Lactate.

The following method of preparing this salt is official in the recently published Supplement to the Dutch Pharmacopœia:—Bismuth subnitrate, 6, is treated in a flask with a mixture of solution of ammonia, 5, and water, 10; after allowing the mixture to stand for some time the supernatant liquid is decanted, and the precipitate washed by decantation. Lactic acid, 5, is then added, and the resulting solution filtered into alcohol, 90 per cent., 10. The precipate thus obtained is collected and dried. It is required to yield 55 to 59 per cent. of Bi_2O_3, when ignited with ammonium nitrate.—*Pharm. Centralh.*, **44**, 397.

Domestic Healing Ointment, "Mutter Salbe."

Olive oil, 4; thus, 2; yellow wax, 1; lard, 1; red lead, 1; honey, 4; camphor, 2. Melt the thus, beeswax and lard in the oil. Then heat the mixture gradually to near its boiling point, gradually adding the red lead and stirring constantly until it assumes a dark brown colour. Then remove from the fire, and when it becomes somewhat cool, add the honey, and lastly, the camphor.—*Amer. Drugg.*, **42**, 188.

Aqueous Preparations of Menthol.

De Crésantignes employs a small quantity of tincture of quillaia to dispense menthol in an aqueous menstruum. Thus he prepares a menthol *mixture* as follows:—Menthol, 3 to 5 Cgm.; tincture of quillaia, 5 Gm.; glycerin, 10 Gm.; distilled water to make 125 C.c. Dissolve the menthol in the tincture, add the glycerin, and finally, with agitation, the water. *Menthol Compress.*—Menthol, 15 to 30 Cgm.; tincture of quillaia, 10 Gm.; distilled water to make 155 C.c. *Menthol Gargle.*—Menthol, 10 to 20 Cgm.; tincture of quillaia, 20 Gm.; water, or saturated solution of boric acid, 1 litre.—*Bull. du Synd. du Nord.*, through *Journ. Pharm. d'Anvers*, **59**, 101.

Glycerin as a Pill Excipient.

Glycerin is recommended as an excipient for pills containing essential oils, oleoresins, and certain chemical salts, thus:—(1) Sandal wood oil, 1; glycerin, 1; powdered liquorice root, 2. (2) Turpentine oil, 1; glycerin, 1; powdered liquorice root, 2·5. (3) Maracaibo copaiba balsam, 2; glycerin, 1·5; powdered liquorice root, 3·5. (4) Para copaiba balsam, 2; glycerin, 1·5; powdered liquorice root, 4. (5) Creosote, 2; glycerin, 1; powdered liquorice root, 4·5. (6) Where two substances are prescribed in the same pill, the quantity of glycerin requisite for each is calculated; thus, sandal oil, 30 grains; balsam copaiba, 15 grains; divide into thirty pills. The balsam requires 10 grains of glycerin, and the sandal oil 30 grains. This quantity is added with sufficient liquorice powder to mass. (7) Extract of male fern, 2; glycerin, 1; powdered liquorice root, 2·5. (8) Phenol in crystals, 2; glycerin, 1; powdered liquorice root, 4·5. (9) Ichthyol, 1; glycerin, 1; powdered liquorice root, 2·5. (10) Crystalline ferric chloride, 2; glycerin, 1; powdered liquorice root, 3.—*Pharm. Weekblad*, through *Journ. Pharm. d'Anvers*, **59**, 142.

GERMAN APOTHECARIES' ASSOCIATION.

ANNUAL ASSEMBLY AT MUNICH.

The thirty-second annual conference of the German Association of Apothecaries (Apotheker-verein) was held at Munich on August 26, 27, and 28, 1903, Dr. Salzmann, of Berlin, the President, in the chair. At present the Association comprises 3,502 members, divided among seventy-seven districts, of which seventy-five were represented by one hundred delegates at the opening of the proceedings, in which also participated representatives of the Swiss Apothecary Association and of Dutch apothecaries, whilst telegraphic greetings were received from Austrian friends who were unable to be present on that occasion.

Compulsory Insurance for the Profession.

The transaction of formal business having been completed, the Conference proceeded to discuss the question of infirmity and old-age insurance. On this subject various proposals were submitted, although all were in favour of compulsory insurance. Eventually a motion presented by the Council of the Association was unanimously adopted, approving in principle the introduction of compulsory insurance, and, in point of fact, insurance by way of Imperial legislation against old age and infirmity of apothecaries and of their survivors (apparently widows and children). It was decided in this connection to authorise the Council to submit proposals on the subject at the next general assembly, which is to be held at Hamburg, and in the meantime to consult with the members of the Association.

Financial Assistance to Apothecaries.

The question of the further development of the still comparatively new Credit Association of German Apothecaries, which has been formed as a company of 200 shareholders of £50 each, and has already a reserve fund of £200, led to a long discussion. It was emphasised that considerable difficulty is sometimes experienced by apothecaries in obtaining a loan of money, and that it is necessary so to improve an institution of credit for the profession that in course of time it would obtain the right of issuing mortgage deeds. It was also suggested that a central establishment should be founded in Berlin, with branches in the provinces and in the individual States forming the German Empire. Although no direct proposals were made in this direction, it was mentioned that the Credit Association had already acted advantageously in the negotiation of mortgages, and the Council and the members were requested to support and promote the interests of this loan society.

An Imperial Medicine Tax.

The Council of the Association brought forward the subject of the imposition of a uniform medicine tax throughout the Kingdom of Germany. It was proposed by way of resolution on behalf of the Council that the Association should agree in principle to the introduction of an Imperial medicine tax, on conditions, among others, that the tax must at least pause at the amount of the present average rates of the various German medicine taxes, as a cheapening of medicines would deprive a large number of apothecaries of their livelihood; that in the elaboration of such a tax representatives of the pharmaceutical profession should be invited to co-operate from all the States which now possess separate medicine taxes; and that an appropriate simplification of the methods of calculation under the tax should be effected. After a protracted discussion, the resolution was adopted.

The Question of Education.

Dr. Bedall, of Munich, presented a motion on behalf of the Upper Silesian district in relation to the preliminary and advanced education of apothecaries. As amplified by the Council, the resolution, which was approved with three dissentients, expressed the regret of the Conference that the reform of pharmaceutical preliminary and advanced education, which had been demanded by the profession for many years past, and had been recognised by the Imperial Government as being urgently necessary, had not yet been carried out. The resolution further requested the Council to use its best endeavours to secure the speedy introduction of a new regulation, and that the basis for the same should be chosen from a Major certificate of a gymnasium or a practical gymnasium.

The presentation by Dr. Rapp, of Munich, of a report dealing with bacteriological investigations in the laboratory of the Munich Hospital, was followed by the reference to the Council for consideration of various motions submitted by district branches of the Association, and the adoption of a resolution condemning the dangerous methods resorted to in Prussian prisons by the administration of medicines by persons who have not been educated as pharmacists. In conclusion, the Conference authorised the Council to approach the Imperial Chancellor in order to elucidate the question, which is not settled by the present law, as to the number of tubes with saccharin which pharmacists may dispose of at any one time.

IRON AND STEEL INSTITUTE.

AUTUMN MEETING.

Tuesday and Wednesday, September 1 and 2, 1903, in the new Town Hall, Barrow-in-Furness, Mr. Andrew Carnegie, President, in the chair.

The Future of the Industry.

In the course of his presidential address, Mr. Carnegie spoke of the future of the iron and steel industry, and of the changes that were likely to come about in the next thirty years. It was scarcely possible that the United Kingdom could increase its product of iron and steel materially. The vital element in the matter was the supply of iron ore and where and how they could obtain it. The United States Steel Company had secured an abundant supply of the best ore obtainable, which would keep them going at the present rate of consumption for sixty years. But sixty years was as nothing in the life of a nation. It was upon the future discoveries of iron ore that the future of cheap steel manufacturing even in America depended. There were immense deposits in now inaccessible parts. He did not think that steel would again be produced and sold without loss at three pounds for a penny. Neither Britain nor America need fear that steel manufacture would be wholly lost, for the world would gladly pay the increased price to obtain it. During the next half century, it seemed to him, America would increase her output at a tremendous pace.

Manufacture of Steel.

Messrs. J. E. Stead and Arthur W. Richards, in an important paper, showed that by simply heating steel up to a certain temperature, however bad the steel might be, they were able to restore it to its normal condition, and even to improve it. The authors thought an account of their work would show that it was not necessary to forge dangerously crystalline material in order to restore it to good quality, as was generally supposed. They had subjected rails, tyres, axles, etc., to chemical analysis and microscopic examination, with the following results:—(1) The microscope indicated that heating at high temperatures caused a great development in the size of the crystalline grains, and reheating to about 870° C. restored the original or a better structure; (2) if all structural steels, in their normal rolled or forged conditions, are good, they can be readily deteriorated in quality by heating to a temperature a little above that to which steel is most commonly heated previous to rolling or forging; (3) Steel made brittle by such heating, and dangerously brittle by heating it at a considerably higher temperature, can be completely restored to the best possible condition without forging down to a smaller size or by re-smelting. Practically, all their results showed that not only were the original good qualities of normally-rolled steel, after becoming brittle, restored by the exceedingly simple treatment of heating to about 900° C. for a very short time, but that such steel was made considerably better than it was. In every large forge and smith's shop pyrometers and furnaces for re-heating the forgings should be systematically used, for the authors' experience showed that in many works steel was forged, rolled, and finished at temperatures far above what was the best for the endurance of the steel.

IRISH CHEMISTS', ASSISTANTS', AND APPRENTICES' ASSOCIATION.

MEETING OF COMMITTEE.

On Monday, August 24, 1903, in the Gresham Hotel, Upper Sackville Street, Dublin, the President, Mr. E. B. Aplin, in the chair. There were twenty-six members present. Sub-committees of five members each were formed to look after the financial, executive, and entertainment department of the Association. Mr. R. G. Creed was elected Hon. Secretary, *vice* Mr. Doyle resigned. Arrangements were made to procure permanent meeting rooms, and it was decided to hold an inaugural supper in the Gresham Hotel early in October. The rules of the Belfast Chemists' Society were promised as a guide in compiling rules for the Dublin Association. The supply of copies of the trade press was discussed in relation to country members, and a satisfactory result arrived at. It was decided that the Association act as far as possible as a medium for procuring appointments for its members, and steps were taken to cater for the literary tastes of the assistants as soon as new rooms be secured. A Belfast member advocated the establishment of a thrift or tontine branch, but nothing came of the suggestion. Membership tickets entitling the holders to certain privileges were spoken of and generally approved. The preparation of rules was by agreement left to the general meeting. Thirteen new members were elected.

NEW REMEDIES.

The Notes in this column embody recent suggestions in therapeutics, for the information of dispensers; they deal with novel applications of drugs and preparations in common use, in addition to new remedies strictly so-called.

Gonosom.—Gonosom is an oily, yellowish green translucid liquid soluble in alcohol, ether, and chloroform. It is a solution of kava-kava resin in sandal oil, and is given as a remedy for gonorrhœa in doses of 3½ to 4½ grains, in capsules, eight or ten of which are to be taken daily.—*Répertoire* [3], **15**, 367, after *Deutsch. Med. Zeit.*

Chloroform as a Vermifuge.—Leger, of the French Colonial Army, speaks highly of the value of chloroform as a vermifuge, especially for the treatment of cases of the particular intestinal parasites which are common in the Tropics. It is best administered in 15 minim doses, suspended in syrup, and repeated every three-quarters of an hour, the patient having been previously put on a milk diet, and the bowels emptied by means of an enema. Between the third and fourth doses an ounce of castor oil is given. This is usually followed by the expulsion of the entire parasite.—*Med. Press,* **126**, 580.

Sodium Salicylate in Malarial Fever.—A. D. E. Kennard finds that sodium salicylate reduces the temperature in malarial fever quite as rapidly as quinine, and relieves the acute pains in the limbs after a few doses. It is suggested that the salt, which appears to be not much used in the treatment of malarial fever, might prove a useful substitute for or adjuvant to quinine, especially in those cases which show an intolerance to treatment with that alkaloid.—*Lancet,* **164**, 95.

LEGAL INTELLIGENCE.

Medicine Stamp Duty Acts.

Sale of Medicines Unstamped.

On Friday, August 28, 1903, at Gateshead Police Court, a charge was heard against Mark Allan, herbalist, of 208, Askew Road, who was prosecuted on two counts, for selling "Golden Drops" and a "noted liniment" without a stamp as provided by the Inland Revenue.

Mr. E. Clark pleaded guilty on behalf of Allan.

Mr. Hawkins, solicitor, of Somerset House, said that an Inland Revenue official visited defendant's shop, and asked for a nostrum he saw advertised in the window, called "Golden Drops." With the bottle of "Golden Drops," for which he was charged 6d., the Inland Revenue officer was handed an advertisement stating that the drops were for kidney troubles and lumbago. In the shop the officer saw another advertisement of a noted liniment for sprains and swellings, and also purchased a bottle of that liniment.

Mr. Clark said that his client sent the Inland Revenue no explanation, but a copy of his advertisement. This, he thought, was the first prosecution of the kind in the neighbourhood. His client was what he professed to be——

Mr. Hawkins (handing an advertisement to the Bench): He professes to be the "King of the Forest."

Mr. Clark: "King of the Forest for herbal medicines." That is what he is; he gathers his own herbs. Continuing, Mr. Clark said his client was innocent of intention to defraud. His sale of these medicines had not been large, and the speaker thought the Government had not been defrauded of much. He suggested that a nominal fine would do in this case.

A fine of 10s., with costs, was imposed in each case, a total of £2 7s.

Sale of Food and Drugs Acts.

Ginger Wine.

At Carndonagh (Ireland) Petty Sessions a prosecution was brought by the Inspector of Food and Drugs against James O'Doherty, Carndonagh, for selling ginger wine containing 3·3 grains of salicylic acid per pint, the complainant alleging that this was injurious to health. Mr. Wm. O'Doherty, M.P., appeared for the defence.

The Inspector read a certificate from Mr. Barklie, analyst, Belfast, certifying that the ginger wine contained 3·3 grains per pint of salicylic acid, and that in his opinion it was injurious to health.

Mr. O'Doherty pointed out that the acid was put into all cordials to satisfy the craze of teetotalers, who objected to the use of intoxicating liquors in the manufacture of cordials, and for the purpose of preservation. Cases such as this had been heard all over England, and were invariably dismissed.

Dr. O'Callaghan, Medical Officer of Health for the district, stated he had heard the certificate of Mr. Barklie read. The dose prescribed by the British Pharmacopœia was from 5 to 20 grains, which was, in his opinion, a far larger quantity than that contained in the sample produced in Court, and it was not injurious to health.

The magistrates held that the drug in the quantity used was not injurious to health, that it was added for preservative purposes, and they dismissed the case.

High Court of Justice—Chancery Division.

Alleged Infringement of Odol.

On Wednesday, August 26, 1903, before Mr. Justice Walton, Mr. Bramwell Davies, on behalf of the owners of Odol, asked for an injunction, pending the trial of an action, to restrain Max Schliephak, Limited, of Charlotte Street, London, W.C., from selling as Odol a dentifrice not of the plaintiffs' manufacture. The undertaking was given, pending the trial.

POISONING CASES AND INQUESTS.

The deaths by poisoning reported during the seven days ended Wednesday, September 2, 1903, numbered fourteen. As will be seen from the subjoined table, these included an exceptionally large proportion of deaths from carbolic acid poisoning:—

Poison.	Accident.	Suicide.
Ammonia	1	—
Carbolic Acid	—	6
Chloroform	3	—
Laudanum	—	1
Oxalic Acid	—	1
Weed Killer	—	1
Not stated	—	1
Total	4	10

Ammonia.—A young woman at Gateshead accidentally took a fatal draught of ammonia in mistake for water.

Carbolic Acid.—A Glasgow insurance agent, a young woman at Hull, a Liverpool clerk, a woman at Manchester, another at Dublin, and a boy at Bermondsey, who had been reading pernicious literature, committed suicide by taking carbolic acid. In the Dublin case, the acid had been kept in a gin bottle, and the coroner suggested that greater care should have been taken.

Chloroform.—A woman at the Royal Free Hospital, London, a child at Huddersfield, and a deaf mute at the Bolton Infirmary died under chloroform.

Laudanum.—A commercial traveller at Glasgow committed suicide by taking laudanum.

Oxalic Acid.—This poison caused the death by suicide of a woman at Southsea.

Weed Killer.—A weed killer, consisting of "arsenic with washing-soda," caused the death of a man at Leamington.

Kind not Stated.—A lieutenant of the Army Service Corps a Chester committed suicide by taking poison.

IRISH PHARMACEUTICAL JOTTINGS.

An Appeal will, it is expected, be lodged against the magisterial decision given at Ballinasloe last week, when it was held that proprietary sheep-dips, being "patent medicines," were outside the Pharmacy Act.

The Chemists' Assistants' Association recently formed in Dublin is the fourth of its kind during the last twenty years. Its predecessors enjoyed a more or less brief existence, and died in the flower of their youth. They say that the new one has come to stay. *Nous verrons.*

A Statutory Notice has been issued to creditors of the late Mr. George Howell Grindley, formerly Treasurer of the Pharmaceutical Society of Ireland. Mr. Grindley carried on an extensive retail pharmacy in Westland Row, Dublin, and had amassed a considerable competence.

Opinion is Divided in the Council chamber at Mount Street as to the propriety of admitting, without examination, to membership of the Pharmaceutical Society of Ireland persons who hold the licence of the Apothecaries' Hall. Apart from the legal aspect of the case, the feeling is against such admissions, and although certain "thrifty" councillors see a not unwelcome addition to the "war chest" in respect of the fees payable by the "Hall" entrants, there are others who hold that it is not acting in the interests of those who have gone through the pharmaceutical mill to waive the rules, however expedient it may be to do so. It is one of the several ethical points upon which the Council agrees to differ, and not even the precedent established in a comparatively recent case, in which a young L.A.H. was admitted, not only as a licentiate, but as a member of the Society, can be swallowed by the dissentients as establishing the principle of two wrongs making a right.

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

Manchester Pharmaceutical Association.—This Association begins its winter session in October. In November the annual dinner will be held at the Albion Hotel, to be followed by a smoking concert.

The Next American Pharmacopœia.—The forthcoming new Pharmacopœia of the United States of America will, it is understood, be published before the end of this year, but the exact date on which it may be expected to appear is not yet known.

Swiss Pharmaceutical Society.—The fifty-ninth annual meeting of the Société Suisse de Pharmacie will take place on Wednesday, September 9, at Coire, and Thursday, September 10, at Thusis. In addition to the meetings of the Society, various social functions have been arranged. Pharmacists in Great Britain will doubtless wish their colleagues in Switzerland a pleasant and successful meeting in the beautiful district selected for the occasion.

The Recent Saccharin Prosecution.—George Enoch Skidmore, mineral water manager, who was recently convicted at Wigan on a charge of smuggling 56 lb. of saccharin and fined £336, and, in default was sentenced to six months' imprisonment, has just been informed through his solicitor, Mr. Wilson, of Wigan, that the Commissioners of His Majesty's Customs have authorised his release on payment of £100. Arrangements are being made for payment of this amount.

X-Rays and the Violin.—A writer in *Electricity* says it has been discovered that the ageing of a violin can be artificially secured by exposing the wood to X-rays. The beautiful tone which has heretofore resulted from a natural ageing of the wood for fifty or sixty years can thus be obtained in a single day. If this be true, Stradivarius violins will be no longer at a premium, except in so far as perfection of manufacture is concerned, though it is probable that, as in most other processes, the natural ageing will yield the better tone.

Suspicious Deaths of Stock in Aberdeenshire.—The Aberdeenshire police are engaged at present making inquiries into a case of suspected poisoning of stock on a farm in the Millbrex district. A cow and a pig died under suspicious circumstances, but it was not till the other day, when eighty head of poultry were found dead, that the farmer's suspicions were aroused, and he reported the matter to the authorities. Whether or not these accidents will be proved to have been caused by the careless use of some of the so-called "agricultural poisons," which, according to some few persons in Scotland, have not, owing to restrictions on their sale, full and proper scope for doing their deadly work, it is impossible at present to say.

Yorkshire College: Dyeing Department.—In the prospectus of the Department of Dyeing and Tinctorial Chemistry of the Yorkshire College, newly issued for the coming winter session, special attention is drawn to the admirable facilities existing there for the study of the chemistry of the colouring matters, and for research work upon coal-tar products. The Yorkshire College is pre-eminently suited for a specialised study in colour chemistry, both on account of its splendid equipment in this department, and for its close proximity to the great textile industries of Yorkshire and Lancashire. Professor Arthur G. Green, F.I.C., F.C.S., continues at the head of the department, and he will be assisted in his lecturing and research duties by Messrs. A. G. Perkin, F.R.S., F.I.C., A. B. Steven, B.Sc., and Percival J. Wood.

Weights and Measures in the City of London.—There was a considerable increase in the work of the Inspection of Weights and Measures Department of the City of London last year, as compared with the two preceding years. The receipts for stamping amounted to £1,435, as against £1,395 in the previous year and £1,396 in 1900. During 1902 the inspectors visited 7,201 places of business, and examined 38,800 weights, 35,208 measures, and 8,948 weighing instruments. The number of weights, measures, and weighing instruments presented to the department for verification was 306,750, and the number found correct and stamped was 284,102, the rejections amounting to 22,648. During the year 709 metric weights and measures were submitted for verification, of which 581 were found correct, and stamped, and 128 were rejected. The Chief Inspector, in his annual report, remarked that, notwithstanding the facilities given by the Act of 1897, an Act to legalise the use of metric weights and measures, that system appeared to make very slow progress.

Pharmacy in New South Wales.—The annual report of the Pharmacy Board has been submitted, states the *Lancet*, to the Legislative Assembly of New South Wales. During the year sixty applications for registration under the Pharmacy Act were granted, making the total number of pharmacists registered 840. Poison licences had been granted to sixty-two pharmacists and annual poison licences to 216 storekeepers. The Board had held a preliminary and a final examination, thirty-two candidates passing the former and eleven the latter. Reciprocity with the Pharmacy Boards of Victoria and South Australia had been successfully established and pharmacists registered in any one of the three States would be entitled to practise in the other two. A great deal of work had been done in explaining the provisions of the Poisons Act and warning the public of the danger in dealing with poisons, and the direct result was that the reported cases of poisoning in New South Wales had decreased considerably—in fact, up to 50 per cent.—under the Board's administration of the Act.

Etheromania.—The following story is published in a weekly paper:—The Paris chemists have been victimised during the past week by a peculiar class of criminal, and the police commissaries of all quarters of the town have had numerous complaints. The swindlers, who are of both sexes, and belong in many cases to ordinarily respectable classes of society, are etheromaniacs, who make a regular round of chemist shops, drop at the door and pretend to be dying, and in their day absorb sometimes as much as half a litre of ether. One of the victims, who told the story, has been M. de Toledo, the chemist just outside the Couronnes Station on the Metro., who rendered such yeoman service at the time of the catastrophe. He recognised his "moribund" visitor the other day, and prescribed a policeman instead of ether. The crowd which had flocked into the shop all but lynched M. de Toledo, and were so angry with him for his heartlessness that they might have carried out their threat of doing so had not the "dying" man taken to his heels and run. And then the crowd laughed.

Chemical Company Supports Mr. Chamberlain.—At the annual meeting of Freemans and Green, Limited, dealers in drugs, chemicals, etc., recently held at the Phœnix Mills, Birmingham, the Chairman (Mr. W. M. Freeman), in moving the adoption of the annual report, referred to the proposed changes in our national fiscal policy, which, he said, materially affected the future interests of the company. Their own position furnished a glaring example of the need for fiscal reform. They had found it impossible to do any trade with the United States on account of the prohibitive tariffs imposed there upon the agricultural products in which the company was interested; yet at the present time the English market was being flooded with similar products of American manufacture, which came in duty free. Again, the company's business in South Africa would be materially increased by a system of reciprocity, under which British products would be favoured in that market, which at present was being shared by America, with advantages in favour of the latter. The following resolution, moved by the Chairman and seconded by Mr. T. S. Prosser, was subsequently carried unanimously, and a copy was ordered to be sent to Mr. Chamberlain:—"That the shareholders of Freemans and Green, Limited, desire to congratulate Mr. Chamberlain upon his courage in bringing forward the subject of fiscal reform, and to assure him of their cordial support in that direction."

Syrup of Squills as a "Poison."—An inquest was held in Nottingham on Monday, August 24, on the body of an infant, three months old, who had died from convulsions. The child had been given a small quantity of diluted cough mixture, containing in each dose about 2 minims of syrup of squills. The mixture was supplied by Mr. R. Widdowson. On the instructions of a medical man, the child was afterwards given some diluted brandy. The jury returned a verdict in accordance with the medical evidence, namely, that death was caused by convulsions, due to an "overdose of irritant medicine, administered inadvertently." The Coroner subsequently wrote a lengthy letter to the local press, giving a full explanation of the circumstances. Without commenting on the language used by the doctor who had described squills as an irritant poison that acted specially upon the heart, the Coroner indicates very clearly that in his opinion the brandy, of which "two-pennyworth" was given, was the cause of the child's death. What can be expected, he asks, of the impure and often sadly adulterated brandies procurable at small public houses? And this is what poor patients can only get when their doctor directs them to administer brandy diluted to some extent or other. Indeed, so powerful is alcohol as a poison, that if a medical man prescribes it at all he certainly ought to insist that it is carefully dispensed in the form of rectified spirit and in very defined doses, which should not be left to an ignorant person to dilute. Nothing can be more unscientific than to leave the use of a potent drug such as brandy in the hands of ignorant people. What then could be expected from the administration under doctor's orders of two-pennyworth of common brandy in twelve hours to a sick child eleven or twelve weeks?

Royal Soap Bills.—For some time past a Strand chemist has been exhibiting in his window the original ledger showing the account of George IV. with the founder of the business for perfumes and toilet soaps. From this it appears that from May 19 to July 2, 1828, the Royal consumption of these articles ran well into £200. The variety of the goods indicated show that "the first gentleman in Europe" had a pretty taste in soaps and perfumes, and it is only fair to add that the ledger is open at the page where "settled" is put to the account. The Paris correspondent of the *Pall Mall Gazette* states that the Empress of Russia spends £2,000 a year on perfumes, pastes, soaps, and toilet waters, which she has sent to her exclusively from the French capital. Violet is Her Majesty's favourite scent, but her taste in perfumes is so catholic and general that every day she vaporises the Royal apartments with the concentrated essences of lilac, jasmine, narcissus, jonquil, tuberose, and white violets. The Empress's toilet water is perfumed with violets, which are gathered specially at Grasse between five and seven o'clock in the evening—the time when, according to Her Majesty, their perfume is the most delicate. The Queen-mother of Spain is particularly fond of the essence of a special variety of orchid which is only found in the Philippines. But since the Spanish-American war the Queen has lost her liking for this perfume, and now only employs "eau d'Espagne," specially made for her in Madrid. The Queen of Roumania, who is naturally proud of her white hair and her fresh complexion, which, in spite of her sixty years, does not betray a single wrinkle, attributes it to a marvellous toilet-water, of which "Carmen Sylva" alone knows the secret. The water, it is added, is believed to be made from flowers gathered in an unknown forest by certain women sworn to secrecy, who collect the precious leaves under the watchful eye of a cordon of sentinels charged to keep away inquisitive intruders.

Chemistry in the Science and Art Examinations.—In their report on the examinations in chemistry of the Science and Art Department of the Board of Education, the examiners remark that the papers in the "advanced" stage compare very unfavourably with those in the "elementary." Candidate after candidate named chlorine, nitric acid, chromic acid, phosphorus pentachloride, hydrogen peroxide, ozone and sodium carbonate as reducing agents, and many stated that hydrogen sulphide, when precipitating mercury or copper from a solution, was exercising a reducing action. In one of the elementary papers, a large number of candidates stated that quicklime was calcium carbonate. Judging from the frequency with which sulphuretted hydrogen is said to be obtained by burning sulphur in hydrogen, it seems as though this fallacy is still being taught. Similarly, the idea that red-hot copper decomposes steam, and that a mixture of equal volumes of nitrogen and oxygen is nitric oxide, seems hard to get rid of. The practical work in inorganic chemistry (elementary stage) was on the whole good, especially the determinations of loss of weight. For collecting and measuring gas an unsuitable form of apparatus was often used, and then failure resulted. In a third exercise nearly all recognised the chlorine which was evolved, but the descriptions of the residue were too often unsatisfactory, because the candidate would not describe what he really saw, but something which he imagined he ought to see. The evolution of chlorine from a black powder when mixed with hydrochloric acid led many to conclude that the powder was manganese dioxide, even when the substance actually in their hands was peroxide of cobalt or of nickel. In the advanced stage (practical inorganic), last year it was found that the qualitative work was superior to the quantitative. This year it seems that the order is inverted, and the qualitative work is generally inferior. Whatever may be the cause of the change, the fact remains that the careful and exact qualitative analysis performed by candidates at these examinations a few years ago has disappeared, and, so far as can be seen at present, with little compensating advantage in other directions. Extreme weakness is also manifest in a large number of the papers relating to the theory of laboratory processes.

Anti-Cutting Crusade in New South Wales.—A meeting of wholesale and retail distributors of patent and proprietary medicines was recently held in Sydney, under the auspices of the Pharmaceutical Society of New South Wales, for the purpose of electing a committee of management and an organising secretary to carry out an anti-cutting scheme. Mr. Wm. Short (President of the Pharmaceutical Society of New South Wales) presided, and there was a fair attendance, representative of the city and suburbs.—Mr. C. A. Marshall, in explaining the objects of the meeting, reminded the retailers that their interests were identical with the wholesalers on the point at issue. The cutting of prices was bad for both, and the question they had to consider was, "Could it be altered, and if so, how?" It was a matter which had engaged their attention for several months, and two or three previous attempts made on their part to alter the existing condition of affairs had proved partial failures. One cause of past failure was the attempt made to enlist the sympathies of the retail houses alone, instead of also seeking that of wholesalers as well. No undertaking could be successfully carried out without the services of an able organising secretary, who would enter upon his work with all interested parties. Their first object should be to secure members to join an association similar to that of the P.A.T.A. of Great Britain, and then endeavour to enrol the local houses. He gave a few details of the P.A.T.A. of Great Britain, where all the prices were fixed and sales refused to any cutter. He suggested that the Committee should consist of six retailers and three wholesalers, with the secretary *ex-officio*. It would be advantageous to all to fix a minimum cutting price, and so save the outrageous cutting which was going on. He concluded by moving: "That this meeting forms itself into an anti-cutting association, to be called the 'Anti-Cutting Association of New South Wales.'"—The motion was seconded by Mr. D. J. Williams and carried unanimously.—The following gentlemen were elected to represent the retail houses on the committee of management:—Messrs. D. J. Williams, C. A. Marshall, S. Meares, R. G.

Brereton, Harry Cox, and T. S. Loney.—Subsequently a meeting of representatives of the wholesale houses was held, and Messrs. A. L. Silley (Australian Drug Co.), Isaacs (Feldheim, Gotthelf, and Co.), and R. K. Allport (Sayers, Allport Proprietary, Limited) were elected members of the committee of management to act with those elected by the retail houses in the anti-cutting movement.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. T. J. Dunlop, M.P.S., has purchased the business which until recently was carried on at 184, Higher Hillgate, Stockport, by the late Mr. L. H. Verdon, under whose control the pharmacy had been for ten years. Messrs. Tomlinson and Sons, Manchester, acted as valuers.

Dr. Waldemar Koch has been elected assistant professor of physiological chemistry and pharmacology in the University of Missouri. Dr. Koch is spending the summer at Strasburg, and will spend the autumn months in England. He assumes his duties in the University of Missouri on January 1.

Mr. John Lawrenson, formerly carrying on business as a chemist and druggist in Stretford Road, Manchester, is now doing well, our Manchester correspondent writes, in agriculture in Canada. He has written to the St. Andrews Lodge of Mark Masons, of which he was the Secretary, tendering his resignation, which has been accepted.

Mr. William Arthur Savill, chemist, of Littlehampton and Bognor, was amongst a number of persons summoned at Littlehampton on Monday for the non-payment of the poor-rate. In each instance the amount of the rate had been tendered less the amount of the education rate and refused. The Bench expressed the opinion that since the question was under appeal in the West Ham case, the Overseers ought to have accepted the sums tendered and proceeded only for the lesser amounts, and they adjourned the cases for a fortnight in order to give them an opportunity of considering their position.

TRADE NOTES.

Fairchild Bros. and Foster, Snow Hill Buildings, London, E.C.—One of the latest additions to the list of preparations issued by this firm is "Pepule" Pepsin and Zymine. This product is sugar-coated, of elegant appearance, and of exact dosage, and is, we are informed, a combination which is finding favour with the medical profession, facilitating stomachic and intestinal digestion. Each product contains pepsin, 2 grs., and zymine, 3 grs., and they are supplied in bottles of 25 and 100. One grain of the pepsin will digest 3,000 grs. of egg albumen, and the "zymine" contains the three pancreatic enzymes—trypsin, diastase, and steapsin—in active form.

Thomas Christy and Co.—One of the most artistic productions in the way of show cards that has ever been brought before our notice has recently been issued by the above firm. The picture represents a lady in the act of using a "Zepto" antiseptic tartar remover, an article which is becoming very popular, and particulars of which have already appeared in the advertisement columns of this Journal. Each of these show cards is a highly artistic water-colour drawing, coloured entirely by hand, and will make an attractive addition to the decorations of a pharmacy. For particulars as to the loan of these pictures application should be made to Messrs. Christy and Co., at Old Swan Lane, Upper Thames Street, London, E.C.

Running on the Decimal System.—On Saturday of last week the employees of Messrs. A. H. Cox and Co., pill and tablet makers, took a holiday, and spent a most enjoyable day at Wright's Farm, Brighton. The occasion was the firm's annual sports. The first event took place shortly after 9.30 a.m., and the amusements continued until late in the afternoon. A feature of the races was that the distances were measured according to the metric system, a novelty which should recommend itself to those desirous of making the decimal method more familiar to Englishmen. The sports were under the patronage of Messrs. Alfred and Edward Cox and the Misses Cox. The results of the principal events were as follows:—100 metres handicap: E. Martin, 1; Creamer, 2; Breeds, 3. 60 metres veterans' race: Bradford, 1; Ridley, 2. Throwing the cricket ball: Elliot, 1; Creamer, 2. Kicking the football: Breeds, 1; Vincent, 2. Consolation race: Vincent, 1; Anderson, 2. In the tug-of-war the married men proved stronger than the single, whilst in the cricket match the "single" gentlemen scored 9 runs more than their married opponents.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London, Thursday, September 3, 1903.

To say that the market in drugs and chemicals is dull would be to repeat what has been said on many previous occasions in connection with commercial reports; moreover, it would give no comparative notion of the state of affairs which has characterised Mincing Lane during the week ended at the time of writing. Readers will be able to form a better idea of the condition of trade from the fact that except in the case of one or two items few transactions of any importance have been made, and things are wretchedly quiet. Many City men, as soon as the fine weather arrived, took advantage of the quiet spell, disappeared into the country, and will probably remain there until the rain and business come back. The troubles in Eastern Europe may also account to some extent for the general depression in trade, although curious to relate, neither Otto of Rose nor Opium has been materially affected by the foreboding prospects; in fact, there is a conspicuous lack of information from Turkey concerning these articles. There is some consolation in the fact that the Bulgarian peasants had collected the rose crop before their services were required in Macedonia; it is also gratifying that the peasant proprietors of the Macedonian poppy farms had scraped the capsules and arranged prices with the merchants before the call to arms drew them from the occupation on which they depend to pay the exorbitant interests demanded by grabbing money-lenders of Syria and European Turkey. At to-day's auctions there was perhaps a smaller attendance of druggists than on any other occasion this summer. Of the 16 catalogues, comprising new goods, 2 were withdrawn before the sales; of the remaining 14, one only was anything like heavy. With the exception of Senna and Cardamoms, of which fair quantities were catalogued, the offerings were very small. The only article which sold with anything like competition was Senna, which realised prices in advance of those obtained at the last sales. For the most part, the goods which found buyers realised normal prices, but large quantities were held by the brokers. In the general market the most interesting features concern Cascara and Golden Seal, both of which are dearer. The former has reached a price even higher than holders even anticipated. There appears to be some sort of movement in Star Anise Oil which shows symptoms of a crawling upward movement.

The Drug Sales.

The following table shows the number of packages offered and sold :—

	Offered	Sold.		Offered.	Sold.
Accroides	50	0	Gum—		
Albumen	35	0	Elemi	10	0
Aloes	15	15	Mastic	5	0
Ambergris	2	1	Honey	105	14
Annatto Seed	29	0	Insect Flowers	20	20
Areca Nuts	61	0	Ipecacuanha	33	12
Buchu Leaves	11	11	Kola Nuts	4	4
Camphor	10	0	Lime Juice	117	109
Cardamoms	797	573	Lime Oil	13	0
Cardamom Seed	23	12	Maracaibo Bark	10	0
Cassia Fistula	2	2	Menthol	2	0
Castorum	2	0	Peppermint Oil	16	10
Chiretta	5	0	Peruvian Bark	10	0
Coca Leaves	10	4	Puree	3	0
Cocculus Indicus	30	30	Quillaia Bark	3	0
Colombo Root	83	0	Rhubarb	51	7
Croton Seeds	42	24	Sarsaparilla	35	29
Cummin Seeds	20	0	Seedlac	107	81
Divi Divi	2	0	Senna	590	590
Dogwood Bark	1	0	Soy	22	0
Dragons' Blood	10	0	Squills	7	7
Eucalyptus Oil	45	0	Tonquin Beans	1	0
Galangal Root	165	0	Turmeric	—	1
Guaza	5	0	Wax	276	14
Gum Benjamin	110	8	Yellow Bark	88	0

ALOES.—Fair hard Cape realised 60s. ; soft and drossy sold at 47s.

AMBERGRIS.—A tin containing 27½oz. sold at 70s. per oz. for only medium quality.

ANNATTO SEEDS—Were held for 5d.

BUCHU LEAVES.—Rather stalky and yellowish round leaf sold at 9½d. to 10d. per lb.

CARDAMOMS—On the whole, were slow of sale. Small sizes found buyers at perhaps slightly reduced rates. There was practically no demand for the bolder grades, and good decorticated sold well at 1s. 1d. per lb.

CASSIA FISTULA.—Good quality sold at 37s. 6d. per cwt.

CROTON SEEDS.—4 bags part dark realised 22s. 6d. per cwt. ; 20 bags sold, without reserve, at 19s. 6d. ; these were very dark.

COCA LEAVES.—For fine green Ceylons 1s. 2d. per lb. was obtained.

COCCULUS INDICUS.—Very fair realised 6s. 6d. per cwt.

DRAGONS' BLOOD.—No sales were made, dull lump being held for higher limits.

GAMBOGE.—No sales were made ; Siam pipe was held for £18.

GUM ELEMI.—Fine white was held at 65s. per cwt.

GUM BENJAMIN.—A few cases Sumatra sold at £6 10s. to £6 15s., but very little interest was taken in this article.

HONEY.—Jamaica realised from 18s. 6d. to 22s. per cwt. ; the latter price was for clear dark liquid.

INSECT FLOWERS—Found buyers at 90s. to 92s.

IPECACUANHA.—6 bales Rio sold, "without reserve," at from 4s. to 4s. 2d. per lb., the former price being for slight mouldy. Mattogrosso sold at 5s., and 4s. 7d. was paid for cultivated Rio.

KOLA NUTS.—Medium to bold dull sold at 6¼d. per lb.

LIME JUICE.—109 hogsheads sold, "without reserve," at from 7½d. to 9d. per gallon.

PEPPERMINT OIL.—10 cases Japanese, dementholised, sold, with all faults, at 4s. 4d. per lb.

RHUBARB.—A few cases sold without reserve, but otherwise there was no demand for this article.

SARSAPARILLA.—Fair Jamaica realised 1s. 2d. per lb., Lima lower qualities fetching 1s.

SENNA—Was in fair supply, and sold with good competition, all grades being ½d. dearer than last sale's rates. Small spotted leaf of fair colour fetched up to 2½d. ; medium green leaf, 3¼d. ; and from 4d. to 7d. was obtained for bold green, more or less spotty.

SQUILLS.—7 bags sold, without reserve, at 2d. per lb.

WAX.—Jamaica sold at £7 10s. to £7 15s. per cwt. Zanzibar was bought in at £7.

General Markets.

The General Market in Drugs and Chemicals remains quiet. The following are a few quotations of articles of interest :—

BROMIDES.—Unaltered.

CARBOLIC ACID.—More business is doing, and a better feeling exists. Crystal, 39° to 40° C., 5½d. ; Crude, 60°, F., 1s. 7d. per gallon. Liquid (95 to 98 per cent.), of pale straw colour, 1s. 2d. per gallon.

CASCARA SAGRADA.—The stocks now are very low, and the price has advanced since last week's report to 90s., at which figure sales have been made ; there is still a little offered at this price.

CASTOR OIL.—Belgian firsts, for September-December delivery, £19 10s.

CINCHONA BARK.—The Java shipments for the month of August were 1,110,000 Dutch lbs. This was a decrease of about 700,000 Dutch lbs. on the shipments during the same month last year. The total for the first eight months of the present year is slightly over 8,000,000 Dutch lbs.

CINNAMON.—The third quarterly auctions were held on Monday. 890 bales Ceylon were catalogued, the quantity being considerably larger than that offered at last sales. Over 400 bales found buyers. First sort, good Ceylon, worked 1s. 4d. to 1s. 7d. The next auctions will take place on November 30.

CITRIC ACID—1s. 1d.

CLOVES.—At the sales on Wednesday 34 bales Zanzibar were offered, and none sold.

COCO NUT OIL.—Ceylon spot, £24 10s. ; Cochin spot, £31.

CODEINE.—Unaltered at 10s. per oz. for the pure alkaloid.

CREAM OF TARTAR—98 per cent. foreign powder, 89s.

ERGOT—Is very firm, and 1s. 4½d. c.i.f. is quoted.

GINGER.—At Wednesday's auctions about 700 packages Cochin were offered, and only 20 sold, medium and small washed rough at 32s. Bold rough cut and rather limed were bought in at 75s.

GLYCERIN.—68s. per cwt. for ½-ton lots.

HYDRASTIS ROOT.—There has been a sharp advance, and nothing can be had under 2s. 10d. per lb. on the spot. The New York market is practically cleared.

IODIDES.—No change.

MENTHOL.—21s. to 21s. 6d. is the nominal spot price.

MERCURIALS—Unchanged, as also is Quicksilver.

MORPHINE.—Unchanged at 4s. 6d. and 4s. 8d. per oz., according to quantity.

OIL OF STAR ANISE—Is dearer ; 4s. 2d. and 4s. 3d. has been paid, and a still further rise is hinted at..

OPIUM—Is very quiet, and the prices for all varieties remain unchanged. There is a conspicuous lack of information from Smyrna and Salonica.

QUININE—11¼d. to 11½d. per oz., according to quantity, holder, and position.

PEPPER, PIMENTO, AND NUTMEGS—Sold at steady rates at the spice auctions on Wednesday.

PEPPERMINT OIL—Shows signs of rising higher. H.G.H. 11s. 6d. per lb.

SENEGA—Is tending dearer; 3s. 4d. is now quoted.

SHELLAC—Is again dearer. Spot sales of TN orange have been made at 160s.

SULPHATE OF AMMONIA.—£12 8s. 9d., Beckton terms.

PATENTS AND TRADE MARKS.*

New Patent Applications.

AN IMPROVED OINTMENT (No. 16,769 of 1902).—W. K. Russell, 25, Rowland Street, Rugby. The following ingredients are boiled in an earthenware jar for twenty minutes, 1 oz. beeswax, 1 oz. sweet oil, 1 oz. white spermaceti ointment, and ½ oz. fresh liquor (the latter is the oil extracted from the internal fat of a porkling, and the addition of the said liquor constitutes the novelty of this invention). Another ingredient is then added consisting of 1 drachm of red precipitate powder, and the whole is well stirred until cooled.

IMPROVED METHOD OR PROCESS OF MAKING UP OR PACKING SOLID OR SEMI-SOLID CHEMICALS AND OTHER SUBSTANCES IN SMALL DEFINED QUANTITIES (No. 27,807 of 1902).—T. Baker, 260, Collins Street, Melbourne, Victoria. Depressions, corrugations, or cavities are formed in sheets or strips of paper, fabric, metallic foil, etc., and in each depression, corrugation, or cavity is placed a definite quantity of the substance which it is desired to make up or pack, and to the upper surface of the borders, between or around said depressions, corrugations, or cavities in which the substance is lying is cemented, or attached in some other suitable way, either a flat sheet or a sheet in which corresponding depressions, corrugations, or cavities have been formed, so that the upper and lower sheets form cells, in which the substances are enclosed. The material selected for enclosing any particular substance should not be liable to be chemically affected by the substance to be enclosed therein.

INHALING APPARATUS (No. 5,029 of 1903).—B. Langen, 19, Schusterstrasse, Mainz, Germany, and G. Müller, Elisenstrasse 73, Dresden, Saxony. Consists of a process and apparatus for generating or producing natural pine forest air, in which is employed a transparent container filled with twigs of pine or other trees suitable for the purpose, the said container being enclosed in a second transparent container, the space between the two containers being filled with a coloured fluid, such as methylene blue fluid, for absorbing the red (heat) waves of light, but allowing the passage of chemically effective ultra violet rays of light, whereby the generation of excessive heat is prevented, together with a current of air passing through the said containers and carrying with it the pine needle aroma set free by the electrolytic action of the suitable artificial light provided, in a manner similar to sunlight. An inhaling apparatus is combined therewith, wherein the air laden with the pine needle aroma may be impregnated or combined with ozone and one or more suitable and curative drugs, if desired, and then finally inhaled by the patient.

Note.—Opposition to the grant of any of the above-mentioned patents must be filed at the Patent Office, on or before October 6, 1903.

New Trade Mark Applications.

"**CIMALAC,**" for chemical substances used in manufactures, photography, etc., by Pinchin, Johnson and Co., Limited, 23, Billiter Street, E.C. 256,187.

"**TIPPERO PIGGO**" label ("Pig" disclaimed), for chemical substances used for veterinary purposes. 253,149.

DEVICE of a woman resting one hand on a shield and the other on a pedestal, for chemical substances used for agricultural, veterinary, etc., purposes, by the Empire Manufacturing Co., 1, Collett Road, St. James's Road, Bermondsey, S.E. 255,857.

DEVICE of a cathedral or church, etc., for a medicine for internal use, by A. H. Cooper, 7, Bridge Street, Bath. 255,557.

"**BRAMARSANDT,**" for chemical substances prepared for use in medicine and pharmacy, by Mars, Brandt, and Co., Holland Lodge, Eltham Road, Lee, S.E. 252,261.

"**DIGESTULES**" ("Digest" disclaimed) and "**HEPATULES**" ("Hepat" disclaimed), for medicinal preparations for human use, by J. Tye and Son, 108, Packington Street, N. 255,684 and 255,686.

DEVICE of a raven, for photographic papers, by A. E. Dean and Co., 20, St. Albans Road, Harlesden, N.W. 255,875.

Note.—Opposition to the registration of any of the above-mentioned marks must be filed at the Patent Office, on or before October 2, 1903.

COMPANY INTELLIGENCE.

Antiseptic Wax Polishers, Limited.—Registered in Dublin, August 24, with a capital of £100, in £1 shares, to carry on the business of chemists, druggists, etc. Registered office, Star Life Buildings, College Green, Dublin.

Henry Egan and Sons, Ltd.—Registered in Dublin on August 25. Capital, £2,000 in £1 shares. Objects: To carry on the business of general grocers, dealers in provisions, drugs, etc. Registered office, Rathangan, County Kildare.

Kennett's, Limited.—Registered August 25. Capital, £5,000 in £1 shares. Object, to carry on the business of chemists, druggists, dentists, opticians, herbalists, dealers in surgical, optical, photographic, and scientific appliances and material, etc. Registered office: 349, Lee High Road, Lee, Kent.

PUBLICATIONS RECEIVED.

Holidays in Denmark and Scandinavia. Illustrated. Pp. 30. London: Great Eastern Railway, 30, Fleet Street, E.C. 1903. From the Publishers.

Holidays in Northern Germany, including the Harz Mountains. Illustrated. Pp. 14. London: Great Eastern Railway, 30, Fleet Street, E.C. 1903. From the Publishers.

Zur Kenntnis der Opiumbasen. Von O. Hesse. Separat-Abdruck aus dem *Journal für Praktische Chemie*. Neue Folge. Band 68, 1903. Pp. 190-207. Leipzig: Johann Ambrosius Barth. From the Publishers.

Pamphlets on "A New Species of Ardisia, from New South Wales"; "A New Species of Symplocos from New South Wales"; "Eucalyptus Melanophloia, F. and M., and its Cognate Species"; "Contributions to a Knowledge of the Flora of Australia." From the Proceedings of the Linnean Society of New South Wales. 1902. By R. T. Baker, F.L.S. Illustrated. From the Author.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and Patent Notes for Inventors' free on application.

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

The Pharmacology of the Suprarenal Gland.

Being interested in the above subject, I read Dr. McWalter's paper in your issue of the 22nd inst. with some attention, because the learned doctor has generally new light to throw on any topic he takes up. I find, however, that on this occasion he shines largely by the aid of a borrowed light, as the following parallel excerpts show :—

Excerpts from a Trade Pamphlet on this Subject :—	Excerpts from Dr. McWalter's Paper :—
"In 1856 Brown-Sequard demonstrated that these glands (1) are essential to life ; (2) that they modify or destroy a substance which otherwise transforms itself into pigment ; (3) that when the organs are destroyed or removed this substance collects in the blood ; (4) that removal is rapidly fatal, and injection of the blood of an animal thus treated leads to symptoms like those of removal."	" Brown-Sequard . . . demonstrated (1) that they are essential to life ; (2) that they modify or destroy a substance which otherwise transforms itself into a pigment and stains the skin ; (3) that when the organs are destroyed or removed this substance collects in the blood ; and (4) that removal is rapidly fatal, and an injection of the blood of an animal thus treated into a healthy animal leads to symptoms like those of removal."
"In 1897 Velich found that blanching was produced when a solution or extract of the gland was dropped in the eye, or when placed on granulating surfaces."	" . . . until in 1897, when Velich found that blanching was produced when a solution or extract of the gland was dropped in the eye, or when placed on granulating surfaces."
"Bates concluded that as a pure astringent in all inflammations, as a hæmostatic and as a tonic to muscle fibres, no therapeutic agent had been employed which can compare with the extract of the suprarenal gland."	"Bates . . . . concluded that as a pure astringent in all inflammations, as a hæmostatic, and as a tonic to muscular fibres, no therapeutic agent has yet been employed which can compare with extract of the suprarenal gland."
"Lawandowski found that when an aqueous solution was injected into the veins of cats there resulted dilation of the pupils, orbital protrusion and raising of the eyelids, symptoms indicative of irritation of the sympathetic ganglia of the neck."	"It was found that when an aqueous solution was injected into the veins of cats there resulted dilatation of the pupils, orbital protrusion and elevation of the eyelids—symptoms which indicate irritation of the ganglion of the sympathetic nerve in the neck."
"Cyon noticed under the same conditions an enormous rise in blood pressure, and that the extract was a powerful stimulant to the sympathetic nervous system of the heart and the vessels."	"Cyon noticed under the same conditions an enormous rise of blood pressure, proving that the extract was a powerful stimulant to the sympathetic nervous system of the heart and the blood vessels."
"Oliver and Schafer showed that the rise of blood pressure occurs after the cord has been sectioned high up, and the medulla has been destroyed, thus proving that it is the result of the direct action of the extract upon the muscular fibres of the heart, blood vessels, or both."	"Finally, Oliver and Schafer showed that the rise of blood pressure occurs after the cord has been sectioned high up, and the medulla has been destroyed, thus proving that it is the direct action of the extract on the muscular fibres of the heart and the blood vessels."
Dr. A. G. Auld is quoted as follows :—"I submitted in a short report that this (active principle) was not pyrocatechin, as Muhlman and others had asserted, but that the reactions I obtained pointed to its alkaloid nature. Quite recently Dr. John J. Abel, of Johns Hopkins, in an elaborate paper, arrives at the same conclusion. He has separated the substance in the form of a benzoate. The base, or in other words, the active principle of the suprarenal, he has further isolated in the form of a light grey powder, whose percentage composition is expressed by the formula $C_{17}H_{15}NO_4$."	Dr. McWalter proceeds in the following terms :—"Dr. Auld concludes that pyrocatechin is not the active principle, as Stockman and others had asserted, and that reactions point to its alkaloidal nature. More recently Dr. John J. Abel, of the Johns Hopkins University, arrived at the same conclusion, and separated the substance in the form of a benzoate. This basic or active principle of the suprarenal he has further isolated in the form of a bright grey powder, whose percentage composition is expressed by the formula $C_{17}H_{15}NO_4$."

It is not needful for me to go further, or to point out the very obvious "moral" conveyed by these parallel quotations Dr. McWalter has not even shown the courtesy of that limited form of acknowledgment indicated by the use of inverted commas, much less made any direct acknowledgment while the fact that the British Pharmaceutical Conference has been made the "dumping-ground" for a string of quotations made at second-hand is also worthy of notice and reprobation.

Glasgow, August 28, 1903. Geo. M. Winter.

Examinations and the Advancement of Pharmacy.

I have carefully perused the letters appearing in your last issue from experienced teachers in our schools of pharmacy dealing with the Major Examination. The subject is one demanding an early settlement. The generally expressed opinion is that the Minor Examination adequately fulfils the requirements of those who are contented to regard and follow their calling as a trade, while for those who wish to advance themselves and their vocation to a higher level, the present Major Examination is unanimously admitted to be of no avail, inasmuch as its holders are unable to derive any special recognition or extended qualification. With a higher examination as suggested by Mr. Cowley, a qualification for work of a distinctly professional character might be attainable by those who wished it, and when adopting such a change in the examination, I would also strongly advocate a change in its title. While commenting upon this subject, I cannot refrain from remarking that something apart, yet linked to a qualifying examination, is sorely needed and essential if our social status is to be advanced. What might result in much ultimate good, I am inclined to think, would be "an association for the advancement of pharmacy," upon which I venture to offer a few proposals to embrace its rules, with reasons for so doing :—

Proposals.	Reasons.
(1) Admission upon similar conditions as required for admission to the Chemical Society.	(1) That only those desirous of furthering the real object of the Association be admitted.
(2) To encourage the art and practice of pharmacy, zealously guarding the strength, quality, and purity of all articles supplied to the public, either through prescription or otherwise.	(2) Members by their training and qualification should be held capable of estimating the quality of their drugs and preparations. A conviction under the F. and D. Acts cancelling membership.
(3) To restrict advertising, if not completely, permitting reference only to be made to the nature and use of the article and price.	(3) Advertising is non-professional, for the most part unnecessary, and usually lowering to those who employ its methods in the eyes of the community.
(4) To discourage the practice of counter-prescribing.	(4) The more we strive to abandon this practice, the more respect and friendship we shall gain from the medical profession, who, on their part, will be more inclined to give up dispensing.
(5) Not to actively take part in extending the sale of advertised nostrums.	(5) Such business results to the disadvantage of chemists, allowing themselves to become poorly paid agents instead of supplying products of their own introduction, a much more commendable, respectable, and profitable procedure.
(6) No member shall enter the employ of an unqualified company, without forfeiture of membership, and shall not be eligible for re-election. Persons who have served in the above capacity, and not previously admitted members, shall not be eligible for a period of seven years after such engagement has terminated.	(6) Such conduct is retrograde to pharmacy and the real interests of its followers.
(7) Loyalty to the Pharmaceutical Society.	(7) This should be a sister association to the society, with a mutual board of interest; operating, the one officially and the other unofficially.

Would not such an association help at least to lift some of us out of the mire ?

Torquay, August 30, 1903. Ernest Quant.

The Major Examination and Post-Graduate Courses of Instruction.

May I express my satisfaction at the proposal of the Educational Committee of the Board of Examiners to examine candidates for the diploma of Pharmaceutical Chemist in two subjects only, one of which is to be chemistry or materia medica. This reduction of the number of subjects will, in my opinion, induce men whose time is limited, and yet whose ambition is high, to obtain what is undoubtedly a qualification of much value to such as have done good work to obtain it. Many writers in the pharmaceutical press—some of them, I regret to say, teachers of experience—have gone out of their way to discount the value of the Major Examination. Others have even gone so far as to declare that they prefer a Minor to a Major man, the reason given being that the latter suffered somewhat from "swelled head," and did not care to do the spade work which the Minor man would willingly undertake. So long as the chemist has his ambition bounded by the sale of patent and proprietary medicines, and exhibits in his window a mannikin calculated to draw the multitude to buy the goods of some other man (to the excellent business capacity of whom the exhibitor is a dupe), this will be so. If, however, the pharmaceutical candidate will remember that he has entered a calling the chief *raison d'être* of which is the dispensing of prescriptions, and will conduct the practice of pharmacy with all the skill he has, then, although the process may be slow, he will, sooner or later, find that he has a sufficient living in his hands. It is the man who has done the reading necessary for the Major Examination who will succeed best in this line, as the medical man is not slow to find out the "good chemist." It is to this man he comes when in difficulty as to a prescription, and with the exercise of some tact the pharmacist with knowledge and some business capacity will soon build up a good dispensing connection. The confidence of the medical man will be followed by that of his patients, and the public will soon find out where they are best served. Recent action of the General Medical Council has shown the observant pharmacist that this body is not desirous of encouraging dispensing among medical men. It behoves the pharmacist, therefore, to gird his loins, and show the General Medical Council that he, and he alone, is the man to take this part of the work from the hands of the doctor. Until the relations of medicine and pharmacy, both most necessary callings, are more cordial than at present, and the pharmacist remembers that he has a strictly professional duty (which is *not* prescribing) to perform for the public, I fear that he will never reach the position of respect which he holds on the Continent. There he is recognised as a man of culture and attainments, chiefly by reason of his excellent training and his confining himself to his own calling, the sale and dispensing of medicaments. Until we reach this high-water mark, I fear that any attempt at giving post-graduate courses will be attended with but a moderate degree of success. The classes in bacteriology in University College, Liverpool, which through the enterprise of Professor Boyce have been notified in the pharmaceutical press for some years back, have been attended by some of the local pharmacists. The University of Liverpool is now elaborating a scheme of post-graduate courses to commence in October next, and will then be teaching to those who desire to take out the courses a large number of subjects, as bio-chemistry and toxicology, urine and water analysis, pharmacopedics and Röntgen-ray work, all suited to the requirements of pharmacists. Should these classes be attended as well as they deserve to be, there is little doubt but that the scheme will be further extended, and the great facilities for the earnest worker to acquire instruction and training, which have always been a feature here, will be shared by pharmacists.

University of Liverpool, September 1, 1903. Prosper H. Marsden.

The idea of post-graduate lectures is very good; but difficulties arise whenever one asks what will be the subjects of these courses and whom will they be for. When a student passes the Minor Examination, very often he thinks of a post-graduate course. The Major—let teachers say what they will—he usually regards as not worth the trouble of passing; but a course of commercial analysis might be useful. The ordinary result is that he does nothing. Later on, when in business on his own account, his thoughts revert to post-graduate courses in connection with his various side-lines, and here it is that such courses have the greatest chance of being run successfully. Some years ago a course of lectures, followed by practical work, on urine analysis was given at this college. Whether it was because the lectures were scheduled to begin at 8 p.m., instead of 9.30 p.m., or not I do not know; but the course was not well attended, and has not been given since. Still, though that course was not a success, I think another course on such a subject as "Visual Optics" would be successful, and I am prepared to support such a scheme. A course of lectures on this subject may be said by some to be outwith the Society's field of operations, encroaching, in fact, upon the field of the British Optical Association and the Worshipful Company of Spectacle-Makers. I admit at once that it is so; but I submit that as many members of the Pharmaceutical Society are also members of one or other of the two societies mentioned, and a great many more are engaged in the optical business, the Pharmaceutical Society of Great Britain should interest itself in both of these bodies, and arrange especially with the Company of Spectacle-Makers that the Minor or Major qualification should be accepted for their examination in algebra and trigonometry. It is interesting to note that Mr. Tocher in his B.Sc. Pharm. scheme includes visual optics, or practical optics, as he puts it. In conclusion, I do not think that any course of post-graduate lectures under the auspices of the Pharmaceutical Society would be a financial success. The cry for these lectures may be satisfied by a slight alteration in both the Minor and Major syllabuses, by making the arrangement I have suggested, then leaving those interested to work out their own salvation.

Glasgow, September 1, 1903. Thos. S. Barrie.

The Young Male Pharmacist.

Mr. Wood, in his interesting article on "The Work of the Young Pharmacist," in last week's issue, does me, no doubt unintentionally, an injustice, inasmuch as he asserts that I "represented the typical young man as a very undesirable sort of person." If Mr. Wood will be good enough to refer to the article he mentions he will find that my strictures were applied to "a typical young man" of a section of the young men of pharmacy. To make those applicable to all the young men of pharmacy would be grossly unfair and untrue.

August 31, 1903. Leonard Grange.

The Dispensing Difficulty.

I have recently taken an opportunity of asking, in a casual sort of way, whenever they happened to call in my shop, nearly every doctor in the town where I am in business their views as to the practicability of an arrangement being arrived at between themselves and us chemists. When the idea of such an understanding was first mooted in the Journal, on a more definite basis, a short time back, I flouted the suggestion at once, as did several other chemists in this district who had been reading about it. But I must now say, after having talked it over with the doctors, the idea seems by no means impracticable; in fact, the chemists have now almost definitely decided to ask the medical men to receive a deputation to talk the matter over. From what I can see, the doctors will not only accede to this, but will welcome any workable proposal. These few particulars may be of interest to others of your readers in business in small towns who probably think as I did a short time back, namely, that it was impossible to come to an understanding with doctors with regard to dispensing. Of course, I do not for a moment suppose it will work everywhere, but no harm can be done by talking it over.

September 3, 1903. J. W. (220/4).

Specimens Wanted.

Would you kindly intimate through the columns of the *Pharmaceutical Journal* that I should be very grateful for any specimens of the *Agaricus muscarius* (*Amanita muscaria*) your readers will send me, and that I will refund the postage and bear any other expenses entailed in the collecting, if these are specified? C. R. Marshall.

University College, Dundee, September 1, 1903.

Mr. Pickering's Guild of Assistants.

One cannot but admire Mr. Pickering's pertinacity, but he will never get qualified assistants to pledge themselves against the drug companies. The only way to keep men from going over to the enemy is for chemists to universally adopt the outdoor system. Some of the leading dispensing firms have already done so. It would be interesting and serve as a guide to other chemists if they would state whether or not the new method is far preferable to the old, both for assistant and proprietor.

London, August 29, 1903. "Lex" (219/23).

BANKRUPTCY INTELLIGENCE.

Re John Ernest Edington.

On Thursday, August 27, 1903, at Liverpool Bankruptcy Court, the public examination was held of John Ernest Edington. The bankrupt was an unqualified chemist's manager who had held various situations, and was now in lodgings in Liverpool. He came up for public examination with a statement of affairs showing liabilities of £74 and assets nil. Mr. Williams (Deputy Official Receiver) examined the bankrupt, who said that about nine years ago he and his brother took over the business of their father, a chemist at St. Helen's, who had got into financial difficulties. They carried it on for about twelve months, but it was unremunerative, and the bankrupt went to Birkenhead, where he opened a drug store in Watson Street, which he carried on for about twelve months. He held no certificate, and was prosecuted by the Pharmaceutical Society, and had to pay penalties amounting to about £50. He then sold the business and went to the West Coast of Africa, where he held two situations, but had to return on the ground of health; and he had afterwards acted as chemist's manager in various towns. He admitted having been in money difficulties for some years past and having had recourse to moneylenders. Some years ago he had made his living by betting, but had done nothing of this kind of late. He was now in a situation, but having a family and a sick wife, and his own health being indifferent, he could not see his way to set aside any part of his income for the benefit of the creditors.—The public examination was adjourned to September 16.

Sixty Years Ago.

From the PHARMACEUTICAL JOURNAL, Sept. 1, 1843

COMPETITION IN THE DRUG TRADE.

We have already stated, on the authority of Adam Smith, that the price of a thing, in most cases, consists of three distinct elements—wages, labour, and rent; and that "the skill and dexterity required by some species of labour give an additional value to its produce, which is no more than a reasonable compensation for the time and labour which must be spent in acquiring them." Consequently, the retail druggist, in calculating the cost of his stock, and the profit to which he is entitled, should take into consideration the rent and other necessary expenses of his establishment, the skill and experience which he has acquired by constant application, and the labour of selecting and preparing his commodities for the use of the consumer. He is entitled to a larger share of profit, in the sale of simple drugs, than the grocer, oilman, or chandler could command, in direct proportion to his superior education and practical knowledge of the nature and properties of the substances which it is his peculiar province to prepare and sell, but which they occasionally offer to their customers as an extraneous branch of their business. The apothecary is entitled to a larger profit than the chemist, because his charge for medicines includes remuneration for professional attendance; and the fee which the physician receives, for advice only, is greater than that which is awarded to the apothecary for both advice and medicines, because the physician is obliged to undergo a more expensive course of education, and to pass a more severe examination, and is consequently supposed to be more highly qualified, and entitled to greater confidence. . . . The enormous profit which is realised by the sale of quack medicines may be attributed to the value which the public put upon skill and knowledge (whether real or imaginary); since the mystery which is kept up, and the marvellous cures enumerated on the printed bills, induce a belief on the part of the uninitiated that the promulgators of these wonderful nostrums are men of superior intellect and sagacity—the sum and substance of which is condensed into a small packet of infallible medicine. Hence, a patient will readily pay at the rate of almost a penny a grain for true James's powder, the original cost of which is probably about a penny an ounce—the faith which he has in the remedy, this desire to obtain relief, overcoming every other consideration. . . . It is evident that the chemist and druggist cannot expect to enjoy a fair and adequate remuneration for his labour, unless he possess the confidence of the public, both as to his integrity and competency. The converse is equally true, that if he possess these qualifications, he ought to enjoy the remuneration, and must of necessity enjoy it, unless the system which he pursues be defective. From the facts with which we are conversant, and numerous statements which we have received from all quarters, both in the metropolis and in other parts of the country, we have no hesitation in saying that a majority of our brethren are not adequately paid for their labour—that the prices at which drugs are sold, whether in the simple or compounded state, are, in many cases, such as to preclude the possibility of supplying those of the first quality—and that the result of this excessive competition is alike ruinous to the trade and injurious to the public. In country towns, and, indeed, in most places excepting London, the evil appears to arise, in a great degree, from the invasions of grocers, oilmen, and other unqualified persons with whom the druggist ought not to be placed in competition.

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Books for the Minor (W. J. B.—94/14).—Surely you cannot have read last week's Journal. See page 336.

Dental Mechanics (W. A. D.—94/23).—Part 2 of Rose's 'Dental Mechanics' (Segg, 3s.) will doubtless meet your requirements.

Cooling Powder (H. B.—94/29).—The wording on the envelope does not render the powder liable, since you do not recommend it for any ailment.

Nickel Ammon. Sulph. (A. W. V.—94/26).—It is chiefly used for nickel-plating, and can be purchased at 6d. per pound or less, according to quantity.

Dentists Act (W. A. D.—94/22).—There is nothing in the Dentists Act to prohibit unqualified persons from extracting teeth or administering anæsthetics.

Velvet Tablets (E. H. T.—94/18).—No. These and similar toilet preparations are not liable unless recommended for the prevention, cure, or relief of ailments or disorders.

Tincture Extractives (J. B. S.—94/28).—You probably refer to Mr. J. C. Umney's paper on "Standards for Medicines," published in the *P.J.* of November 15 last. That paper includes the information you require.

Collodio Chloride Paper (F. A. H.—94/12).—The firm supplying chemicals and using trade-mark you describe is Elektro und Photochemische Industrie, 13, Alexandrinenstr, Berlin, and 5, Farringdon Avenue, London, E.C.

Cryogenine (E. W.—94/30).—This name, sometimes spelt Kryogenin, is applied to metabenzaminocarbazide (see *P.J.*, Feb. 7, 1903, p. 162). You could probably obtain it from W. Martindale, 10, New Cavendish Street, London, W.

United States (C. B.—94/17).—You are not likely to obtain a situation in the United States, unless you are on the spot; but you might consult the advertisement columns of the American journals of pharmacy. The writer of the article has recently left England.

Patented Medicine (W. W.—94/31).—There does not appear to be any difficulty in the matter, since the French preparation is purchased through the proper channels. No patentee is likely to object because the article in which he is interested is used in the preparation of something else.

Competition (S. S.—94/35).—The question of offering prizes has been considered, but it is thought that sufficient interest will attach to the competition without the help of such accessories. There is, however, nothing to prevent suitable recognition being accorded for good work, if circumstances point to the desirability of so doing.

Wet-Plate Developer (F. N.—94/19).—(1) Ferrous sulphate, 300 grains; glacial acetic acid, 200 minims; formic acid (sp. gr., 1·060), 100 minims; methylated spirit, 240 minims; distilled water, 10 fl. oz. (2) Ferrous sulphate, 200 grains; glacial acetic acid, 180 minims; lump sugar, 100 grains; methylated spirit, 240 minims; distilled water, 10 fl. oz. Shorter exposure is required with No. 1 than with No. 2.

Meat and Malt Wines (J. H. F.—94/15).—(1) Extract of meat, 4 oz.; extract of malt, 6 oz.; Tarragona or Malaga wine, 4 pints. Rub the extracts smooth with a little of the wine, then add the rest of the wine, set aside for seven days, decant and filter. (2) After rubbing the extracts smooth, as in the former case, add quinine sulphate, 80 grains, and citric acid, 40 grains, mixed with a small quantity of the wine. Then add the rest of the wine and proceed as before.

Sale of Powders (P. S.—94/21).—It is not proposed by the Inland Revenue Authorities to interfere with the sale of single powders taken from duly stamped boxes or packets, and we are informed that a retailer is permitted to sell his own powders in this way. The powder or powders must not be enclosed in a package fastened with gum, wax, or string before being handed to the purchaser, and the onus of proving that duty has been paid upon any particular powder will rest with the seller.

Information Wanted.

Higgin's Mountant (L. E. T.—94/25).—What is the formula for this preparation?

Ol. Butyl (T. F. T.—94/20).—What is this? It was ordered in a Scotch prescription.

Matting (E. A. T.—94/13).—Where can a cheap kind of matting or fibre work, as used by hop growers to keep the wind from the hops, be obtained?

BIRTH.

Carruthers.—On August 29, at 31, St. John's Street, Bedford, the wife of Ernest Murray Carruthers, Chemist and Druggist, of a daughter.

DEATHS.

Fuller.—On August 30, Thomas Gilbert Fuller, Chemist and Druggist, Finedon. Aged 68.

Powell.—On August 17, John Powell, Chemist and Druggist, Reading. Aged 81. Mr. Powell was a native of Bristol, and his early life was spent at the Royal Bristol Infirmary. He afterwards lived at Newbury, occupying the position of dispenser to the Newbury Dispensary, and eventually settled in Reading in business as chemist and druggist.

Troke.—On August 28, Charles Troke, Chemist and Druggist, Penge. Aged 77. Mr. Troke, who had been an annuitant on the Benevolent Fund since 1899, was greatly respected, and his death will be regretted by many members of the trade. He commenced his business life at Exeter, near which city he was born. Subsequently he came to London, and was for some years in the employ of Messrs. Goddard and Co., a firm long since extinct. In 1864 he joined the late Mr. John Wild Gabriel, and established the firm of Gabriel and Troke, at White Street, Moorfields, the business premises being afterwards removed to 82, City Road. On Mr. Gabriel's retirement in 1885, he entered into partnership with Mr. George Walker, of Coventry, and traded as Walker, Troke and Co., the business being later transferred to 2, Bath Street. Mr. Troke for many years travelled, in the interests of the firm, over a great part of England, and made many friends by his kindly, genial manner and courteous behaviour. He held the position of Local Secretary to the Pharmaceutical Society for many years.

Verdon.—On August 30, Henry Verdon, Chemist and Druggist, Knighton. Aged 65.

Walkley.—On August 16, James Byron Walkley, Chemist and Druggist, Bollington. Aged 47.

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Adam, Brooks, Brown, Browne, Carruthers, Cope, Dechan, Dotchin, Duncan, Dunlop, Fisher, Gill, Jackson, Judge, Lees, Lester, Lothian, Lucas, Marshall, Morris, Murray, Newby, Prosser, Simpson, Southall, Stephens, Thomas, Thomson, Thorpe, Tilley, Todd, Turner, Varley, Weary, Williamson, Winter.

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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the **SECRETARY**, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, September 10, 1903.

An Amendment of the B.P. Process for the manufacture of Liquid Extract of Liquorice is suggested by a correspondent, who also has some interesting things to say about the standardisation of galenicals.

Competition in the Drug Trade was a sore point with the chemists of sixty years ago, and the *P.J.* editorial comments on this time-honoured topic at that epoch are as pertinent now as then.

The Drug Habit again forms the basis of articles in the lay press. Several recent appearances of chronic drug takers in the police courts have given rise to this periodical patter concerning the mysteries of cocaine.

Formulæ to be Included in the Pharmaceutical Society's Compendium of Medicines should be sent to the Editor of the Journal or the Secretary of the Society as early as possible. The 1st of January is getting nearer every day.

"In My Opinion," said the Manchester Coroner to the maker of a secret herbal remedy guaranteed to cure a comprehensive list of maladies, "you are earning a dishonest living. . . . . I do not hesitate to say that this (the concoction in question) is a common swindle."

Science, Said Sir Norman Lockyer, in his Presidential address to the members of the British Association, does not receive adequate recognition or support from the State. Sir Norman suggests a Government grant of twenty-four millions sterling towards the building and maintenance of scientific institutions.

A Coroner has Introduced the Pharmacy Act to the notice of a grocer's assistant at Mendlesham. The young man had sold a packet of Battle's vermin-killer to a young woman, and at the inquest which ensued it transpired that the vendor was accustomed to sell this article to whomsoever desired it, without taking any kind of precaution.

Students Preparing for the Competition, details of which were published in last week's issue, will find in this number an article on vegetable materia medica, dealing with the collection, drying, transportation, and the sale of drugs. This is the second of a series of instructive papers which every student of pharmacy should read, mark, learn, and inwardly digest.

Vol. 71. No. 3386. (4th Series, Vol. 17. No. 1733.)

Concessions are Demanded by the grocers of Preston, who are urging the Secretary of the Grocers' Federation to obtain exemptions from the Inland Revenue authorities. It was stated at a recent meeting held at Preston that the Federation ought to procure concessions for grocers, with regard to the stamping of medicines, similar to those made in favour of chemists, but the speakers do not appear to have been very familiar with the subject under discussion.

Pilula Ferri, B.P., has formed the subject of exhaustive investigation in the laboratories of Messrs. John Bell and Co., manufacturing chemists. It has been found that liquid glucose or honey retards the oxidation of ferrous carbonate better than the mixture of glycerin and syrup ordered in the B.P. process. Not only does the glucose retard oxidation, but it also exercises a reducing action on any ferric salt that may be formed in the process, so that pills which when first examined were found to contain a trace of iron in the ferric state, were subsequently proved to contain no iron except in the ferrous condition.

Little Business has been Transacted in the Drug and Chemical Market this week. The price of Quicksilver has again been reduced by the importers, and the Compounds of Mercury are again lower. Makers of Quinine have added 1d. per oz. to the price, and rates in the second-hand market also rule higher. Cascara Sagrada is quiet and no further rise is reported. Fuller particulars will be found in the market article.

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SCIENCE AND THE STATE.

Sir Norman Lockyer's presidential address to the British Association at Southport, the substance of which appears in this issue of the Journal (see page 404), is certainly not of the pallid or colourless kind. Unflinching criticisms of the Government, broad hints to His Majesty the King, and a bold demand for an expenditure by the State of £24,000,000 on universities, constitute some of the more noteworthy features of a very remarkable oration. The keynote of the address is sounded by the phrase "national brain-power." Sir Norman Lockyer has drawn a striking parallel between the measures successfully adopted more than twenty years ago to ensure a position of supremacy for the "sea power" of Great Britain, and the measures which should now be taken to retrieve, as far as possible, the fallen fortunes of the country's brain-power. The influence of scientific progress and education on apparently unconnected problems of ethnology is emphasised with no little vigour, though not, perhaps, in a manner which will carry conviction to all. One important consideration, however, which must influence men of all sorts of political opinion is that a relative decline in national wealth derived from industries necessarily follows a relative neglect of scientific education. Another question is raised by the fact that the accepted methods of educating the future statesmen of the country, and the civil servants who, more than any other class, shape the policy of the nation, do not involve the acquirement of the scientific spirit or instruction in the utilisation of the forces of nature. It is well known, for example, that it is almost impossible for a graduate in science to obtain a position in the first division of the Home

Civil Service. Nearly all these positions are obtained by those who have devoted themselves at school and university to the study of nothing more modern than Greek and Roman literature.

It is seldom realised how much modern life owes to the "dreamers" of earlier days. BAGEHOT, one of the most thoughtful writers on the application of scientific principles to political society, has pointed out that "if idle star-gazers had not watched long and carefully the motions of the heavenly bodies, our modern astronomy would have been impossible, and without our astronomy 'our ships, our colonies, our seamen,' all which makes modern life modern life could not have existed." And the question arises, Is enough being done now to provide by scientific education and research for the developments of the future, and if not, what other steps can be taken? One answer, perhaps, is to be found in Sir NORMAN LOCKYER's demand for more men of a scientific frame of mind in public life. Whether or not the scientific frame of mind is necessarily preferable, on abstract principles, to the classical, need not here be touched on. It may, however, be remarked with some point at the present time that the man of energy, tact and business ability may have quite as much originality and quite as much inclination for experiment as are desirable, without ever studying chemistry at all. But there is urgent need, as Sir NORMAN LOCKYER's address shows clearly enough, for legislators who are fitted by their training to understand the relationship between science and commerce, and the application to industry of scientific principles or technical knowledge. Traders in crude and manufactured drugs have an important word to say on the question of changes in the fiscal system of the country; while the patience of those who use alcohol for manufacturing purposes has not, even yet, been exhausted by the short-sighted and disheartening series of refusals to remove the duty. Apart from the standing necessity for a member of Parliament who can further the cause of pharmacy, there is greater scope than ever in the Council of the nation for the energies of men with a knowledge of some branch or other of applied chemistry or physics. It is to be hoped that at the next General Election the void may be partially filled by the return of at least one representative of the calling of pharmacy.

SECONDARY EDUCATION AND THE NATIONAL PHYSIQUE.

IF a multitude of counsellors necessarily implies wisdom, those who are responsible for the direction of education in Great Britain must, indeed, be numbered among the wise. Reports on, and changes in, the systems of elementary, secondary, and technical instruction follow one another in more or less rapid succession, but the problems which agitate the professional educationalist are not rendered easier of solution by the widely differing circumstances existing in different parts of the country. Scotland, for instance, has her own peculiar difficulties to contend with. Those whose acquaintance with methods of education North of the Tweed is derived solely from reading novels of the "Kailyard" character, or from hearing of the somewhat eccentric generosity of Mr. ANDREW CARNEGIE, are probably unaware of the serious difficulties against which secondary education in Scotland has to contend. Sir HENRY CRAIK, in his report on that subject for the year 1903, remarks that for some time past there has been growing dissatisfaction in Scotland regarding the defective education of youths entering upon a mercantile career. That dissatisfaction, he thinks, is a thoroughly healthy sign. It means that commercial men are more and more realising the supreme importance of a sound mental training. "The educational machinery of the country can never have a fair chance until merchants in a body set their faces against the practice of putting boys into business at thirteen or fourteen, and until, in their selection of apprentices, they give preference and reasonable encouragement to those who can produce evidence of having profited by their school training."

Comparisons—possessing the quality usually ascribed to them—have been drawn at times between the results achieved by secondary schools in Scotland and Germany respectively. Such comparisons are, however, altogether unfair, inasmuch as they ignore the difference in the conditions which prevail. So long as the Scottish lad continues to leave school two or three years earlier than his German contemporary, so long must the responsibility rest, not upon teachers, but upon parents. The premature withdrawal of pupils from school is not, however, in Sir HENRY CRAIK's opinion, the most serious feature revealed by the reports of the various inspectors. There is a steady growth of over-pressure in the upper classes of many of the secondary schools. Inquiries made in different parts of the country show that, under existing circumstances, it is no uncommon thing for boys, and even for girls, to spend five or six hours nightly on home lessons. It must be obvious that the nervous strain entailed is excessive, and that it cannot fail to react unfavourably on the intellectual, no less than on the physical, development of at least a certain proportion of the pupils. The ultimate cause lies in the effort to attain a very high degree of efficiency in too wide a range of subjects. So long as the standard in each remained comparatively low, no evil effects were perceptible. Now that it has risen considerably, the adoption of some principle of selection has become imperative, and the tension can only be relieved by the introduction of greater elasticity into the curricula of the most advanced classes.

The *mens sana* cannot flourish apart from the *corpus sanum*, and it is to be hoped that the Committee just appointed by the DUKE OF DEVONSHIRE to inquire into the deterioration of national physique will take into consideration the "mental physique" of the race. The report of the War Commission has already persuaded some of the necessity for instituting some form of compulsory military service. That, though not likely to receive acceptance in the immediate future, will undoubtedly, if and when it comes, do much for the physique of the nation. Is it too much to hope that the training of the mind both in Scotland and England may also be placed on a more business-like and satisfactory footing than at present? Pharmacists may think that this matter is not one which concerns them very closely, and indeed the part which they may play is not, perhaps, a leading one. But there should be some possible solution for the vexed question raised by the difficulty in obtaining apprentices, and the matter, bearing as it does—even remotely—on national or international economy, is recommended for serious consideration.

THE DRUG HABIT.

During the past week several instances of the deplorable result of over-indulgence in narcotic poisons have been brought to light through the medium of the Police Court. In one case it was stated that an *habitué* had taken as much as 120 grains of cocaine in the course of twenty-four hours. That statement is probably an exaggeration, but, whatever the quantity taken, there seems to be no doubt that the man's downfall was due to the cocaine habit, and therefore the case is of peculiar interest to chemists and druggists, as the individuals legally entrusted with the duty of supplying medicinal substances of a toxic character. There seems to be some misunderstanding in the non-pharmaceutical mind as to the conditions which regulate the sale of cocaine. An eminent physician interviewed this week by a morning paper was under the erroneous impression that a doctor's order was necessary before the drug could be supplied. Of course, this is not so, and cocaine, like the other poisons included in Part I. of the Schedule of the Pharmacy Act, 1868, may be retailed by a registered chemist and druggist provided the purchaser be known to the seller, and a record of the transaction be entered in the Poisons Book, together with the signature of the buyer, and the purpose for which the article is required, while the package is labelled with the word "Poison," and the name and address of the seller.

The desirability of further restricting the sale of this alkaloid has been under consideration on several occasions. Following on the suicide of two young actresses by means of cocaine in the summer of 1901, a question was asked in the House of Commons with reference to the desirability of more stringent regulations with regard to its sale, and Mr. Akers Douglas, in the absence of Mr. Ritchie, replied that the matter had been referred to the Poisons Committee of the Privy Council. The only suggestion, however, made by the Committee, in the report which was issued this year, was to the effect that "cocaine" should be specifically mentioned in the schedule of poisons instead of being included, as at present, under the more vague heading of "poisonous vegetable alkaloids." To all intents and purposes, therefore, the Committee did not consider it necessary further to restrict its sale, though in other countries where the retailing of poisons in general is not governed by an Act of Parliament, it has been found necessary to make special regulations with regard to cocaine. Thus, the Government of Bengal recently issued an order to the effect that in future it would be illegal to sell the drug without a special licence, and then only for *boná-fide* medical purposes. In quite a number of the Southern States of North America a similar law has been enacted. The conditions regulating the sale of cocaine in those countries cannot, however, be considered in any way a precedent so far as this country is concerned, for in most of the districts where it has been found expedient to enforce such restrictions, the practice of pharmacy is on a different basis to that existing here.

As regards opium and its preparations, the conditions of sale are, of course, less stringent, since no record of the sales need be kept, though the articles must be duly labelled. The assertion that the laudanum habit is on the increase is, we have reason to believe, without foundation. The fact that the opium imports into this country have increased of recent years has no bearing on the question, since the greater proportion of this drug which enters our ports is re-exported in the form of morphine and codeine. The demand for laudanum is, according to several manufacturers, much smaller than it was ten years ago. As to the morphine mania, that is one of the evils the chemist has to contend with, and he would be the first to welcome a similar regulation to that existing in France, where a fresh prescription is required on each occasion on which a morphine preparation is dispensed. He would prefer more, rather than less, restriction, since each time the subject of poisons crops up it becomes more and more apparent that it would be suicidal to the best interests of the nation were the restrictions regulating the sale of toxic substances to be diminished in any way whatsoever.

THE LIVERPOOL CORONER AND CARBOLIC ACID.

The attitude adopted towards chemists and druggists by a proportion of the coroners of the country is familiar to readers of this Journal. Some remarks made at an inquest last week by the Liverpool City Coroner deserve to be recorded, as reaching a higher level of intelligence and perspicacity than most. The inquest was held on the body of a man who had poisoned himself with carbolic acid, which had been bought from a chemist. Addressing the jury, Mr. Sampson, the coroner, said there had been fewer cases of carbolic acid poisoning of late, and he believed this state of things had been brought about by the fact that more difficulty was experienced in obtaining poisons. Whilst he considered the chemists in Liverpool took every precaution, he felt there should be greater restrictions placed upon the "sellers of poison" before they eventually handed over their goods. They should, in his opinion, ask the would-be purchaser what he wanted the poison for, request his name and address, and seek other particulars. It was quite possible that the mind of the person who wanted to buy the poison would, in view of the greater precaution, undergo a change, and thus there would be a wavering of the man's intention to commit suicide. He might possibly then go away. What the coroner would like to see apparently is that carbolic acid should be placed in Part I. of the Poisons Schedule. Though that may be deemed impracticable, credit is due to Mr. Sampson for the intelligent interest he takes in the matter, and for his testimony to the care exercised by chemists and druggists in selling poisons.

LIABILITY TO MEDICINE STAMP DUTY.

In response to inquiries on the subject, we are informed that the Board of Inland Revenue does not now decline to mark all labels submitted for an expression of opinion as to their liability or non-liability to Medicine Stamp Duty, but only labels which would be liable apart from the special exemption in favour of chemists and druggists, and contain some disclosure of the composition of the medicines, which may or may not be adequate. Thus, a label containing the words "Cough Mixture" alone would be duly marked liable, but the Board would decline to mark a label on which appeared the words—"Cough Mixture—Composed of Honey, Tolu, and Squills," or even one on which the disclosure of the ingredients of the medicine appeared to be complete.

PILULA FERRI, B.P.

BY E. W. LUCAS AND H. B. STEVENS.

This paper is a summary of further work on Pil. Ferri, B.P. The first instalment was published on June 20 last in this Journal. It was there shown that pills made strictly according to the pharmacopœial directions would not maintain their strength for any appreciable time. The authors also stated that they had in hand a large number of experiments on the keeping qualities of pills made with excipients other than the official ones. These experiments are now concluded and clearly prove the inferiority of the official formula. Uncoated pills have been used throughout all these experiments. The reason for this step was that if a pill could be made that would retain its iron in the ferrous condition for three months, then in all probability it could be depended upon for a much longer time if coated.

The experiments made for the last paper were with pills stocked in an ordinary cardboard pill-box on the laboratory table. These figures are again quoted here and placed side by side with those obtained from pills kept in the same place, but in a well-stoppered bottle. It is interesting to note the difference :—

Date.	Pills Stocked in an Ordinary Pill-Box. Percentage of *Ferrous* Iron reckoned as $FeCO_3$.	Date.	Pills Stocked in a Well-Stoppered Bottle. Percentage of *Ferrous* Iron reckoned as $FeCO_3$.
Freshly made	19·15	Freshly made	20·05
1 day after making ..	18 88	1st week after making ..	19·45
2 days „ ..	18·74	2nd „ „ ..	19·26
4 „ „ ..	18·47	3rd „ „ ..	18·75
7 „ „ ..	17·93	4th „ „ ..	18·34
9 „ „ ..	17·38	5th „ „ ..	17·64
11 „ „ ..	16·98	6th „ „ ..	17·64
14 „ „ ..	16·57	7th „ „ ..	17·35
17 „ „ ..	16·43	8th „ „ ..	17·03
4 weeks „ ..	15·07	9th „ „ ..	16·83
5 „ „ ..	14·53	10th „ „ ..	16·64
6 „ „ ..	14·26	11th „ „ ..	16·53
12 „ „ ..	10·99	12th „ „ ..	16·44

While the pills kept in the box lost 41 per cent. of ferrous iron in three months, those in the stoppered bottle lost only 18 per cent. during that period. And whereas the first batch was found to have lost 15 per cent. of moisture, those kept in the air-tight receptacle weighed practically the same at the final weighing as when first made.

Out of the number of masses made two have been selected as possessing keeping qualities superior to that of the B.P. mass. These two were massed respectively with glucose and honey, in place of the glycerin and syrup ordered in the Pharmacopœia.

The following tables of analyses show the percentage of ferrous carbonate present at regular intervals, extending over three months :—

Date.	B.P. Formula.	Massed with Glucose.	Massed with Honey.
Freshly made	20·05	19·85	20·26
1 week later	19·45	19·56	20·36
2 weeks „	19·26	19·85	20·15
3 „ „	18·75	19·66	20·46
4 „ „	18·34	19·94	21·16
5 „ „	17·64	20·25	21·05
6 „ „	17·64	20·46	20·85
7 „ „	17·35	20·46	21·36
8 „ „	17 03	20 65	21·25
9 „ „	16 83	20·65	21·36
10 „ „	16·64	20·56	21·25
11 „ „	16·53	20·65	21·25
12 „ „	16·44	20 65	21·25

The B.P. pill shows a regular decrease in ferrous carbonate, whereas both of the experimental batches show a slight increase at first and then practically remain constant.

Both pills contained a trace of ferric iron when first made, but the superior reducing power of the glucose and honey over cane sugar and glycerin is shown in the fact that at the final estimation no *ferric* iron was present—it having all been reduced to the *ferrous* state.

Glucose Pill.		Honey Pill.	
First Determination.	Last Determination.	First Determination.	Last Determination.
Ferrous, 19·85 p.c. Ferric, 0·74 p.c. ..	Ferrous, 20·65 p.c. Ferric —	Ferrous, 20·26 p.c. Ferric, 0·98 p.c.....	Ferrous, 21·25 p.c. Ferric —

Honey and glucose being practically equal in reducing power, it only remains to decide which is the better for practical pharmacy. In the authors' opinion glucose stands first. If stiff honey is used, a good mass may be made, but the pills are liable "to fall," and are slightly granular. Glucose, on the other hand, makes a mass which rolls well, the pills keeping their shape and plastic condition for a long period. The following was the formula used in making the mass :—

*Glucose	150 grains.
Distilled water	30 minims.
Exsiccated sulphate of iron in fine powder	150 grains.
Mix and quickly add :—	
Exsiccated sodium carbonate in fine powder...	95 grains.
Mix and set aside for ten minutes, or until the reaction is complete. Add :—	
Tragacanth, in powder.........................	15 grains.
Gum acacia, in powder.........................	50 grains.

Mix.

THE DETERMINATION OF OIL IN COLOCYNTH PULP.

BY E. DOWZARD, F.C.S.

According to the B.P., colocynth should only yield a trace of fixed oil to ether, this is to ensure the absence of seeds, which constitute about two-thirds the weight of the imported fruit, and contain a large amount of oil.

Pure colocynth pulp, free from seeds, yields about 3 per cent. of soluble matter when extracted with ether; this can hardly be called a trace, but the greater part of this is colocynthin, the active principle of the pulp. To make an accurate determination of the oil of colocynth, petroleum ether (redistilled) should be used, in which colocynthin is insoluble, while the oil is readily extracted.

The following examples show how inaccurate the results are when ether is used, and the necessity for using petroleum ether to obtain correct results :—

Pulp Free from Seeds.	Ether Extract.
No. 1.	3·5 per cent.
No. 2.	3·1 per cent.
	Petroleum Extract.
No. 3.	1·16 per cent.

After removing the oil from No. 3 with petroleum ether the residue was extracted with ether, when 2·73 per cent. of soluble matter (colocynthin) was obtained.

Pulp Free from Seeds.	Petroleum Extract.
No. 4.	1·33 per cent.
No. 5.	1·20 per cent.
No. 6.	0·98 per cent.
No. 7.	0·60 per cent.
No. 8.	0 58 per cent.
No. 9.	0·52 per cent.

The above figures were obtained in the examination of large batches of powdered colocynth, and prove that it can be prepared on a commercial scale with an oil content of less than 1·5 per cent.

Two per cent. of oil might be fixed as the maximum amount.

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* Not Syrup of Glucose, B.P.

PHARMACOPŒIA REVISION NOTES.

BY W. LYON.

Extractum Glycyrrhizæ Liquidum.

The acidity which is characteristic of this galenical when prepared according to the official monograph, is a disadvantage when it is prescribed in combination with carbonates, as is not infrequently the case. This acidity is in all probability due to the liberation of glycyrrhizic acid from its ammonium salt, during the process of heating to 100° C. previous to straining out the albuminous matter. If the official directions were amended so as to include neutralisation of the liquid with solution of ammonia previous to adjusting to the specific gravity, the preparation would not be inferior in its demulcent properties to the present official article, and it would be compatible with carbonates. In connection with this subject some experiments were made with the object of obtaining a neutral stable preparation of the fresh root, which could be used in mixtures in place of the liquid extract. The taste of the latter is much inferior to the fresh root, for above the sweet taste there is an acridity which is not in the root. Moreover, the aroma which is so evident in the freshly-peeled root is completely destroyed during the concentration process. The aim, therefore, was towards pure aroma and sweetness rather than mere glycyrrhizin value. Four different processes were tried, a mixture of glycerin, alcohol, and water being taken as a suitable menstruum.

(1) 50 Gm. of decorticated fresh root, cut into small pieces, was macerated for forty-eight hours in a mixture of 45 C.c. of alcohol (45 per cent.) and 5 C.c. of glycerin, strained and pressed; again macerated with same quantities of menstruum, strained and pressed; the liquids mixed, filtered, and adjusted to 100 C.c. with alcohol (45 per cent.).

(2) 50 Gm. of root, as above, was macerated for seven days with 150 C.c. of a mixture of alcohol (90 per cent.) 30 parts, water 60 parts, and glycerin 10 parts, strained, pressed, filtered, and adjusted to 150 C.c. with alcohol and water in above proportions.

(3) 60 Gm. of root was macerated for seven days in 36 C.c. of alcohol (90 per cent.), 48 C.c. of water, and 12 C.c. of glycerin, strained, pressed, and adjusted to 120 C.c. with alcohol and water.

(4) 68 Gm. of root was macerated for seven days in a mixture of 32 C.c. of alcohol (90 per cent.), 88 C.c. of water, and 12 C.c. of glycerin, strained, pressed, filtered, and adjusted to 136 C.c. with alcohol and water.

In neither of these experiments was the root completely deprived of its sweetness, yet each of the preparations had in a marked degree the liquorice aroma and sweetness. After being kept for a couple of weeks, each showed a slight deposit; but otherwise there was no change even at the end of five months, neither showing the slightest effervescence when mixed with sodium bicarbonate. Of the four samples, No. 2 is the best so far as aroma and taste are concerned, though there is very little to choose between it and No. 4. Of course there can be no comparing of the above preparations with the official liquid extract, so far as extractive is concerned; but this, whilst often the main, is not always the only, criterion of value in galenicals.

Tinctura Opii.

Every now and again the old question of standardised tinctures *versus* tinctures from standardised drugs comes to the front and elicits the customary variety of opinions. Although the preponderance of opinion is in favour of standardised tinctures there are some who think otherwise, but it is not in my recollection that the latter have given practical evidence in support of their contention. Whilst every well-wisher of pharmacy will agree that the adoption of tincture standardisation is a step in the right direction, a regrettable circumstance has arisen therefrom, in that many pharmacists now buy these from the wholesale druggists instead of preparing them themselves, as they had been in the habit of doing, giving as their reason that by so doing they save time and avoid any risk of error. The latter is an unfortunate excuse, since it suggests incapacity, an excuse which surely ought not to be heard at the present day. The ideal pharmacy would be one in which all the galenicals required would be prepared on the premises, and if by adopting the system of tinctures from standardised drugs a step towards the ideal would be taken and the habit of buying tinctures checked, a strong case would be made out for its adoption. The essential to this, however, is an absolutely certain process for extracting every particle of active principle from a standardised drug. As a commencement towards the elucidation of this particular question, eight lots of tincture of opium were prepared at various times during the past eighteen months. The results, which are tabulated below, are too few in number to allow anyone to draw a hard and fast inference, but they are indicative—

(1) That the presently official process is a wasteful one, and that even by repeating the process of maceration the alkaloid is not entirely abstracted.

(2) That no two opiums can be depended upon to yield, under similar treatment with alcohol and water, the whole of the alkaloid contained therein.

(3) That it is very improbable that any process of maceration or percolation or combination thereof could be depended upon to completely remove the contained alkaloid.

Kind of Opium Used.	Method of Preparation.	Quantity of 0·75 per cent. Tincture Obtained.	Percentage of Morphine Tincture it would have Contained if it had been Diluted to 1 Litre.
(1) 10 p.c. powder (*a*)	as B.P.—*i.e.*, one maceration	832·0 C.c.	0·624
(2) 10 p.c. powder (*a*)	two macerations—*i.e.*, repeating B.P. process.	938·6 C.c.	0·704
(3) 10 p.c. powder (*b*)	B.P.	817·0 C c.	0·590
(4) 10 p.c. powder (*b*)	two macerations	893·3 C.c.	0·670
(5) 11·13 p.c. moist (*c*)	B.P.	734·0 C.c.	0·551
(6) 11·13 p.c. moist (*c*)	two macerations	935·0 C.c.	0·701
(7) 12·47 p.c. moist (*d*)	B.P.	777·0 C.c.	0·583
(8) 12·47 p.c. moist (*d*)	one maceration with double the B.P. quantities of water and alcohol.	930·0 C.c.	0·697

In each case sufficient opium was taken to produce exactly one litre of 0·75 per cent. tincture, on the basis of the whole of the alkaloid being extracted. This inquiry is being continued, the foregoing being published by way of drawing attention to the question, and inducing others to experiment upon similar lines.

New Cheap Eau de Colognes.

T. Maçon gives the following improved formulæ for eau de Cologne;—(1) Bergamot oil, 20; lemon oil, 30; thyme oil, 2; rosemary oil, 2; lavender oil, 1; alcohol, 2,000; water, 3,000. Dissolve the oils in the spirit, and gradually add the water. Then add magnesium carbonate, 5, shake well, and set aside for at least a week. Filter bright through magnesia. (2) Bergamot oil, 130; lemon oil, 260; thyme oil, 15; rosemary oil, 25; lavender oil, 30; alcohol, 23,000; distilled water, 27,000. Proceed as above. To give a fresh odour of natural flowers omit the thyme, lavender, and rosemary, and substitute terpineol or hyacinthin.—*Nat. Drugg.*, **33**, 102.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Determining the Melting Point of Resins and Waxes.

Kraemer and Sarthou give the following simple method for determining with some accuracy the melting point of resins, paraffins, waxes, and similar bodies Twenty Gm. of the substance is carefully melted on an oil bath, in a small capsule of such size that the melted liquid has a depth of 10 Mm. An open glass tube having a diameter of 7 or 8 M. is then dipped into the melted liquid, the upper end is then closed with the finger, and the contained liquid withdrawn and allowed to solidify. Five Gm. of mercury is then poured into the tube on top of the solidified cylinder of material. This is then suspended in a beaker containing cold water; a thermometer is so placed therein that its bulb is adjacent to the solid cylinder of the substance. This beaker is immersed in another of larger size, also containing water, which serves as the water-bath. The whole apparatus is now cautiously heated and the precise moment noted when the weight of the mercury column displaces the cylinder of wax or other substance under observation. This is taken as the melting point required.—*Nouv. Remèdes*, **19**, 327, after *Chem. Industrie.*

New Uranium Compounds.

A. Colani finds that the double chloride of uranium and sodium, $NaCl\,UCl_2$, is better suited for manipulation than uranous chloride, UCl_2, since it is a stable and but slightly hygroscopic salt. By heating this double salt between 500 and 1,000° C. in a current of sulphuretted hydrogen, the sulphide, US, is readily obtained in large delicate square tables. Since US is readily decomposed by water at a red heat, care must be taken that the sulphuretted hydrogen be perfectly dry. The same sulphide is obtained on fusing together sodium uranium chloride and an alkaline monosulphide. *Uranium selenide*, USe, results in extremely slender crystals when selenuretted hydrogen is substituted for hydrogen sulphide. If the compound has been prepared at too low a temperature it is pyrophoric. The telluride, UTe, is obtained by passing the vapour of tellurium in a current of hydrogen over sodium-uranium chloride heated to 1,000° C. It forms large, very brilliant scales. Better results are obtained by fusing the double salt with sodium telluride, when black quadratic tables of UTe with a brilliant metallic lustre are obtained. *Uranium nitride*, U_3N_2, which has been previously obtained, is easily formed by heating sodium uranium chloride in gaseous ammonia. After dissolving out the sodium chloride the nitride remains as a crystalline powder of metallic aspect. *Uranium phosphide*, U_3P_2, does not readily form on heating $NaClUCl_2$ in PH_3; but by fusing the double salt with aluminium phosphide in a current of hydrogen and treating the fused mass with water, dilute HCl, or ether, it is obtained slightly contaminated with alumina, as a black crystalline powder. *Uranium arsenide*, U_3As_2, in well formed square tablets, results from the action of H_3As on $NaClUCl_2$; by fusion with sodium arsenide it forms as a crystalline powder. The antimonide, U_3Sb_2, has not been obtained. By fusing the double salt in excess with antimony and aluminium, a white alloy is obtained, which when fused in a Leclerc's furnace in a current of hydrogen, parts with a portion of its antimony, without, however, attaining the formula U_3Sb_3. These compounds of uranium with the metalloids burn with difficulty in the air, but they give brilliant sparks when thrown into the flame of a Bunsen burner. They are violently attacked by strong nitric acid.—*Comp. rend.*, **137**, 382.

Lavender Oil Drawn from the Flowers Alone.

For some time past (according to H. E. Burgess, in the half-yearly report of the London Essence Company) there has been talk of flower oil, *i.e.*, oil drawn from the flowers separated from stems. He has carefully distilled separately both the flowers and stems. The flower oil has the following constants:—

Sp. Gr.	Rot.	N_D	Esters.	Alcohols.	Solubility.
0·8855	— 11° 30	1·4668	11·2%	24·9%	1 : 3 or 4 (70%).

There is practically no difference between this and the ordinary oils. This is not remarkable, as there is practically no oil in the stems (less than 0·002 per cent.). The few drops obtained were of a greenish colour, had a herby odour, a very high refractive index, 1·4848 at 20°, and were insoluble in 85 per cent. alcohol. In the author's opinion there is not sufficient cause to justify the extra cost of separating flowers and stems before distillation.

Fluid Extracts for Making Syrups.

Some noteworthy suggestions emanating from the Swiss Pharmacopœia Commission, respecting the employment of fluid extracts for the extemporaneous preparation of syrups, appear in the *Schweizerische Wochenschrift für Chemie und Pharmazie.* Recognising the fact that such fluid extracts are much used and serve a useful purpose, especially in the case of such syrups as are seldom used, and of such as are subject to rapid deterioration, the galenical section has declared itself in favour of the introduction of such syrup extracts into the pharmacopœia. Twelve have been prepared by the referee and submitted to the Commission. The referee considers that in such fluid extracts the following conditions should be fulfilled:—(1) All the therapeutically active constituents of the syrup must be present in the extract in undiminished quantity. (2) The extracts must be completely soluble in water, as otherwise the syrups produced from them will not keep bright. The fluid extracts of the Swiss Pharmacopœia are, therefore, not available for the purpose. (3) They must keep well, at least, for several months; alcohol and glycerin are the only admissible preservatives. These conditions may be fulfilled in two ways:—(*a*) by concentrating an aqueous infusion, and adding glycerin as preservative; (*b*) by percolating with a menstruum containing at most 15 per cent. of alcohol, reserving the first percolate, and adding glycerin to the weak percolates during concentration. The following formulæ selected from those suggested are of interest to English pharmacists:—

EXT. IPECACUANHÆ.

Ipecacuanha root	10 Gm.
Glycerin	25 Gm.
Acid hydrochloric dil.	5 drops.
Water	200 Gm.

Digest for half-an-hour on a water-bath; filter and wash with hot water until the filtrate weighs 250 Gm. Evaporate to 100 Gm. (1 part to 9 parts of simple syrup).

EXT. RHEI.

Sliced rhubarb	5·0 parts by weight.
Sodium carbonate	0·3 part by weight.
Glycerin	5·0 parts
Cassia bark	1·0 part
Water	100·0 parts

Macerate for twelve hours, and then digest on a water-bath for half-an-hour; strain off, without pressure, 85 parts. Allow to stand for twelve hours, filter, and evaporate to 10 parts (1 to 9).

EXT. ROSÆ.

Percolate 50 parts of powdered red roses with 15 per cent. alcohol; reserve the first 40 parts. To the following weak percolates add glycerin, 5 parts, evaporate to 10 parts, and add to the reserve (1 to 9).

EXT. SENEGÆ.

Macerate for twelve hours, and exhaust by percolation with 15 per cent. alcohol; concentrate the percolate, and add glycerin.

—*Pharm. Zeit.*, **48**, 593.

THE STUDENTS' COLUMNS.

VEGETABLE MATERIA MEDICA (1).

The Collection of Drugs.

A large proportion of the drugs with which the pharmacist has to deal are directly derived from the vegetable kingdom, that is to say, they are either parts of plants or they are substances that are produced by plants and obtained from them by some simple means. Such drugs are classed together as "crude" vegetable drugs, because they have not been subjected to any elaborate process of preparation that would materially alter their composition. Opium, for example, belongs to this class, as it simply consists of the milky juice that exudes when unripe poppy capsules are incised, collected and dried. Morphine, on the other hand, which is one only of the many constituents of opium and is extracted from it by a somewhat elaborate process, is no longer a crude drug.

All drugs must of necessity be collected, and the time at which they are collected is often of considerable influence upon the nature of the drug; this must, therefore, be a matter for consideration. Drugs are employed in medicine because they produce beneficial results when administered. These results are to be attributed to certain constituents of the drugs, and these constituents are accordingly termed the "active constituents" or "active principles" of the drugs. Many of them have been separated from the drugs in which they were contained, and have been purified and carefully examined, as for instance hyoscyamine, morphine, etc., but in other cases the active constituents are unknown or but imperfectly known. Now, whatever part of the plant is collected, it is very desirable that it should be collected when it is richest in active constituents. This is not only a matter of economy, but of uniformity. For instance, it is well known that the quantity of alkaloid in belladonna root varies very considerably; it is largest in the autumn after the green parts of the plant have died down, and smallest in the summer, when the plant is in vigorous growth. Hence belladonna root should be collected about October or November. The same is true of aconite and other roots. Those underground stems that are known as rhizomes also appear to be most active during the period of rest, that is after the leaves and green parts have died down, but before the buds have begun to develop the stems of the succeeding year.

Leaves also vary considerably in the amount of active constituents that they contain, but the time during which they can be collected is more restricted. Foxglove leaves are most active during the period of vigorous growth of the plant, and become considerably weaker as the autumn is approached (September). This is probably true of most leaves, and the time of active growth is generally regarded as the proper time for collecting them. Cherry-laurel leaves, however, are far more active when very young than when full grown. Fruits are generally gathered when ripe, but in some instances the full-grown, but unripe, fruit is the most active. This has been accurately demonstrated with hemlock fruits, the activity of which rapidly diminishes as the colour of the fruit turns from green to brown. Seeds also are generally collected when ripe. Barks are most easily detached from the trunk in the spring when the sap is rising, and they are therefore generally collected at that time, but it by no means follows that this is the best time, since it has been definitely shown that "Virginian prune" or wild black cherry bark is most active in the autumn. Much, therefore, depends upon the collection of the drug at the proper season, and it is often possible to determine from the characters of the drug itself that this has been done.

The Drying of Drugs.

Comparatively few vegetable drugs are used in the fresh state. The majority of them must be dried, in order that they may be kept and distributed. They thus become "air-dry" drugs, which subsequently undergo a second drying previous to disintegration. The means by which fresh vegetable drugs are dried are usually very simple. The moisture contained in them is removed by evaporation, a subject which will receive proper attention under pharmacy. Here it may be said that a current of warm air, varying in temperature from about 25° C. to 35° C., is, generally speaking, sufficient for the purpose.

Leaves and flowers are spread in thin layers upon canvas stretched on wooden frames, which are ranged in rows in a well-ventilated loft or shed. If they are occasionally turned they will dry in from twenty-four to thirty-six hours. Roots, of course, lose their moisture much more slowly, because the surface exposed to the air is so much smaller in proportion to the thickness; they are often sliced longitudinally (elecampane) or transversely (calumba), which not only increases the surface exposed, but lays bare a surface that is not covered with a corky coating which opposes the escape of moisture. Rhizomes are often similarly treated. Care must be taken not to raise the temperature unduly high, especially at first. Most roots and rhizomes contain starch, which, when heated in the presence of moisture—as would be the case with a fresh drug—swells and gelatinises. This gelatinisation occurs at temperatures varying from about 50° to 80° C., and it is objectionable from two points of view. In the first place, the gelatinised starch dries to a hard, horny mass in the outer portions of the drug, and prevents the passage of the moisture from the interior. An unduly high temperature thus delays rather than facilitates the drying. In the second place, the starch is thus rendered partly soluble, and is liable to pass into the galenical preparations made from the drug, and render them more prone to decomposition. The drying should, therefore, be conducted at a temperature well below 50° C.

It is, however, frequently desirable that fresh drugs should be dried slowly instead of rapidly. Vanilla pods, for instance, if rapidly dried, have none of the aroma that is the essential part of the drug. Orris rhizome, when collected, is devoid of perfume; tea, cocoa, tobacco, and other drugs are intentionally subjected to a moderately warm temperature for a length of time before they are finally dried, in order that certain changes may be effected in them. These processes are generally spoken of as processes of "fermentation" or of "curing," and the changes induced during them are certainly in some, probably in all, cases effected by bodies known as enzyme ferments. Even after fresh drugs have been brought into the air-dry condition these enzyme ferments appear to effect slow changes, which in some cases result in an improved condition of the drug. Thus cascara bark and alder buckthorn bark lose certain unpleasant emetic properties when they are kept; podophyllum rhizome, when freshly dried, yields little or no resin.

Transportation of Drugs.

Comparatively few drugs are cultivated or collected in this country; the great majority are imported directly or indirectly from the countries in which they are produced. The routes by which these reach the London market are determined partly by the nationality of the country and partly by the facilities for transportation. German-grown drugs are exported largely from Hamburg. From Western Africa and South America drugs are brought chiefly to Liverpool; from South Africa, India, China, and Australia, viâ the Red Sea to London.

Singapore is the emporium for many drugs produced in the Malay Archipelago; from Singapore they are exported to London. From the Dutch colonies, however, the drugs are often sent to Amsterdam, whence they are re-shipped to this country; whilst those from French colonies find their way to England viâ Marseilles and Bordeaux.

Sale of Drugs.

On their arrival in London these drugs are sold either by public auction or private contract. They are generally consigned to a broker, who exhibits samples in his office, after which the bulk is sold by auction; or the broker or an agent of the producer may sell them privately to a drug merchant who is desirous of purchasing. Some drugs, however, are shown in bulk (not in sample) in a large warehouse belonging to the London and India Dock Company previous to selling. Before these drugs reach the pharmacist, and sometimes before they reach the wholesaler, they are subjected to a process of sorting. Thus, rhubarb is generally sorted by an expert employee of the Dock Company into various kinds and qualities before it is offered for sale to the drug merchant; musk is similarly treated. Myrrh is generally picked over by a workman employed by the wholesaler, who rejects suspicious pieces before it is sold to the pharmacist. Gum acacia is sorted in Trieste, whence druggists largely draw their supplies. It may indeed be said that few drugs reach the pharmacist in the condition in which they are imported.

Books, etc., for Reference.

Greenish's 'Materia Medica.' Notes on the source, etc., of the various drugs mentioned in the foregoing article.

Pharmaceutical Journal. Articles on the "Commerce of Drugs," published in the issues of February 28, April 11, and May 23, 1903.

PHOTOGRAPHIC NOTES.

'Photographic Failures: Prevention and Cure,' by "Scrutator," of the *Photogram*, is a small handbook of some ninety pages for the amateur photographer, just published by Messrs. Dawbarn and Ward, Limited, at 1s. net. The book contains a transparent chart showing the appearance of negatives incorrectly exposed or developed, in addition to many useful hints on various processes.

The 'Photogram' Series of Penny Pamphlets in Photography have now been augmented by two further pamphlets dealing with "Colour-Correct Photography" and "How a Lens Works." The former gives some facts about isochromatic or orthochromatic methods whereby photographers may greatly improve their work technically and pictorially. In the other a lens is compared with a pin-hole, and an attempt is made to show what a lens does and what it cannot do. Aberrations and distortions are dealt with, and focus, stops, or diaphragms, wide angle and narrow angle lenses are all explained step by step. In fact, the object of this series of pamphlets is to give plain and direct answers to questions which frequently arise in the minds of beginners.

Combined Bath.—The *Photographic News* publishes the following formula as a cheap method of making a quart of combined toning and fixing solution:—Take hypo., 16 oz.; ammonium sulphocyanide, 2 oz.; lead nitrate, 350 grains; alum, 1½ oz.; and water one quart. Dissolve the alum and lead together and add to the hypo. Heat the solution, and, on cooling, decant off. For use, dilute with an equal bulk of water, and add 1 part of a 1 per cent. solution of gold chloride to every 10 parts of the stock bath used. The prints should be well washed before toning in this bath.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

PRESIDENTIAL ADDRESS.

On Wednesday, September 9, 1903, at the annual meeting of this body at Southport, Sir Norman Lockyer, K.C.B., LL.D., F.R.S., delivered his presidential address. Beginning with a reference to the death of Lord Salisbury, "an enthusiastic student of science," the President alluded to the important fact that Lord Salisbury's successor in the Premiership had accepted the Presidency of the British Association for next year. These references lead to a consideration of the

Influence of Brain Power on History.

The progress of science brings in many considerations which are momentous in relation to the life of any limited community—any one nation. One of these considerations to which attention is now being greatly drawn is that a relative decline in national wealth derived from industries must follow a relative neglect of scientific education. Britain in the middle of the last century was certainly the country which gained most by the advent of science, being in full possession of those material gifts of Nature, coal and iron. The most fundamental change wrought by the early applications of science was in relation to producing and carrying power. With the winning of mineral wealth and the production of machinery in other countries that superiority has been reduced. Science, which is above all things cosmopolitan—planetary, not national—internationalises such resources at once. The unfortunate thing was that while the foundations of our superiority depending upon our material resources were being thus sapped by a cause which was beyond our control, our statesmen and our universities were blind leaders of the blind, and our other asset, our mental resources, which was within our control, was culpably neglected. We now know, from what has occurred in other States, that if our Ministers had been more wise and our universities more numerous and efficient our mental resources would have been developed by improvements in educational method, by the introduction of science into schools, and, more important than all the rest, by the teaching of science by experiment, observation, and research, and not from books. It is because this was not done that we have fallen behind other nations in properly applying science to industry, so that our applications of science to industry are relatively less important than they were. But this is by no means all; we have lacked the strengthening of the national life produced by fostering the scientific spirit among all classes and along all lines of the nation's activity; many of the responsible authorities know little and care less about science. Unless by some means or other we obtain a more general attention to the objects of science and a removal of any disadvantages of a public kind which impede its progress, we shall suffer in competition with other communities in which science is more generally utilised for the purposes of the national life.

The Struggle for Existence in Modern Communities.

Every Minister, every public department, is involved; and this being so, it is the duty of the whole nation—King, Lords, and Commons—to do what is necessary to place our scientific institutions on a proper footing in order to enable us to "face the music," whatever the future may bring. The idea that science is useful only to our industries comes from want of thought. If anyone is under the impression that Britain is only suffering at present from the want of the scientific spirit among our industrial classes, and that those employed in the State service possess adequate brain-power and grip of the conditions of the modern world into which science so largely enters, let him read the report of the Royal Commission on the War in South Africa. Let him read also in the address of the President of the Society of Chemical Industry what drastic steps had to be taken by chambers of commerce and a quarter of a million of working-men to get the Patent Law Amendment Act into proper shape in spite of all the advisers and officials of the Board of Trade. Very few people realise the immense number of scientific problems the solution of which is required for the State service. The nation itself is a gigantic workshop, and the more our rulers and legislators, administrators and executive officers possess the scientific spirit, the more the rule of thumb is replaced in the State service by scientific methods, the more able shall we be, thus armed at all points, to compete successfully with other countries along all lines of national as well as of commercial activity.

Industries Suffering.

The fact that the industries of the nation are suffering in the present international competition is perfectly well known to many political leaders in and out of the Cabinet. Among others, Lord Rosebery and Mr. Chamberlain have spoken on the subject. We are suffering because trade no longer follows the flag as in the old days, but because trade follows the brains, and our manufacturers are too apt to be careless in securing them. In one chemical establishment in Germany 400 doctors of science, the best the universities there can turn out, have been employed at different times in late years. In the United States the most successful students in the higher teaching centres are snapped up the moment they have finished their course of training, and put into charge of large concerns, so that the idea has got abroad that youth is the password of success in American industry. It has been forgotten that the latest product of the highest scientific education must necessarily be young, and that it is the training and not the age which determines his employment. In Britain, on the other hand, apprentices who can pay high premiums are too often preferred to those who are well educated, and the old rule-of-thumb processes are preferred to new developments—a conservatism too often depending upon the master's own want of knowledge. The defeat of our industries one after another, concerning which both Lord Rosebery and Mr. Chamberlain express their anxiety, is by no means the only thing we have to consider. The matter is not one which concerns our industrial classes only, for knowledge must be pursued for its own sake; and since the full life of a nation with a constantly increasing complexity, not only of industrial, but of high national aims, depends upon the universal presence of the scientific spirit—in other words, brain-power—our whole national life is involved.

Organisation of Science.

The students of science are still the most disorganised members of the community, and here, in Sir Norman Lockyer's opinion, is the real reason why the scientific needs of the nation fail to command the attention either of the public or of successive Governments. "During many years it has been part of my duty to consider such matters, and I have been driven to the conclusion that our great crying need is to bring about an organisation of men of science and all interested in science similar to those which prove so effective in other branches of human activity. For the last few years I have dreamt of a Chamber, Guild, League—call it what you will—with a wide and large membership, which should give us what, in my opinion, is so urgently needed. Quite recently I sketched out such an organisation, but what was my astonishment to find that I had been forestalled, and by the founders of the British Association!" Also, in the report of a committee appointed last year to report on methods of encouraging the work of the corresponding societies, the suggestion has been made that an official invitation on behalf of the Council of the Association be addressed to the corresponding societies, asking them to appoint standing British Association sub-committees, with the object of dealing with all those subjects of investigation common to their societies and to the British Association committees, and to look after the general interests of science and scientific education throughout the provinces and provincial centres. Sir Norman Lockyer is of opinion that if these and other suggestions are adopted, great good will result to science throughout the Empire.

The Insufficiency of Universities.

Our position as a nation, our success as merchants, are in peril chiefly—dealing with preventable causes—because of our lack of completely efficient Universities and our neglect of research. The science which the young men of to-day neglect, with the full approval of their teachers, on their way through the school and the university to politics, the Civil Service, or the management of commercial concerns, is now one of the great necessities of a nation; and our universities must become as much the insurers of the future progress as battleships are the insurers of the present power of States. In other words, University competition between States is now as potent as competition in building battleships; and it is on this ground that our University conditions become of the highest national concern, and therefore have to be referred to here, and all the more because our industries are not alone in question. We in Great Britain have thirteen universities competing with 134 State and privately endowed in the United States and twenty-two State-endowed in Germany. Sir N. Lockyer omits all reference to higher institutions for technical training, of which Germany alone possesses nine of university rank, because they are less important; they instruct rather than educate, and our want is education. The German State gives to one university more than the British Government allows to all the universities and university colleges in England, Ireland, Scotland, and Wales put together. These are the conditions which regulate the production of brain-power in the United States, Germany, and Britain respectively, and the excuse of the Government is that this is a matter for private effort. Do not our Ministers of State know that other civilised countries grant efficient State aid, and, further, that private effort has provided in Great Britain less than 10 per cent. of the sum thus furnished in the United States in addition to State aid?

Private Endowment a Broken Reed.

What are the facts relating to private endowment in this country? In spite of the munificence displayed by a small number of individuals in some localities, the truth must be spoken. In depending in our country upon this form of endowment we are trusting to a broken reed. If we take the twelve English university colleges we find that private effort during sixty years has found less than £4,000,000; that is, £2,000,000 for buildings and £40,000 a year income. In the United States, during the last few years, universities and colleges have received more than £40,000,000 from this source alone; private effort supplied nearly £7,000,000 in the years 1898-1900. Next consider the amount of State aid to universities afforded in Germany. The buildings of the new University of Strassburg have already cost nearly a million; that is, about as much as has yet been found by private effort for buildings in Manchester, Liverpool, Birmingham, Bristol, Newcastle, and Sheffield. The Government annual endowment of the same German university is more than £49,000. The more we study the facts, the more statistics are gone into, the more do we find that we, to a large extent, lack both of the sources of endowment upon one or other, or both, of which other nations depend. We are between two stools, and the prospect is hopeless without some drastic changes. Local and municipal efforts are signally futile. No university can be a merely local institution. To compete on equal grounds with other nations we must have more universities. But this is not all—we want a far better endowment of all the existing ones, not forgetting better opportunities for research on the part of both professors and students. Another crying need is that of more professors and better pay. Another is the reduction of fees; they should be reduced to the level existing in those countries which are competing with us—to, say, one-fifth of their present rates, so as to enable more students in the secondary and technical schools to complete their education.

How to Get More Universities.

An admirable precedent showing the manner in which the brain-power of the nation can be rescued is afforded by the measures taken some twenty years ago, by placing the Navy on a firm basis, to preserve our sea power. Contrasting the methods adopted in this country by the State for the maintenance of brain-power and sea-power respectively, the conclusion is arrived at that either the Admiralty is thoughtlessly and wastefully spending money, or that there is no connection whatever between the higher intelligence and the prosperity of a nation. If while we spend so freely to maintain our sea-power our export of manufactured articles is relatively reduced because our competitors beat us in the markets of the world, what is the end of the vista thus opened up to us? A navy growing stronger every year and requiring larger votes to guard our commerce and communications, and a vanishing quantity of commerce to guard—a reduced national income to meet an increasing taxation! The pity is that our Government has considered sea-power alone; that while so completely guarding our commerce it has given no thought to one of the main conditions on which its production and increase depend. A glance could have shown that other countries were building universities even faster than they were building battleships; were, in fact, considering brain-power first and sea-power afterwards.

What Will They Cost?

Comparison with foreign countries shows that we want eight new universities, some of which, of course, will be colleges promoted to university rank and fitted to carry on university work. If our present university shortage be dealt with on battleship conditions, to correct it we should expend at least £8,000,000 for new construction, and for the pay-sheet we should have to provide £400,000 yearly for *personnel* and upkeep, for it is of no use to build either ships or universities without manning them. Let us say, roughly, capitalising the yearly payment at 2½ per cent., £24,000,000. "I have spent a year in making inquiries, as full as I could make them, of friends conversant with the real present needs of each of the universities, old and new. I have obtained statistics which would fill a volume, and personally I believe that this sum at least is required to bring our university system up to anything like the level which is insisted upon both in the United States and in Germany. Even Oxford, our oldest university, will still continue to be a mere bundle of colleges unless three millions are provided to enable the university, properly so called, to take her place among her sisters of the modern world; and Sir Oliver Lodge, the Principal of our very youngest university, Birmingham, has shown in detail how five millions can be usefully and properly applied in that one locality to utilise for the good of the nation the enthusiasm and scientific capacity which are only waiting for adequate opportunity of development. How is this money to be raised? I reply, without hesitation, duplicate the Navy Bill of 1888-9; do at once for brain-power what we so successfully did then for sea-power. Let £24,000,000 be set apart from one asset, our national wealth, to increase the other, brain-power. Let it be assigned and borrowed as it is wanted; there will be a capital sum for new buildings to be erected in the next five or ten years, the interest of the remainder to go towards increased annual endowments."

This sum is not to be regarded as practically gone when spent, as in the case of a short-lived ironclad. It is a loan which will bear a high rate of interest.

What Other Nations Have Done.

The sum of £24,000,000 is less than half the amount by which Germany is yearly enriched by having improved upon our chemical industries, owing to our lack of scientific training. Many other industries have been attacked in the same way since; but taking this one instance alone, if we had spent this money fifty years ago, when the Prince Consort first called attention to our backwardness, the nation would now be much richer than it is, and would have much less to fear from competition. History shows what has been done elsewhere. After the battle of Jena, the King of Prussia determined to supply the loss of territory by intellectual effort, and promptly founded three universities, to say nothing of observatories and other institutions. After the battle of Sedan the old University of France was replaced by fifteen independent universities. Even more wonderful is the "intellectual effort" made by Japan, not after a war, but to prepare for one. The question is, Shall we wait for a disaster and then imitate Prussia and France; or shall we follow Japan and thoroughly prepare by "intellectual effort" for the industrial struggle which lies before us?

Research.

Years ago we had Faraday apparently wasting his energies and time in playing with needles; electricity now fills the world. To-day men of science in all lands are studying the emanations of radium; no research could be more abstract; but who knows what advance in human thought may follow or what gigantic world-transforming superstructure may eventually be raised on the minute foundation they are laying? If we so organise our teaching forces that we can use them at all stages, from the gutter to the university, to sift out for us potential Faradays—to utilise the mental products which otherwise would be wasted—it is only by enabling such men to continue their learning after their teaching is over that we shall be able to secure the greatest advantage which any educational system can afford.

Past Efforts to Encourage Research

In 1872 a society for the organisation of academical study was formed in connection with the inquiry into the revenues of Oxford and Cambridge, and there was a famous meeting in the Freemasons' Tavern, Mark Pattison being in the chair. Brodie, Rolleston, Carpenter, Burdon-Sanderson were among the speakers, and the first resolution carried was, "that to have a class of men whose lives are devoted to research is a national object." The movement died in consequence of the want of sympathy of the university authorities. In the year 1874 the subject was inquired into by the late Duke of Devonshire's Commission; and, after taking much remarkable evidence, including that of Lord Salisbury, the Commission recommended to the Government that the then grant of £1,000, which was expended, by a committee appointed by the Royal Society, on instruments needed in researchs carried on by private individuals, should be increased, so that personal grants should be made. This recommendation was accepted and acted on; the grant was increased to £4,000, and finally other societies were associated with the Royal Society in its administration. The committee, however, was timorous, possibly owing to the apathy of the universities and the general carelessness on such matters, and only one personal grant was made; the whole conception fell through. Meantime, however, opinion has become more educated and alive to the extreme importance of research to the nation, and in 1891 a suggestion was made to the Royal Commission which administers the proceeds of the 1851 Exhibition that a sum of about £6,000 a year available for scholarships should be employed in encouraging post-graduate research throughout the whole Empire.

The Political Importance of Research.

A country's research is as important in the long run as its battleships. The most eloquent teaching as to its national value we owe to Mr. Carnegie, for he has given the sum of £2,000,000 to found a system of endowments, his chief purpose being, in his own words, "to secure if possible for the United States of America leadership in the domain of discovery and the utilisation of new forces for the benefit of man." Here is a distinct challenge to Britain. Judging by experience in this country, in spite of the magnificent endowment of research by Mond and Lord Iveagh, the only source of possible competition in the British interest is the State, which certainly could not put the 1/8,000th part of the accumulated wealth of the country to better use; for without such help both our universities and our battleships will become of rapidly dwindling importance.

The Need of a Scientific National Council.

Much evidence bearing upon the amount of scientific knowledge required for the proper administration of the public departments, and the amount of scientific work done by and for the nation, was brought before the Royal Commission on Science presided over by the late Duke of Devonshire now more than a quarter of a century ago. The Commission unanimously recommended that the State should be aided by a scientific council in facing the new problems constantly arising. But while the home Government has apparently made up its mind to neglect the advice so seriously given, it should be a source of gratification to us all to know that the application of the resources of modern science to the economic, industrial, and agricultural development of India has for many years engaged the earnest attention of the Government of that country. Lord Curzon has recently ordered the heads of the various scientific departments to form a board, which shall meet twice annually, to begin with, to formulate a programme and to review past work. The board is also to act as an advisory committee to the Government, providing among other matters for the proper co-ordination of all matters of scientific inquiry affecting India's welfare. Science will ultimately rule all the operations both of peace and war, and therefore the industrial and the fighting population must both have a large common ground of education. Already it is not looking too far ahead to see that in a perfect State there will be a double use of each citizen—a peace use and a war use—and the more science advances, the more the old difference between the peaceful citizen and the man at arms will disappear. The barrack, if it still exists, and the workshop will be assimilated; the land unit, like the battleship, will become a school of applied science, self-contained, in which the officers will be the efficient teachers. I do not think it is yet recognised how much the problem of national defence has thus become associated with that with which we are now chiefly concerned.

The address concludes as follows:—"I have done what I feel to be my duty in bringing the present condition of things before you. It is now your duty, if you agree with me, to see that it be put right. You can if you will."

PHARMACEUTICAL SOCIETY OF IRELAND.

MEETING OF THE COUNCIL.

Wednesday, August 26, 1903, at 67, Lower Mount Street, Dublin, the President, Mr. George Beggs, in the chair. The other members of the Council who attended were Messrs. Wells, Vincent Johnston, John Smith, I. Edgar Connor (Newry), Doig, White (Sligo), Watson, Professor Tichborne, and P. Kelly.

The Ballinasloe Prosecutions.

A letter from the District Inspector of the Royal Irish Constabulary announced that the summonses against Messrs. Laurence Conroy and Thos. B. Hibberts for selling sheep-dip containing poison without being qualified to do so, had been dismissed without prejudice.

A report of the Law Committee recommended that Mr. Clay, the Solicitor to the Council, should be instructed to issue fresh summonses.

The President said he was sure the members were astonished at the result of those prosecutions. Professor Tichborne was there, but he was told to stand aside. The magistrates held that the articles were "patent medicines," and that anybody could sell a "patent medicine" whether it contained poison or not.

Mr. Smith said that the police instituted the proceedings, and the Pharmaceutical Society was not professionally represented.

Mr. Wells said that when they had had cases which they believed a sergeant of police would be well able to conduct, they had always asked the sergeant of the district to do so, but in some cases the sergeants had written to them asking them to send professional assistance. In the prosecutions now in question two of the magistrates advocated the defendants' case. One of the defendants did not appear at all, but a letter was handed to the magistrates from him, which they perused, but did not read out, and though that defendant had no professional representative, they dismissed the case against him without going into it at all, on the ground that the article was a patent medicine. Then Professor Tichborne rose and tried to point out that the sheep-dip was not a "patent medicine," but they would not listen to him, and ordered him to stand aside.

Mr. White said that in his opinion the cases should be brought into the King's Bench at once. Fresh summonses would not cost the defendants much, but King's Bench proceedings entailed a lot of expense. The decision of that Court would be a guide for the future, and the expense would frighten people.

The President said it was a case in which they should not spare expense. It was a strong case, and they had right on their side.

Professor Tichborne said that when he sought to point out to the magistrates that sheep-dip was not a patent medicine, and that the cases did not come under Clause 31 of the Pharmacy Act, the magistrates said they would not hear him on questions of law.

After further discussion it was decided that the Law Committee should take the advice of Mr. Clay as to the course to be taken.

Technical Instruction.

Mr. J. Smith brought under the notice of the Council forms of application to the Department of Agriculture and Technical Instruction in Ireland for grants, with a view to the consideration by the Council as to whether they would apply for a grant. The Department were recognising and aiding schools that were not as well entitled to it as the Society's Schools, and they had already intimated that they would recognise the Society's licentiates as teachers. He thought that at all events the Council should put in an application with a view to obtaining all the information they could on the subject, and he moved that a form of application be filled up.

Mr. Wells seconded the motion. If they did not send in their application now they would be late. By making it they would get officially into touch with the Department, and if after they had got full information on the matter they should find that a connection with the Department would not work satisfactorily for their School, they would not be bound to proceed farther.

After some discussion, the President said they were all agreed that an application should be sent in. They would get the papers back at the end of another month, and then they would be able to form an opinion as to whether it would be advisable to carry the matter further. When information arrived it would be well to have a special meeting of the Schools Committee convened. The thanks of the Council were due to Mr. Smith for the inquiries he had made and the trouble he had taken in the matter.

On the motion of the President, seconded by Professor Tichborne, Messrs. Smith and Watson were appointed scrutineers of the ballot for the forthcoming elections.

Election of Members.

On the motion of the President, seconded by Mr. Johnston, Mr. B. Collis, 32, North Circular Road, Dublin, and Mr. P. J. D. Fielding, 80, Patrick Street, Cork, were elected members of the Society.

FORTHCOMING EXAMINATIONS.

Applications for admission to the following examinations should be lodged with the Registrar by eleven o'clock a.m. on the respective dates at latest:—

Preliminary Examination on Tuesday, 22nd inst.

Pharmaceutical Assistants' Examination on Monday, 28th inst.

Registered Druggists' Examination on Tuesday, 29th inst.

Pharmaceutical Licence Examination on Wednesday, 30th inst.

PRESTON GROCERS' ASSOCIATION.

ORDINARY MEETING.

Monday, September 7, 1903, at the White Horse Restaurant, Preston. The Secretary reported that, at the request of Mr. Kay, one of their members, he wrote to Mr. Giles, Secretary of the Federation of Grocers' Associations, asking if the Federation were watching the new regulations of the Board of Inland Revenue respecting

Medicine Stamps.

In reply, Mr. Giles wrote:—

> Replying to your letter *re* the regulations of the Board of Inland Revenue and medicine stamps, though we have not communicated with the associations, we have been very carefully watching the matter. It is, however, as you will see, to some extent a matter which principally affects chemists, as not many grocers keep preparations which can be described as medicines. What we have been watching very particularly is that the Board of Inland Revenue do not give undue monopoly to chemists as against grocers. If there is any special question arising in connection with any of your members upon the subject, and you will let me know, I shall be very pleased to deal with it.

The Secretary, continuing, said he waited upon the firm of Messrs. Marsden and Kay, drysalters, of Preston, and had a long conversation with one of the partners. He thought it would not be a bad idea to secure one of the firm's lists and mark the articles affected by the change in practice. He did so, and, assisted by Mr. Marsden, he ticked off thirty-five. This list he sent to Mr. Giles, pointing out the large trade which was done in the north of England by grocers in packed medicines. Since then, however, he had not received any reply. The Society representing the chemists of the country had decided not to take any action in the matter, because the regulations would favour chemists as against other dealers in medicines; therefore, there was ample proof that it was to the interests of the grocers that the new regulations should be watched. He understood that those concerned in the wholesale drug trade in Lancashire had engaged eminent counsel to watch their interests.

Mr. Kay expressed surprise that they had not received another communication from Mr. Giles, seeing the Pharmaceutical Society had obtained some concessions.

The further discussion of the matter was adjourned.

IRISH CHEMISTS', ASSISTANTS' AND APPRENTICES' ASSOCIATION.

GENERAL MEETING.

Wednesday, September 2, 1903, in the Gresham Hotel, Upper Sackville Street, Dublin, Mr. William M'Carthy, L.P.S.I., in the chair.

The Hon. Secretary reported on the result of an advertisement for permanent meeting rooms inserted in the local papers.

After a long discussion it was resolved to accept the offer of premises at 73, Harcourt Street, which included lecture-room, concert hall, billiard-room, retiring-room, bicycle stables, and tea-room, for two nights a week. It was arranged that the united committees of finance, entertainment, education, etc., should meet in the new premises on the 7th inst. and prepare a draft copy of the proposed rules of the new Association for submission to the general meeting, the date of which would be made known later on.

In reply to questions as to the admission of honorary members in the shape of employers, the Chairman said he could not make any pronouncement; this was wholly contingent on the rules, which had yet to be made.

Subscriptions amounting to close on £5 having been received, a vote of thanks to the Chairman terminated the proceedings.

LEGAL INTELLIGENCE.

Sale of Food and Drugs Acts.

Tincture of Iodine.

On Thursday, September 3, 1903, at Sheerness, the Timothy White Drug Company, Limited, were summoned for selling at their Sheerness branch shop tincture of iodine deficient in free iodine equal to 21 per cent.

Mr. A. B. Shaw, of London, who defended, pleaded not guilty, and said that when Superintendent Rhodes asked for six ounces of tincture of iodine he was told they had only four ounces in the shop, but the manager afterwards said he would make up the quantity required. He did so, and was paid 2s. 3d.

David Jenkin Thomas, the manager, said that all the firm's drugs were supplied pure from the depôt at Portsmouth. He made up the difference from some stronger solution in stock, and added three parts of spirit of wine. He could only account for the mistake from the fact that the shadow of the blind hid the figure on the measure from view.

The Stipendiary, looking upon it as a technical offence, fined the defendants 5s. and 16s. costs.

Sweet Spirit of Nitre.

On Friday, September 4, 1903, at Northampton, Walter Hillson, of Duston, was summoned for selling sweet spirit of nitre which was not up to the B.P. standard of strength, it being deficient in nitrous ether to the extent of 32 per cent. It appeared that the drug had been kept in a cork-stoppered bottle, and that the defendant had been previously warned of the liability of the spirit to evaporate. A fine of £1 and 6s. costs was imposed.

POISONING CASES AND INQUESTS.

The deaths by poisoning reported during the seven days ended Wednesday, September 9, 1903, numbered eighteen. The vermin-killer case merits particular attention.

Poison.	Accident.	Suicide.
Carbolic Acid	1	3
Carbon Monoxide	1	—
Chloroform	2	—
Hydrochloric Acid	—	1
Morphine	1	—
Oxalic Acid	—	5
Ptomaines	3	—
Vermin-killer	—	1
Total	8	10

Carbolic Acid.—Four deaths by poisoning from this substance are reported. Three men, at Hammersmith, Liverpool, and Hodnet, respectively, have committed suicide, and an innkeeper at Plymouth died by misadventure from taking the acid. The remarks made by the Liverpool coroner are quoted elsewhere (see page 399).

Carbon Monoxide.—An employee at the Mond Nickel Works, Clydach, died from pneumonia, caused by inhaling a noxious gas, probably carbon monoxide.

Chloroform.—A young woman at Musselburgh, and a man at University College Hospital, London, died while under the influence of chloroform.

Hydrochloric Acid.—A cabinet maker at Deptford committed suicide by drinking spirit of salt.

Morphine.—Mr. J. G. Hart, dentist, Stratford, died from an accidental overdose of morphine.

Oxalic Acid.—This caused five deaths, all suicidal. An ex-soldier in West London, a man at Wandsworth, a young woman at Oundle, a married woman at Kingsland, and a servant girl at Derby, were the persons concerned.

Ptomaines.—A child at Lewisham, another at Hemsworth, and a woman at Tonbridge, died from ptomaine poisoning. This was also suspected in the case of a child at Newark, but the inquest was adjourned for further evidence.

Vermin Killer.—A woman at Mendlesham committed suicide by taking Battle's vermin killer. The substance was purchased from Messrs. A. and M. Cutting, grocers and drapers, whose assistant, one W. R. Ward, sold the vermin killer, but asked no questions and took no signature. He stated in evidence that he was rather busy at the time, and did not take any particular notice of her. He was in the habit of selling the vermin killer in the ordinary way of business. He kept no record of the sales, nor was it customary for him to put any questions to purchasers. The jury, in a rider, expressed the opinion that some restrictions should be placed on the sale of Battle's vermin killer at Mendlesham.

A Doubtful Case.—A man at Worcester, who was employed in a leather factory, died from supposed arsenical poisoning.

Attempted Suicides.—Laudanum and a liniment were taken by different persons with suicidal intentions, but the results were not fatal.

Inquest near Manchester.—An inquest was held at Moston, Manchester, on Tuesday last, into the circumstances attending the death of a five-year-old child. It appeared that the deceased had not been treated by a doctor, but was given some medicine known as "Jackson's Febrifuge."—The vendor and maker of the Febrifuge—Geo. Jackson, of 870, Rochdale Road—was called by the Coroner, but he declined to say what the mixture consisted of, except that it was a herbal remedy. He said that he had offered it to hospitals at cost price, adding that there would be no need to isolate any case if they made use of it.—The Coroner asked witness if he had not been in trouble before over the thing—had he not undertaken to treat a man who was suffering from virulent smallpox, and he died?—Witness said the man died from diarrhœa, and not from smallpox. He undertook to treat people because he had a knowledge of what he was doing. He had been a dispenser of medicine for over fifty years, and had a "pharmaceutical diploma." He was a registered chemist and druggist, but had not passed any examination, as he was in business before the Act of 1868. He had practised as an unregistered practitioner for twenty years.—The Coroner said that, in proper language, witness was a quack, and proceeded to read one of Jackson's pamphlets, which he said was worded to cure almost every disease on the face of the earth. It was described as a "physician itself," and as a cure for the most infectious diseases, such as smallpox, diphtheria, and scarlet fever. Continuing, the Coroner said that, in his opinion, Jackson was earning a dishonest living. He was one of those ignorant men whom nothing can convince. In his opinion, men like him did more mischief in the world than anybody else. There was not the slightest doubt that he had many deaths to answer for by his dishonest living. He was not satisfied with the case, and he did not think that the jury were either. The jury could form their own opinion about a man who placed such a preparation on the market, and who pretended to treat all kinds of serious illnesses with it. It was a common swindle, and he did not hesitate in saying so. A thing of this kind did incalculable harm amongst ignorant people. The preparation had a reputation which prevented people from getting adequate advice, and no doubt contributed largely to the spread of diseases by leading to improper diagnosis in infectious diseases. It was no doubt also responsible for loss of life, through patients not having proper treatment. This quack man held himself up to be entitled to prescribe for and treat cases, with no diploma and no education. He was an absolutely ignorant man, and it was perfectly scandalous that he should be allowed to go about and do a business of such a class. Moreover, he declined to say of what ingredients the stuff was made. The inquest was adjourned in order that the "Febrifuge" might be analysed and a post-mortem examination held on the body.

SCHOOL AND COLLEGE NEWS.

The New Prospectus of the London College of Chemistry, Pharmacy, and Botany has just been issued. This is an interesting little booklet, containing full particulars of the courses for the pharmaceutical examinations, and describing by means of illustrations the various class rooms and laboratories, and the botanical gardens at 323, Clapham Road, S.W. The terms for preparation for the Minor Examination are, for one term, nine and a-half guineas, and for two terms seventeen guineas For one term of instruction in the subjects of the Major Examination the fee is six and a-half guineas, and for two terms eleven guineas. The exact date of the commencement of the next term will be advertised in the Journal.

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

Wine Licence.—The Bolton County Magistrates have granted a wine licence to Mr. Frederick Oatley, chemist and druggist, of 41, Winter Hey Lane, Horwich.

An Inland Revenue Prosecution.—For adding sugar solution to beer after duty had been charged, the Blackburn Brewery Company has been fined £250 with costs, and the chairman of the company, Mr. Alfred Bottomley, of Halifax, was also fined £125 and costs.

Fire in Edinburgh.—By a fire which occurred recently in a cellar forming part of the premises occupied by Mr. David M'Laren, chemist, 42, South Clerk Street, Edinburgh, damage to the extent of several hundred pounds was done. The damage is covered by insurance.

Manchester Pharmaceutical Association.—Owing to a misunderstanding, it was stated last week that the Manchester Pharmaceutical Association would open its winter session in October, and the annual dinner would be held in November. The dinner will be held in October.

Physical Deterioration.—The Lord President of the Council has appointed a committee under the chairmanship of Mr. Almeric FitzRoy to make a preliminary inquiry into allegations that have been made concerning the physical deterioration of certain classes of the population.

Robbery by an Errand Boy.—On Friday, September 4, at the Mansion House Police Court, London, an errand boy was charged on remand with stealing twelve bottles of scent from his employers, Messrs. Hancock and Co., chemists, 128, Fleet Street, E.C. An order was made for the boy to go to a training-ship for four years.

New Book.—Smith, Elder and Co. announce a new book by Mr. Brudenell Carter, the well-known ophthalmic surgeon, who was in the Crimean War, is on the staff of the *Times*, was the representative on the General Medical Council of the Society of Apothecaries, and delivered the inaugural address to students of the School of Pharmacy a few years since.

Racehorse as Advertisement.—A novel form of advertisement is reported—from America, of course. A pill manufacturer in California, to advertise his goods, bought a noted trotting horse, changed its name to "Brakeson's Liver Pill," and has issued a challenge to race one of the champion trotters of the United States for £5,000. The challenge has been accepted.

Edinburgh Chemists' Golf Club.—The fourth competition this year for the Gibson Handicap Medal was played over the Braids during last week. The rough, wet weather prevented a good many turning out. Result:—1, Mr. George Robertson, 87-10=77; 2, Mr. C. F. Henry, 99-17=82; 3, Mr. H. D. Alexander, 84-1=83; 4, Mr. James Anderson, 104—20=84.

Naval Dispenserships.—A correspondent, referring to a note in a recent number of the *Pharmaceutical Journal*, points out that there are now nineteen dispensers in naval hospitals. Of these, six (including a supernumerary) are stationed at Haslar, four at Plymouth, two each at Malta and Chatham, and one each at Haulbowline, Bermuda, Jamaica, Hong Kong, and the Cape.

Sutherland Technical School.—On Tuesday last Lord Balfour of Burleigh, Secretary for Scotland, laid the memorial stone of the Sutherland Technical School at Golspie. It is proposed to give instruction in practical agriculture, commercial and scientific subjects to the children of the crofters and other residents in Sutherland, Ross, and Caithness, who have in the past laboured under great educational disadvantages, as compared with city populations.

Colds Cured in One Day.—The proprietors of "Laxative Bromo-Quinine Tablets" (the Paris Medicine Company) recently instituted proceedings against a firm which had infringed their rights. The action was successful, and it is intimated that similar proceedings will be taken against any persons infringing the Paris Medicine Company's rights in Grove's laxative bromo-quinine tablets, which are manufactured only by them. Fuller particulars appeared in last week's *P.J. Inset.*

Royal Masonic Institute for Boys.—A correspondent asks that members of the Pharmaceutical Society and other readers of the Journal who are Freemasons and have votes for the Royal Masonic Institution for Boys, will be good enough to give their support at the forthcoming October election on behalf of Charles H. S. Spencer, whose father, a chemist and druggist and Freemason, is unable to follow his employment in consequence of being afflicted with locomotor ataxy. The case is strongly recommended by a large number of brethren, and proxies will be received by Bro. C. Spencer, 15, High Lever Road, North Kensington, London, W.

The Lists of Jurymen.—The names of those persons liable to serve as jurymen in England and Wales for the current year will be exhibited on the principal door of every church, chapel, and other place of religious worship on the next two Sundays. The lists are open to inspection by everyone, and, unless objection is made to the overseers of the respective parishes by those who consider themselves entitled to exemption, whose names appear in the lists, the names will be returned to the Clerks of the Peace, and the persons scheduled therein will be liable to serve as special or common jurymen. Persons who are above sixty years of age are exempt, as are also pharmaceutical chemists, but it is necessary that they should claim exemption, if by any chance their names appear in the lists.

A Doctor's Mistake.—Dr. Westcott held an inquest at Hackney on Thursday, the 3rd inst., concerning the death of Ellen Christina Bennett, aged fourteen days. On the previous Monday the child appeared ill, so Dr. Abadjian was called in. When the father visited the surgery he was given a bottle of medicine for the child, labelled "One tablespoonful to be taken every two hours, August 31, Baby Bennett." The nurse declined to administer so large a quantity to so young a child, and sent the father back. The doctor then admitted that he had made a mistake, and that he ought to have labelled the bottle "One teaspoonful." Dr. A. T. Abadjian, of Clarence Place, stated that he was sorry he had the mistake, but he was in the middle of his surgery work at the time. "The mistake was made in the hurry of attempting to save a life." A verdict of death from natural causes was returned.

A Penny-in-the-Slot Directory.—The latest development of the penny-in-the-slot machine is a scheme whereby Kelly's directories will be brought within the reach of everybody in London and the suburbs. In all the principal streets a compact automatic box is placed containing a copy of the directory, which can be opened immediately upon the insertion of a penny in the slot at the top of the box. It is so arranged that for so long as the person using it keeps his hand on the cover of the directory it remains open for inspection, but immediately the hand is removed the book automatically closes. Outside each establishment where a directory is to be found a conspicuous red sign is being fixed indicating that the directory can be seen within. Messrs. Kelly are co-operating in the scheme, and it is understood that these automatic directories are already installed in Regent Street, Whitehall, Queen Street, Cannon Street, Poultry,, Bishopsgate Street, Ludgate Circus, Strand, Charing Cross Road, and Cheapside.

A Porter's Theft.—At the Bournemouth Police Court, on Tuesday of last week, Alfred Newbury, 19, a porter, of Parkstone, was charged with stealing a £5 Bank of England note and cheques, of the total value of £6, the property of his employer, Mr. John Harris Williams, pharmaceutical chemist, of Commercial Road, Bournemouth. The prisoner, it was stated, had been in the prosecutor's employ as porter for about a month. On Saturday, August 29, he was given £10 to bank and 10s. with which to buy goods. As he had not returned at half-past one o'clock, Mr. Williams went to the bank to see whether the money had been paid in or not. He found it had not, and later found the prisoner in the custody of the police on suspicion of being a deserter. He admitted then that he had the money. Prosecutor not wishing to press the charge, and it being known that at some time or other the prisoner had injured his head and was occasionally not responsible for his actions, the latter was bound over under the First Offenders Act.

National Physical Laboratory.—This laboratory, which was opened in March, 1902, has already accomplished much excellent work under the director, Dr. Glazebrook. The staff at Teddington consists of the director, with fourteen assistants and eighteen other employees. In addition to the initial work of the construction and installation of apparatus, many valuable researches have already been commenced or completed. An investigation into the properties of different thermometer glasses is said to give promise of excellent results. Arrangements have been made for the testing of chemical weights and of measuring vessels for technical and scientific purposes, and a considerable number of these, sent by various firms, have already passed through the tests prescribed. A test recently organised, which is being largely taken advantage of, is that of the various forms of test bottle used in the modern processes for the estimation of butter-fat in milk. This test has been carried out on a large number of these bottles of different kinds under the auspices of the Board of Agriculture. In addition to the departments of electricity, thermometry, metrology, chemistry, and metallurgy, there is an instrument-making shop, and a department of photometry and optics has recently been established.

The Fraud of the Label.—The correspondence which has been proceeding in the *Daily Chronicle* under the title "Do Tradesmen Cheat?" continues to drag its weary length along. It is very gratifying to find that there is at least one daily newspaper which has sufficient independence to publish letters from persons who are not financially interested in the advertising firms of manufacturers. Thus, one correspondent, more enlightened than most, is allowed to ask, "What of the honesty of the Press? Certain journals, at the best presumably of some large advertising firms, have endeavoured to prejudice public opinion in this matter. Anything on the other side they have resolutely declined to publish." He proceeds to point out that it is really the case of the small manufacturer against the large. The small manufacturer cannot command the immense resources in the way of advertising of his larger rival, nor has he to pay heavy dividends on inflated capital; what he can do is to manufacture as good, and probably, through more individual attention, a better article at a lower price. Even then, eleven out of twelve tradesmen will not venture to stock his goods unless it is absolutely demanded by their customers. The twelfth man who does take it up probably gets a trifle more profit than upon the semi-monopolist article, and earns it by his trouble and enterprise, but usually the bulk of the advantage goes to the purchaser. Another very cryptic letter, from a correspondent whose originality may be measured by the fact that the signature is "Pro Bono Publico," deals with the inferior medicine of "one of the largest cash druggists." At one such he bought at a branch shop a shilling bottle of quinine and iron tonic. As it tasted quite different from what he had previously, "Pro Bono Publico" sent it back, asking whether the medicine was fit to take or not. The assistant refused to express an opinion on medicine of their own make. He supposed it was all right; he could not say; it was just as received from headquarters, and he could not change it. "The question I would ask is, Have I been cheated out of one shilling? Such methods as these spell ruin to small shopkeepers." The inconsequence of the last sentence is remarkable. One would have thought that such methods "spelt ruin" to the "largest cash druggists."

The Confectioners' Exhibition.—There are, perhaps, few branches of industry which can afford to be independent of the chemist. Many of them owe much to that part of the science of chemistry which is practised by the pharmacist, and, whilst confectionery cannot in any way be said to be one of the trades allied to pharmacy, it is none the less true that the great improvements which have been made in the art of baking and in the manufacture of sweetmeats have for the most part either first been performed on an experimental scale in the chemist's laboratory, or, at any rate, the principles on which they are based have been laid down by the scientist. Viewed from this standpoint, the eleventh annual international exhibition and market of the confectioners, bakers, and allied trades, held in the Royal Agricultural Hall, and opened on Saturday of last week, is worthy of a note in these columns. There are few exhibits which are in themselves of especial interest to pharmacists; several firms, however, are represented whose manufactures are serviceable alike to the chemist and the confectioner. The London Essence Company, of Camberwell Green, London, E.C., have a businesslike and varied display of those essential oils on which the cook depends to flavour the pudding. One of the most recent productions of this firm is a "light" oil of cloves, especially recommended to confectioners and perfumers. The specific gravity of this oil is 1·020, whilst the minimum required by the B.P. is 1·050. Lemon oil, both the ordinary and the terpeneless, as well as numerous floral ottos, are a few of the large variety of articles on sample at the firm's stand. Messrs. Farrow and Jackson, Limited, the well-known firm of manufacturers of soda-water engines and fountains, of 16, Great Tower Street, London, E.C., are displaying all kinds of machinery for the production of aërated waters. Young's Patent Hygienic Bin Company, 72, Mark Lane, London, E.C., have on display a large assortment of hygienic steel bins, which articles have been adopted to some considerable extent by chemists. The great advantage of the bin is that it has no crevices in which powder can lodge and become mouldy. Messrs. Stiles, Limited, of Gray's Inn Road, London, E.C., are, as is usual at trade exhibitions, well represented, and their fountains are the source of attraction both to sightseers and customers. Messrs. J. Defries and Sons, Limited, 147, Houndsditch, London, E.C., are showing numerous kinds of Pasteur (Chamberland) Filters, which, it appears, are now in common use in bakehouses. Messrs. C. Baker and Sons, of City Road, manufacturers of mixing and other machinery; Messrs. Ajax, Limited, artistic printers; and Mr. T. O'Brien, of check-till fame, are also among the exhibitors.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. A. W. Gedge, M.P.S., has been elected for the third time as Master of the Malvern Link Lodge of the National Conservative League.

Messrs. J. and W. Bygrave, shopfitters, late of Hoxton, where they have been established for over thirty years, have removed to more central and commodious premises at 289, City Road, London, E.C.

Mr. Henry Roberts, J.P., one of the managing directors of Messrs. Joseph Crosfield and Sons, Limited, soap and chemical manufacturers at Warrington, gave evidence before the Joint Select Committee on Municipal Trading. Mr. Roberts, whose evidence was taken on July 16 last, was chiefly questioned with regard to the Warrington Slate Company, Limited, of which company he is chairman.

TRADE NOTES.

Tablets.—Messrs. J. Timpson and Co., of 104, Golden Lane, E.C., direct the attention of the trade to the chocolate-coated tablets manufactured by the Upjohn Pill and Granule Company of New York. They are supplied in neat cardboard boxes, with special labels printed according to customers' instructions, with own name if desired. The tablet has been largely sold as a "one-day cold cure," and bears a good margin of profit.

Vinolia Company, Limited.—The little illustrated booklet containing descriptions and prices of Vinolia Perfume Caskets has just been issued, and a copy will be forwarded to any reader of the Journal who makes application to Malden Crescent, N.W. The list includes, among a number of very handsome novelties, illustrations of a new quadruple series of concentrated essences. Each perfume in connection with this series is enclosed in an artistic decorated outer box with a design corresponding with that used on the bottle label. These perfumes should command a very ready sale.

Allen and Hanburys, Ltd.—"A Blood-forming Digestive Tonic Nutrient" briefly indicates the properties of Byno-Hæmoglobin, a preparation manufactured by the above firm. It is a combination of the pure freshly separated hæmoglobin with bynin without the addition of iron in any other form, and free from all injurious preservatives. It contains 20 per cent. of soluble albuminoids, and 23 per cent. of maltose, and is especially recommended on account of its nutritive value. Byno-hæmoglobin has, we understand, found favour with the medical profession, and is likely to be ordered in prescriptions.

The Ideal Bottle is an article which has recently been put on the market by the manufacturers of the well-known "Practical Poison Bottle." It is of a shape which, whilst being original, has for its foundation the form of perhaps the oldest style of bottle in existence—the round shoulder; the improvement consists of the arching of the shoulders and the octagonal sides. The bottle is made in white flint, amber and actinic green glass, both for corks and stoppered with white glass globe stoppers. It is suitable for a variety of purposes, and the price of it is reasonable. This bottle can be recommended to chemists on account of its attractiveness, simplicity and cheapness, and is especially adapted for specialties and other preparations which it is desired to display on the counter or in the window. An illustration will be found in the advertisement pages, and orders should be sent to the wholesale houses.

IRISH PHARMACEUTICAL JOTTINGS.

The Election to the Council of the Irish Pharmaceutical Society takes place in October. Of the seven outgoing Councillors, six have expressed their intention of again seeking election. For the seventh place, Dr. J. A. Walshe, L.P.S.I., of Dublin, a former member of the Council, who retired from that body some time ago, has consented to stand. It is understood that a strong effort will be made to induce Mr. George Beggs to retain the presidency of the Society.

The Alleged Miscarriage of Justice at the Ballinasloe Petty Sessions has received attention outside the Council Chamber at Lower Mount Street. A correspondent of the *Irish Times* has pointed out the mistake on the part of the magistrates in encouraging unqualified traders to come over from England and sell broadcast poisonous sheep-dips and other substances of whose ingredients they know nothing. The writer points out the hardship inflicted on qualified Irish chemists. The undoubted fact that Cooper's Sheep-Dip is not a "patent medicine" is also forcibly emphasised.

COMPANY INTELLIGENCE.

Cooper, Walton and Co., Limited.—Registered September 2. Capital, £2,000 in £1 shares. Object, to carry on in England or elsewhere the business of chemists and druggists' sundriesmen, etc.

LONDON GAZETTE NOTICES.

PARTNERSHIPS DISSOLVED.

Edward Harvey Limbert and Frederick George Hall, dental surgeons, 417, Holloway Road, London, N. Debts will be received and paid by F. G. Hall.

George Hearn and William Henry Benton, mineral water manufacturers, 26, Market Place, Romford.

Edmund Douglas Wardleworth and Isaac Wellwood Johnson, physicians and surgeons, Bury. Debts will be received and paid by I. W. Johnson.

RECEIVING ORDERS.

Samuel Richard Matthews, medical practitioner, Dyndor House, Harwich.

William Griffith Morgan, mineral water manufacturer, Nantyglo, Monmouthshire.

VETERINARY NOTES.

Veterinary surgeons have followed very closely on the lines of the medical profession by making advertising "conduct disgraceful from a professional point of view," while dentists, with a somewhat later Act of Parliament, have but partially curbed the advertiser, and wholly failed to prevent a new and prodigious host of quacks (financed by the sons of Israel) from capturing the bulk of the artificial tooth business. The word "veterinary" is jealously guarded, and blacksmiths have been penalised for using the words "veterinary forge." An attempt was made by the R.C.V.S. to prevent pharmacists from describing themselves as "veterinary chemists," but this failed, it will be remembered. Practitioners of the profession of doctoring animals find it inconvenient to be debarred from a respectable announcement, and the result is what is known as "oblique" advertisements. Young professors, with their names to make, go into the country and lecture on some well-worn theme, and the local newspaper reporter writes up a grand discovery to the credit of the visitor. Smaller men, pleading the cause of kindness to animals, secure the insertion of letters in the papers anent the cruelty of allowing dogs to follow cycles and motor-cars. There would seem to be only a choice of evils in this matter, but readers will have observed how the exclusiveness of the veterinary profession, or something else, has led to the enhanced position of the veterinarian in a single generation. The cow leech has disappeared, the dispensing chemist no longer suppresses a smile at the crude "receipts" brought him for dispensing; but what of his own status? With an ever-increasing scientific standard of attainment, has he reaped corresponding advantages? Has the poor position of the dental profession any relation to the vulgar advertising so common? Is pure pharmacy degraded by the shop window filled with artificial frogs or cats on a tree stump? Well-wishers of what ought to be the pharmaceutical profession may ask themselves what has made the vet. go up, if they are unwilling to acknowledge that the chemist has gone down? All the professions have higher curricula. It isn't that, then, which has elevated the vet. in public esteem; he had a long curriculum before he could pass as a M.R.C.V.S. for many years prior to the Act of Parliament which made such course of study compulsory. With a status so unsatisfactory, it is surprising that chemists hold aloof from the Pharmaceutical Society, through whose aid alone any improvement appears possible.

Parasitic Inflammation of the Fourth Stomach in Ruminants.

For some time past investigations have been pursued with a view to discovering some remedy for the malady known as "Lincolnshire lamb disease," but not confined to lambs or to Lincolnshire. Cattle as well as sheep waste away when infested with these parasites (*Strongylus gracilis* and *S. convolutus*). These are so small as to be invisible to the naked eye, and they are only to be found in the mucous membrane of the abomasum, or fourth stomach. Their effects are seen before any proof of their existence is manifested. The host does not lose appetite until the last stages of the malady, but is usually voracious while wasting rapidly. Not an atom of fat remains in any part of the animal, and the blood is very thin and pale in colour. Those remedies which prove effectual parasiticides in the case of the ascarides and of the tæniæ are apparently useless with these strongyles, and the much-vaunted new remedies for the *Strongylus tetracanthus* have proved equally ineffectual. Professor M'Fadyean says, in his annual report of the Royal Veterinary College, that "recent attempts to effect a cure have been no more successful than the earlier ones," and instances the case of a heifer sent to the Royal Veterinary College for experiment, in which "half an ounce each of thymol and chloroform dissolved in equal parts of warm methylated spirit and water was administered by means of the stomach-pump." A further dose of one ounce of thymol was given without effect, and, having reached the paralytic stage of weakness, she was destroyed, and the diagnosis fully confirmed by post-mortem examination. There is no doubt that this malady is often mistaken for tuberculosis, although there is no excuse for a practitioner doing so, as auscultation and other means should enable one to distinguish in almost all cases, and while diarrhœa is but an occasional symptom of tuberculosis, it is constant in the parasitic disease. Appetite and general appearance of health are maintained, save for the one special symptom of general atrophy. Those readers living in districts affected by the husk worm (*Filaria bronchialis*) and the persistent tetracanthus (*Strongylus*) will have heard much laudation, through the agricultural papers, of thymol as a remedy, and should be told that the experiments conducted at the various veterinary colleges have proved its inutility. While waiting further light upon the subject of parasitic invasions of the kind more especially alluded to here, we may advise our clients to manure freely with salt in spring and autumn, in the hope of destroying the nurses, or intermediary bearers, which in the case of the husk worm and of the *Strongylus tetracanthus* pass their intermediate life in low-lying wet lands and the margins of stagnant pools. This much we do know, that chloride of sodium in contact with all the round worms and in any but the most dilute state is inimical to the life of the tapeworm, which from time to time do such serious damage to farm stock. Experience has shown, too, that tonics of the mineral and bitter vegetable varieties have the effect of keeping down parasitism while enabling the hosts to outgrow or survive the effects of their enemies.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

General Markets.

London, Thursday, September 10, 1903.

No improvement in the Drug and Chemical Markets is as yet visible. Fluctuations during the week have been rather more numerous than for some time past, but business is as quiet as ever. Following on the moderate shipments of Bark and the Amsterdam Auctions, German makers have raised the price of Quinine by 1d. per oz., and for 1,000-oz. lots in bulk the rate per oz. is now 1s. 1d. In the second-hand market the price is also firmer, though few transactions are recorded. Quicksilver is again reduced, and in consequence manufacturers of mercurials have lowered the price of these preparations. Despite the recent serious developments in the Near East, the price of opium remains unchanged. This apparently anomalous circumstance may be explained to some extent by the fact that needy holders have been forcing their stuff on the market, and the quantity thus offered has been taken up by American buyers. When these, what might be termed, forced sales come to an end prices should advance, and if the struggle should continue or become more fierce there is no saying what might be the results of a great difficulty in putting in the autumn sowing. Persian Opium is very firm, owing to the increased value of silver, which is the purchasing medium in the country of production. The price of Persian Opium, for good quality, is now 10s. 6d., which will, of course, enhance the price of manufacturing stuff for morphine purposes. So that we see no prospect of lower prices so far as Opium or its Alkaloids are concerned. Cascara Sagrada has not advanced in price; in fact, a few days ago it seemed very flat, owing to reports from San Francisco, but it now seems likely that the value will increase still further. Rumours of an epidemic of yellow fever in Mexico have sent up the price of Mexican Sarsaparilla; Hydrastis Root and Shellac are also dearer. These are the only changes of note that have occurred since we last reported.

ACID CITRIC.—1s. 1d. per lb.

ACID TARTARIC.—English, on the spot, 1s. 1½d.

ARROWROOT.—Sales of St. Vincent have been made during the week at 2d.

BISMUTH CARBONATE.—8s. 1d. per lb.; subnitrate, 7s. 4d.

BORAX.—Crystals, 13s. 6d. to 14s. 6d. per cwt., according to quantity; powder, 15s. 6d. to 16s. 6d.

BROMIDES.—There is no alteration in the market price.

CALUMBA ROOT—Is inquired for, but there is not much offering; 14s. is the lowest price at which this is available.

CAMPHOR.—Bells, 2s. 3d. per lb.; blocks, 2s. 3d. to 2s. 5d. per lb., according to weight of blocks and quantity; flowers, 2s. 2d.

CARBOLIC ACID—Steady. Crystal, 39° to 40° C., 5½d.; crude, 60° F., 1s. 7d.; liquid, 95 to 98 per cent., of pale straw colour, 1s. 2d. per gallon.

CASCARA SAGRADA—Is rather flat. Buyers have been holding back owing to reported offerings from San Francisco, and consequently it may be said to be nominally lower at 90s. to 95s. With higher prices both in San Francisco (at 100s. c.i.f., and there is very little to be had at this price) and New York (105s.), a reaction in an upward direction is anticipated.

CASTOR OIL—Quiet. Values are unaltered.

CHAMOMILES—Are arriving more freely; and it would be possible to buy good quality at 47s. 6d. to 55s.

CLOVES.—At the spice sales all the offerings were held.

CREAM OF TARTAR—Rather easier. Little business is doing; 98 per cent. foreign powder 88s.

ERGOT OF RYE—Is firm at 1s. 4½d., c.i.f.

GINGER.—At Wednesday's spice auctions there was little demand. A small quantity of inferior quality Cochin sold at normal rates. Jamaica was also slow of sale; a few barrels of good bright little mouldy realised 45s.

GLYCERIN.—£3 8s. per cwt. for ½-ton lots. During the eight months ending August 31, 42,854 cwts. of glycerin were imported into the United Kingdom, and 107,302 cwts. were exported.

HYDRASTIS ROOT—Is again dearer. Sales have been made at 3s. per lb. on the spot, and there is very little obtainable.

IODIDES, IODINE, AND IODOFORM—Are unchanged.

MENTHOL—Is weak. 21s. to 21s. 6d. is the nominal price; offers have been made at lower rates.

MERCURIALS.—Following on the reduction in the price of quicksilver, the compounds of mercury are again lower. Calomel, 2s. 8d.; corrosive sublimate, 2s. 4d.; red precipitate, 2s. 11d.: white precipitate, 2s. 11½d.; mercuric sulphate, 2s. 4d. per lb. The above are Messrs. Howards and Sons' quotations.

MORPHINE HYDROCHLORIDE AND CODEINE—Are both unaltered; the price of the former is 4s. 6d. to 4s. 8d., and of the latter 10s. per oz.

NUTMEGS.—A few bags Penang sold at the spice auctions at firm prices, 63's at 2s. 7½d., 66's at 2s. 5d., 80's at 1s. 10d. West Indian 70's mixed dark realised 1s. 8d.

OIL OF STAR ANISE—Firm, at 4s. 3d. to 4s. 4d., according to holder.

OPIUM.—Turkish is quiet and unchanged. Persian is firm, and the price for good quality is 10s. 6d. Further reference to these articles will be found in the introduction.

PEPPERMINT OIL—Is firmer. HGH is quoted 11s. 9d., whilst for American oil in tins, from 9s. 6d. to 10s. 6d. is asked.

PIMENTO—Is dearer; some private sales of good fair are reported at 3½d.

QUICKSILVER has been reduced to £8 7s. 6d. The following is the monthly statement issued by Mr. Alexander S. Pickering:

Imports.	1903.		1902.		1901.		1900.
August—Bottles	90	..	500	..	678	..	901
January to August—Bottles	33,781	..	32,159	..	33,811	..	5,309
Exports.							
August—Bottles	962	..	1,016	..	2,246	..	1,404
January to August—Bottles	13,878	..	15,043	..	18,305	..	14,785
AVERAGE PRICE.							
	1903.		1902.		1901.		1900.
August........................	£8 11 0		£8 15 0		£9 0 0		£9 5 0

QUININE.—No sales of consequence are reported. Makers of German brands have raised the price to 1s. 1d. per oz. The price quoted in the second-hand market for B&S and Brunswick sulphate is now 1s. per oz. During the eight months ended August 31 last, 348,535 oz. of quinine and quinine salts were imported into this country, being a little more than one-third the quantity imported during the corresponding period of last year. 510,773 oz. were exported—this was a slight increase on last year. Howards' sulphate, in vials, is quoted at 1s. 4d. to 1s. 5d. per oz., according to quantity.

RADIUM—Is firm at £12,000 per oz.; the demand, however, is not large.

SARSAPARILLA.—Mexican is dearer. Yellow fever is said to be raging in Mexico, and therefore it is expected to go much dearer still. 5½d. is the spot price.

SHELLAC—Is again higher; fair TN orange 166s.

SODIUM BICARBONATE.—£7 5s. per ton, landed. Howards', 45s. per cwt.

UNITED KINGDOM IMPORTS AND EXPORTS.—During the month ended August 31, chemicals, drugs, dyes, and colours, to the value of £671,466, were imported into the United Kingdom, as compared with £676,861 during the corresponding period of last year. The value of these articles exported during last month was £969,501, an increase of £53,444 on August, 1902.

Foreign Markets.

CHEMICALS IN BOHEMIA.—The manufacture of chemicals is largely carried on throughout Bohemia, and the trade with the United Kingdom has increased from 1,504 tons, worth £49,333, in 1897, to 4,076 tons, worth £130,000, in 1902; the imports from the United Kingdom during this period also increased from 554 tons, worth £50,750, to 823 tons, worth £59,967.

COCHINEAL V. GERMAN CHEMICAL DYES.—Consul Richards, in his report on the trade of Damascus, states that cochineal costs three times as much as the artificial substitute imported from Germany, but the colour obtained from it is practically everlasting, while that which is artificially produced both runs and fades. Hence it happens that in fabrics dyed in red and other stripes, the use of cochineal is imperative. Cochineal, he states, was cheaper than usual last year, owing to the abundance of the supply. In regard to artificial dyes generally, Consul Richards remarks that Germany has struck out a new line for herself, which promises to be a profitable one, so far as Damascus is concerned.

RUSSIAN CHEMICAL MANUFACTURERS COMBINE.—The native producers of alkali and bleaching powder have lately combined to defend their interests. This combination has resulted in the diminution of the importation of these chemicals into Russia, the syndicate being at the same time supported by the high duties imposed on the chemicals in question. It cannot be said that the industry is in a flourishing condition in Russia. The principal demand for them comes from the petroleum refiners at Baku, and is to a certain extent dependent on the great fluctuations of price of the latter product. Sodium is produced in Russia by the ammonia and Leblanc process, and within the last few years large establishments have sprung here into existence for working also by the electrolitic process. There are, however, buyers who for certain purposes are prepared to pay a higher price for a pure article of British origin.

THE FISCAL INQUIRY AND THE COLONIAL TRADE.—In view of the inquiry into the fiscal policy of this country, the following particulars, which are abstracted from the Board of Trade report on the trade of British Colonies with foreign countries, are of especial interest. The figures show the value of drugs, chemicals, etc., imported into the various colonies from foreign countries during one year. In some cases the period in question is the year 1901 and in others the year ending June, 1901, or March, 1902:—British India, £166,000; Australian Commonwealth, £393,000; New Zealand, £43,000; Cape of Good Hope, £61,000; Dominion of Canada, £515,000; Jamaica, £8,000; Barbados, £4,000. Into the Straits Settlements Areca Nuts to the value of £210,000 were imported during one year, into Mauritius apothecaries' wares, value £10,000, and soda (caustic and nitrate) to the value of £17,000; and Jamaica obtained £5,000 worth of soap from foreign countries.

PATENTS AND TRADE MARKS.*

New Patent Applications.

INHALERS (No. 21,789, of 1902).—J. N. McKim, 163, St. James Street, Montreal, Canada. Relates to inhalers wherein a series of receptacles or bottles is employed, and has for its object, first, to enable communication to be effected between the various bottles without the means of communication being exposed; second, to adapt the cork to be carried by or carry, and render airtight, the open ends of said bottles; and, third, to adapt the device to cause an expectorant and a healing drug or mixture to be emitted simultaneously therefrom. Consists, briefly, in constructing a cork with a series of channels or ducts in the interior of its substance, making communication between a series of bottles.

A BAND OR NECKLET FOR RELIEVING PAIN DURING DENTITION BY THE ABSORPTION OF DRUGS CONTAINED THEREIN (No. 23,127, of 1902).—C. E. W. Montgarry, 2, Woodthorpe Road, Ashford, Middlesex. Consists of a bag made of silk or any suitable porous material which contains the following ingredients:—Hyoscyamus, 10 per cent.; sulphur, 82½ per cent.; borax, 5 per cent.; and boracic acid, 2½ per cent. The bag is passed around the patient's neck, and the absorption of the ingredients therein causes an enlargement of the pores of the gums, rendering dentition painless, preventing convulsions, and stopping salivation.

MANUFACTURE AND PRODUCTION OF PHARMACEUTICAL COMPOUNDS (No. 23,988, of 1902).—H. E. Newton, 6, Breams Buildings, W.C. (a communication from the Farbenfabriken vormals Friedrich Bayer and Co., Elberfeld, Germany). The inventors have found that the hitherto unknown alkaline salts of methylene citric acid possess a great therapeutic value. The process consists in treating methylene citric acid with alkalies such as $NaOH$, KOH, NH_3, Na_2CO_3, $KHCO_3$, or the like, and then precipitating the resulting alkaline salts by means of alcohol. Said salts are the first known readily soluble compound of neutral reaction which are capable of splitting off formic aldehyde, being, therefore, valuable remedies for internal therapeutics, *e.g.*, for disinfection of the urinary passages or the like.

NOTE.—Opposition to the grant of any of the above-mentioned patents must be filed at the Patent Office, on or before October 12, 1903.

New Trade Mark Applications.

"**ANDROTINE**," for a chemical substance for cure of dry rot in wood, by C. Sangster, 48, Northgate Street, Chester. 253,207.

"**TYO**," for chemical substances used in photography, by F. S. Wells, Clematis Villa, Avenue Road, Southgate, N. 254,394.

"**SUBLIMIS**," and device of unicorn's head and star, for a preparation used for sanitary and veterinary purposes, for vermin destroying, etc., by A. Davin et Cie., 20, Rue de la Liberté, Marseilles, France. 253,006.

"**ANTISOR**" label (device of cat's head in shield), ("Antisor" disclaimed), for a curative ointment for skin diseases of horses, by J. Butterworth, 78, Artillery Street, Blackburn. 255,808.

"**GLYRAX**," for soaps of every description included in classes 2 and 3, by H. Heaton and Co., Springfield Soap Works, West Bowling, Bradford. 256,335-36.

"**LEGION**," for chemical substances used for agricultural, etc., purposes, by Co-operative Wholesale Society, Limited, 1, Balloon Street, Manchester. 256,376.

"**ARGYROL**," for chemical substances prepared for use in medicine and pharmacy, by Barnes and Hille, 24, North 40th Street, Philadelphia, U.S.A. 255,098.

"**PHOSPHOIDS**" ("Phospho" disclaimed), for medicated lozenges or tablets, by G. J. Craven, 1, Ilminster Gardens, Lavender Hill, S.W. 255,779.

"**OPTOCINE**," for chemical substances prepared for use in medicine and pharmacy, but excluding cod liver oil and preparations thereof, by H. S. Wellcome, Snow Hill Buildings, Holborn Viaduct, E.C. 255,906.

"**BAILEY'S TASTELESS APERIENT PILLS**" and signature. Signature only claimed for pills, by C. Bailey, 53, Upperton Gardens, Eastbourne. 256,026.

"**CARRAGOL**," for medicine for human use, by J. Winter, "Torrisholme," Roumania Drive, Llandudno. 256,234.

"**ASUROL**," for a pharmaceutical product, by Farbenfabriken vormals Friedrich Bayer and Co., 27, Koenigstrasse, Elberfeld, Germany. 256,262.

"**BRACINE**," for a medicinal preparation, by R. R. Wrench, 6, Rood Lane, E.C. 256,411.

SPHINX DEVICE, for philosophical instruments, scientific instruments, etc., by J. S. Buman, 20, Maxilla Gardens, W. 255,076.

ACORN DEVICE, for philosophical instruments, scientific instruments, etc., by G. Scott, 21, Southampton Row, W.C. 256,519.

"**SYL**," for surgical instruments and surgical appliances made of indiarubber, etc., by The British Seamless Rubber Co., Limited, Junction Street, Bidder Street, Canning Town, E. 255,997.

"**ANOLA**," for toilet jelly, toilet cream, etc., by D. L. Lewis, 36, Haven Green, Ealing, W. 255,444.

"**ADORA**," for hair-wash, toilet soap, etc., by E. D. Foster, 50, Bishopsgate Street Within, E.C. 255,998.

"**ANTILARIA**" ("Anti" disclaimed), for perfumery, etc., by E. Cook and Co., Limited, Bow, E. 256,449.

NOTE.—Opposition to the registration of any of the above-mentioned trade marks must be filed at the Patent Office, on or before October 9, 1903.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and Patent Notes for Inventors' free on application.

Sixty Years Ago.

From the PHARMACEUTICAL JOURNAL, Sept., 1843

COMPETITION IN THE DRUG TRADE.

The business of a chemist and druggist is a link between a trade and a profession. He (the chemist and druggist) must (if qualified) have a liberal and scientific education. His stock comprises a very long list of substances, many of which undergo tedious and expensive processes in the course of their preparation; his returns are so small, especially those which are derived from dispensing prescriptions, that unless his profits were much larger than that of the grocer he could not even pay the expenses of his establishment. In dispensing prescriptions, his time and labour must be considered a part of his "stock in trade"; and any calculation of profit in which these items are not taken into consideration is fallacious. The average price which should be charged for a mixture or a box of pills cannot be estimated by calculating the price per pound or per hundredweight of the several ingredients, but must include a fair amount of remuneration for the manipulations required, and the labour of acquiring the needful dexterity. Even in the retail department, the qualified chemist is entitled to receive a compensation for his skill and experience in selecting or purifying the articles for the good quality of which he is responsible; and since his customers are unable to test the purity of drugs' and consequently obliged to trust to his superior judgment, they are in general, when the facts of the case are understood, quite willing to pay the extra price which in fairness he demands.

But when the grocer invades the province of the druggist, he does so in his capacity as a grocer, without any pretensions to a scientific acquaintance with the properties of drugs. In regulating his charges he allows himself the same proportion of profit which he finds to answer his purpose in the sale of grocery, or in some cases even less, hoping to increase the number of his customers for other goods by contrasting his charge for drugs with those of the regular druggist. On the same principle he sells sugar at little or no profit, as an inducement to his customers to buy tea, which makes up the deficiency. This is called "baiting with a sprat to catch a herring." . . . The indiscriminate sale of drugs by unqualified persons would produce much less injury to the credit and interests of the regular druggists if the public had the means of forming a correct estimate of the value of the articles they purchase and of the qualifications of the parties concerned. But, unfortunately, not only is every grocer and oilman a druggist, but almost every druggist is a grocer and oilman. The druggist has no badge or credentials to designate his superior qualification; in fact, he is not *of necessity* more qualified than the grocer. The blue and red bottles in the windows are common to all, and this is the criterion understood by the public as indicating what is called "a doctor's shop."

So long as the chemists and druggists continue to occupy this anomalous equivocal position, they cannot expect either the rank or the emolument which ought to belong to their avocation. It is true that the exercise of the functions requires a liberal and scientific education, as well as practical experience. It is true that many of them possess these requisites; but it is equally true that others, who call themselves chemists, are no more entitled to public confidence than those parties whom they denounce as unqualified. This, then, is one of the chief sources of the evil—namely, that those who have subjected themselves to the labour and expense of a proper education are deprived of the rank which they ought to enjoy in the public estimation, because they are not sufficiently distinguished from the illiterate.

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

The Major Examination and Post-Graduate Courses.

The proposals recently brought forward at a meeting of the Council of the Pharmaceutical Society with reference to the division of the Major Examination and the institution by the Pharmaceutical Society of post-graduate courses of instruction in various subjects outside the ordinary pharmaceutical curriculum, appear to me to reopen the whole subject of the training and education of the pharmacist.

Suppose a man wished to take up photography, optics, the analysis of urine or of water, the chemical and microscopical examinations of food, drugs, fabrics or raw materials, soils and manures, or to investigate the diseases of plants, what sciences would he require to study? Why, of course, chemistry, physics, and botany. But these are the very subjects the pharmacist is supposed to have studied. Not only so, but he is supposed to have had a practical training in the application of these sciences to the chemical and microscopical analysis of drugs, and therefore ought of all men to be the one most fitted to take up the study of any of these special subjects at one of the many good technical schools or university colleges which now exist in every part of the country. He ought, in the very nature of things, to possess a distinct advantage over other men, if his training in science has been at all worthy of the name.

Yet what do we find? The average Minor man is incapable of utilising his scientific training or of applying his knowledge in any useful or practical manner. Why? Because he has in most cases studied merely to pass, not to know, and he does not know, as a rule, three months afterwards those sciences he has studied, and is certainly unable to apply his knowledge in any useful or profitable manner, even if the opportunity offered. His training lacks thoroughness and utility. This Mr. Glyn-Jones realises, but his method of remedying it by the institution of post-graduate courses is putting the cart before the horse. He is beginning at the wrong end, as specialised scientific work cannot be built up on the scrappy and insufficient knowledge of science which the ordinary pharmacist possesses.

Does his study of physics, for instance, enable the Minor man to take the optician's qualification with ease? No; he must go over all the mathematics and physics as if he were a novice, hence the ordinary optician who is not a chemist has a better knowledge of physics, because a mathematical one, than the ordinary chemist and druggist who is not an optician. Now, if the Minor candidate had even an elementary knowledge of physics, such as that of the alternative physics' course of the Science and Art Department, it ought to be comparatively easy for him, on passing his qualifying examination, to obtain the optician's qualification without the institution by the Pharmaceutical Society of any special post-graduate course of study.

The moral would therefore seem to be: "Do not attempt to erect fancy structures on insecure foundations." Let the Pharmaceutical Society first remedy the existing unsatisfactory system, or, rather, want of system, of training pharmacists.

When it has done that—which, after all, is its *raison d'être*—when the average Minor pass has risen from 25 per cent. to 75 per cent., it will be quite time enough to exploit fresh fields outside pharmacy proper. I think it has been clearly demonstrated that the present system of forcing candidates to learn certain subjects by continually increasing the severity of the examination is a complete failure, and some other method might now be tried. Dr. Attfield conclusively proved this more than twenty years ago. Professor Huxley, speaking on the same subject, said:—"Candidates for such examinations work to pass, not to know, and outraged science takes her revenge. They do pass, and they don't know." Professor Pope of the Manchester Technical School, stated that the pharmacy students who attended the chemistry classes at one of the large London technical colleges were always regarded as unsatisfactory. It appeared to be their ambition to get through the qualifying examination and then finish with chemistry.

If there is a desire on the part of pharmacists for post-graduate courses of instruction, these would be best carried out not by the Pharmaceutical Society directly, but through the medium of the local pharmaceutical associations, acting in conjunction with the technical schools and university colleges in their districts. The Manchester Chamber of Commerce and the Bankers' Institute have, in consultation with the Owens College, instituted special evening courses in commercial law and the principles of banking, the lectures being delivered in the rooms of these institutions. The fee to non-members is 10s. 6d., and prizes ranging in value from £5 to £30 are offered. Were local associations to take in hand work of this sort it would tend to infuse fresh life and interest into their proceedings, and no difficulty need be experienced in arranging suitable courses. A three years' graduated course in chemistry has always been conducted in the evening at Owens College for the benefit of those who wish a thorough training in this subject. The Manchester Technical School offers an evening course in optics for those who wish to prepare for the optician's qualification. Special courses in botany and microscopy can be had at either institution. The Victoria University confers a degree in agriculture, which includes the study of agricultural botany and chemistry, veterinary science, and bacteriology applied to farm and dairy work. A three months' course in practical bacteriology is held both in the winter and summer sessions in the Medical School, and has been attended by a few pharmacists in this district. The hours are from three to five p.m., twice weekly. The institution of a degree in science where "pharmaceutics" would be accepted as one of the three subjects for said degree would soon be an accomplished fact if the necessary interest and support on the part of pharmacists were forthcoming. Both "education" and "commerce" are now optional subjects for degrees in the Victoria University, and if bankers and business men, who make no pretence of scientific attainments, are instituting courses for commercial certificates, and, in the case of those who can afford three years, a degree in commerce, surely pharmacists will take advantage of the unique opportunity now offered of affiliating themselves with the reconstituted Victoria University of Manchester.

With regard to the division of the Major Examination, I think the proposed change calculated to popularise that examination, but I think the Major should simply be a higher examination in materia medica and pharmacy, the subjects of botany and chemistry being made subsidiary to these. Why should the Pharmaceutical Society examine in chemistry and botany of B.Sc. standard, and what useful pharmaceutical purpose is served by doing so? Everyone must admit that the subject of practical pharmacy is treated in a very scrappy manner in the Minor Examination, and the Major might well include a more extended knowledge of practical pharmacy than is possible in the Minor. Processes involving desiccation, extraction, evaporation, and distillation in their application to the preparation of tinctures, fluid extracts, and so forth could be dealt with, while the preparation of tablets, capsules, scale and effervescing compounds, lozenges, pastilles, etc., might be taken up. The proposed "Martindale Pharmaceutical Laboratory" would be the very place for this work, and a more fitting memorial could not be had. An examination of this nature would remove the reproach that the Major man was too theoretical and scientific, and give a real value to that examination which would do more than anything else to make it popular and raise it in the estimation both of pharmacists and of medical men. I would, therefore, suggest the following re-arrangement and division of the Major Examination:—

I. Materia medica, with organic chemistry and botany, the practical work to include (*a*) the microscopical examination of crude drugs and their powders; (*b*) the assay and examination for purity of B.P. drugs and their preparations.

II. Pharmacy, with chemistry and physics, the practical work to include (*a*) practical pharmacy (as described); (*b*) the assay and examination for purity of B.P. drugs and their preparations.

The subject of physics cannot be dissociated from pharmacy. Drug mills, hydraulic and screw presses, apparatus for filtration by suction or by pressure, and the general application of steam to pharmaceutical apparatus cannot be understood without a considerable knowledge of physics. Practical pharmaceutical chemistry to be required of all candidates, and for that matter the chemistry might be described as pharmaceutical chemistry in both sections. This is the legitimate sphere of the Pharmaceutical Society, and it might leave optics, photography, the analysis of food, water, urine, etc., to the technical schools and universities, although it might encourage the study of these subjects on the part of its members and associates through the local pharmaceutical associations.

JAMES GRIER.

Owens College, Manchester, September 1, 1903.

May I be allowed to make one or two comments on Mr. Marsden's letter? With the reduction in the number of Major Examination subjects I am not greatly concerned. The value of the diploma in after life is much over-estimated; the chief advantage it confers on its possessor is exemption from jury service. One becomes wearied of the constant reiteration of the ideas such as are expressed by Mr. Marsden concerning the scope of a chemist's business, ideas which are often ventilated either by men who are not in business at all, or by men who, having one or more successful proprietaries, are hence somewhat independent of their general chemist's business. I, for one, should have much more faith in such theories if one of these gentlemen, say Mr. Marsden himself, would put them to the test by going into business, and at the end of about five years tell us how a chemist's business should be conducted. I am of opinion that long before the expiration of such time, if he relied solely on dispensing to keep things going, instead of "finding sooner or later that he has a sufficient living on hand," he would find sooner, rather than later, that he would be considering the necessity of either putting up his shutters or of devoting his attentions to those side lines which contribute materially to the success of an average pharmacy. He would also discover that to a large number of the public cheapness is their idea of being "best served."

Respecting post-graduate courses, in London there exist so many excellent educational institutions that additional courses here would be somewhat superfluous. The subjects enumerated by Mr. Marsden are hardly likely to prove remunerative to pharmacists, save to a very few, and even then to a limited degree only. He omits to mention a most important factor. Each of these subjects is the peculiar study of specialists—the pathologist, the radiographer, the toxicologist, and the holders of the D.P.H., who are usually highly trained men with first-class medical qualifications. They are the men to whom the public will go for help in such matters, and not to the pharmacist, who must ever be their inferiors in such studies. There is, however, one science which might replace botany in the Minor and Major with advantage to the chemist in after life. I mean animal physiology, including histology and physiological chemistry, the subject to be studied in the laboratory as well as in the lecture-room.

One thing in Mr. Marsden's letter particularly arrested my attention. He appears to suggest that his brother craftsmen are to pursue the study of science for financial gain. Can he not credit some at least with a desire for culture and attainments simply and solely for the pleasure they bring?

London, September 7, 1903. F. A. Hocking.

The Minor Examination at present is the be all and end all of the student; not more than 2 per cent. think of the Major, and very few even of the present-day students have got the educational foundation of a scientific career. Possibly one reason why students go no further than the Minor is that they seem to feel the financial drain of the present Minor, and are anxious to go back to their situations as soon as qualified. Though I have not given the question of dividing the Major Examination serious attention, I agree with the views expressed in the Journal lately, and that is if you take away from it its pharmaceutical bearing, so to speak, you might as well delete it altogether, for it cannot be denied that the B.Sc. or A.I.C. qualification would be sought after instead of such a Major. Both the Major and Minor Examinations should have a far more practical bearing than at present, more attention being given to assay work and the testing of chemicals and galenicals in the B.P. That is a book that the average man at present knows very little about in a practical way. Our professional examiners have raised the Minor status very very much, I am pleased to say, rescued it from ridicule, in fact, but they are not able to see eye to eye with the educated pharmacist. They will not admit that there is or can be anything pharmaceutical about chemistry or botany. That is where our Continental friends are leaving us far behind. The Minor Examination is the first problem that wants solving; the Major will do very well on the same lines, but with a revised schedule. Dynamics, mechanics, and hydrostatics should be included in the physics.

September 2, 1903. "A Teacher of Pharmacy" (220/6).

The Society's Compendium of Medicines.

Some time ago you invited suggestions as to the proposed Compendium of Medicines, and, though late, I now beg to submit a few ideas which I judge worthy of consideration. I think a work of this kind ought to help to a good understanding between doctors and chemists. Once a doctor sent a mother to me for something for a child's cough, saying I could give her something nicer than he could. Not every doctor would do this. There would be more likelihood of the chemist's skill being utilised if the doctor could select from some formulary a suitable preparation and give the patient a written order or prescription. A sensible doctor would not expect every sufferer from corns or toothache or mild cough or slight diarrhœa to run to him, and yet he might be strongly opposed to "counter prescribing." He might recognise the usefulness of the practice if he knew that chemists kept within safe limits, dealing only with trifling ailments and recommending approved remedies. It would savour less of quackery on the chemist's part to give advice as to the most suitable remedy than to have a secret preparation, superior to all others, of marvellous properties, and a cure-all in its effects. In conclusion, I beg to enter a protest against the unnecessary use by pharmacists of their so-called Latin. Fancy a young fellow just through the Minor, with all his blushing honours thick upon him, asking for "an ounce of ung gwentum zin sigh and a piece of emp addis eye vum." Such an experience I actually survived quite recently. Surely no educated Englishman would discard his mother tongue for this barbarous mutilation of a mongrel jargon, and then distort the object of his choice so horribly and unnecessarily, too! Surely not, and yet I read in the *P.J.* a week ago that it would be sufficient to state on a pill label that the composition was pil. hydrarg. and something else. We may not have learnt to prefer good English to bad Latin, but our condition is hopeless if we are unable to realise that we are not called upon to teach the public to read medical prescriptions. Do, therefore, try to prevent the threatened use of shop Latin on chemists' labels.

September 3, 1903. "Quidam" (220/15).

⁂ Some extremely valuable suggestions have been submitted by this correspondent, who will be glad to learn that his ideas accord generally with those which are already under consideration at headquarters. It is not proposed that the book should be a mere compilation of formulæ for ailment named remedies, though such will receive a full share of attention.—[Ed. *J.P.*].

The Pharmaceutical Society's Subscriptions.

In your issue of the 5th inst. you invite readers' opinions regarding the payment of the Pharmaceutical Society's subscriptions. After a good deal of hard study, I managed safely to negotiate the Minor in April, at my first attempt, and in an outburst of the universal love of man towards man latent in our natures, I began to think that the Society people were not so bad fellows after all, and decided to join the membership. About a fortnight ago I sent my subscription to Bloomsbury Square, trusting that the advertisement, "the *Pharmaceutical Journal* is supplied, post free, for one year to any part of the United Kingdom . . on payment of 20s.," was a truthful statement of the bargain I was entering into. Being, however, an "anxious inquirer," I enclosed along with my guinea a note mildly suggesting that I should not be called upon to pay another subscription until I had been "supplied . . for one year" with a *Pharmaceutical Journal* weekly. Imagine my surprise when, appended to the acknowledgment of the receipt of my money, I found a note to the effect that another subscription was due by me in January. The printed note of acknowledgment stated that "the numbers" of the Journal "from the beginning of the *year* shall now be forwarded, and afterwards the weekly numbers as published." The word in italics was carefully ruled out with a pen, and substituted were the words "present volume." In the course of time I duly received the back copies of the Journal from July 4 to the present time. Now, I can see the force of having birthdays and Christmas seasons and so forth once a year, but it beats me to know why the time for subscribing to the Journal should be unalterably fixed like the former events. Fancy sending just now a year's subscription to the *Times* newspaper, and getting for your money an issue daily for four months, plus a parcel of eight months' unsold back numbers. Altogether, considering that there is bound to be a number of cases similar to mine, I hardly think it would be subversive to the interests of the Society to modify its rule regarding subscriptions. No doubt the Society, like the rest of us, means well—in fact, if I have had any doubt about that before, at any rate I've none now—but its little ways are liable to be misunderstood, and unkindly disposed persons might say that they are, if not dark, anyhow, like the ways of the "Heathen Chinee," peculiar.

Edinburgh, September 7, 1903. "Sungam" (220/44).

The Guild of Assistants.

I think "Lex" is quite right in referring to the outdoor system in the way he does, but he is quite wrong in supposing that it is useless to attempt to dissuade qualified men from service with the drug companies. There are drug companies and drug companies. May I tell "Lex" that no self-respecting qualified assistant will engage with those companies whose proprietors are not duly diplomaed men? Some of the unqualified companies do get some capable qualified men, but he will find upon inquiry that such men ofttimes have a past. The object of the Guild is to recover the steadier of these, and to prevent others going against their own interests. A card of membership has already been drawn up, and only awaits the approval of the meeting which will be held at 52, Acacia Road, N.W., on Thursday, September 24, at 9 p.m. The cost to the assistant will be twopence only, and it is expected that he will keep his promise, as specified on his membership ticket. The initial cost of issuing these tickets is less than five pounds, and there is no doubt many chemists in business will gladly supply the funds to enable this movement to achieve success.

September 8, 1903. C. E. Pickering.

⁂ As a matter of courtesy space has been found for the above letter, but the writer can hardly expect to be taken seriously if he continues to propose and advocate schemes of a more or less puerile or fantastic character.—[Ed. *P.J.*]

Owing to absence from home, I missed Mr. Pickering's letter in the Journal of the 29th ult. I agree with "Lex" in admiration of Mr. Pickering's pertinacity, for the rest it must be clear to every reader that the attempt, like others before it, is foredoomed to failure. In short, and with all respect, I doubt this gentleman's fitness to lead in an affair of this sort, and am quite sure that any organisation got up under such auspices will come to nothing, and I therefore advise, if it be necessary, all assistants to observe considerable caution with regard to the movement. Personally, I see a difference between the young man who, for a better salary, perhaps, more time for study and recreation, and steadier, almost certain, and constant employment, disposes of his services to a drug company, and the chemist in business who, often after great activity in the opposite direction, throws over his friends and sells, or tries to sell, his business to the opposition. Mr. Pickering might possibly amongst this latter class find some opening for his powers and use for that spare time of which he appears to have so enviable a superfluity.

September 8, 1903. "P. N. J." (220/50).

Poor-Law Dispensers.

A correspondent (220/9) referring to a recent note on Poor-law dispensers' salaries, writes:—In the provinces, inasmuch as salaries are not paid out of the Poor-law Common Fund, there is no fixed scale. A dispenser generally accepts office at the advertised salary, his increases depending entirely upon his Board of Guardians, who can increase it *ad lib.*, the size and importance of the town being a considerable factor in the extent of the salary. Thus, Reading used to give £85 per annum, whereas a few weeks ago I read in your Journal of a Poor-law dispenser (Sheffield ?) having his salary increased from £210 to £230 per annum. In the Metropolis the salaries of Poor-law dispensers are regulated by the scale adopted by the Local Government Board, and are paid out of the Poor-law Common Fund. By this scale whatever salary a dispenser commences at (usually £120), the Local Government Board will agree to it being increased to £140 at the end of four years, and afterwards by £10 every four years, until a maximum of £180 is obtained. It is also understood that whenever a dispenser assists or takes sole charge of a second dispensary under the same Board, he shall receive an additional emolument. By this means a Metropolitan dispenser of my acquaintance has a salary of £200 per annum, with dinner and tea daily.

Higgin's Mountant.

In reply to "L. E. T." (95/25) *re* Higgin's mountant, let your correspondent exercise his own ingenuity, if he has any, and make his own mountant, and not seek to surreptitiously suck the brains of other people. If he has not, which appears probable, he will find plenty of recipes for mountants in 'Figures, Facts, and Formulæ,' published by the *Photogram*, 6, Farringdon Avenue, London, E.C.

Croydon, September 7, 1903. J. H. Baldock.

⁂ We are informed that Higgin's mountant is a preparation of white dextrin.—[Ed. *P. J.*]

PUBLICATIONS RECEIVED.

Half-yearly Report of the London Essence Co. No. 2. Pp. 19. London: Camberwell Green, S.E. September, 1903. A *résumé* of the literature of the last six months on various essential oils, the monograph on lemon oil being of especial importance.

England's Future. By W. Culver James, M.D. Third Edition. Pp. 32. Price 3d. London: Harrison and Sons, St. Martin's Lane. To this reprint of a pamphlet written twenty-three years ago, Surgeon-Major Culver James has added some letters recently contributed to the lay press. The object of the whole is to consolidate the Empire by alterations in fiscal policy, and by the adoption of some form of compulsory military service.

MARRIAGES.

Alcock—Simmonds.—On September 9, at the Parish Church, Banbury, by the Rev. Jocelyn Speck, Vicar of Wroxton, James Elsworth Alcock, Ph.C., of 485, Glossop Road, Sheffield, to Rose Simmonds, of North Bar, Banbury.

Bourdas—Martin.—On September 8, at the Church of the Ascension, Balham Hill, London, S.W., by the Rev. A. W. Hooper, M.A., Isaiah, eldest son of Isaiah Bourdas, of Dunoon House, Clapham Common, and of 6, Pont Street, and Belgrave Road, S.W., to Agnes, elder daughter of the late James Martin, of "The Grange," Bervie, Kincardineshire.

Francis—Tindall.—On September 10, at the Wesleyan Church, Weybridge, by the father of the bride, Alan Francis, elder son of George Bult Francis (Hearon, Squire and Francis, Limited), to Florence Lilian, youngest daughter of the Rev. W. H. Tindall.

Summers—Meredith.—On September 5, at Chiswick, Frank Henry, eldest son of James Summers, of Chingford, to Caroline, only daughter of E. S. Meredith, Airedale House, Chiswick.

REPLIES TO CORRESPONDENTS.

INFORMATION required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Labels (T. S.—95/4).—There is nothing on any of the labels to incur liability to stamp duty.

Oxygen (J. B.—95/11).—Brin's Oxygen Company, Limited, Horseferry Road, Westminster.

Canada (C. S.—220/48).—We have made inquiry on the subject, but are unable to obtain any definite information.

Homœopathic Chemist (R. W. T.—95/6).—The only qualification required by law in Great Britain is that of "chemist and druggist."

Publication of Formulæ (W. J. D.—221/3).—Your suggestion will probably be acted upon, as the point is already under consideration.

Black Malt (A. E. S.—94/33).—Write to the British Malt Products Company, West Bar, Dunbar, N.B., or apply to some firm of maltsters or brewers.

Walnut Oil (K. E. B.—94/32).—Both names refer to the same thing. Walnut or nut oil is obtained by expression from the kernels of the walnut, *Juglans regia*.

Boxes (C. P.—220/42).—We are glad to learn that you have been able to procure what you require, and thank you for sending the names of the firms which made the boxes.

Medical Terms (F. A. W.—95/9).—The handiest book of the kind is Hoblyn's 'Dictionary of Terms Used in Medicine and the Collateral Sciences' (Whittaker, 10s. 6d. net). You will find it very useful for reference.

South Africa (T. K. B.—95/10).—We have no definite information on the subject, but should not advise you to go out on chance unless you are in a position to maintain yourself for several months, while looking for a situation.

Lozenges (D. F. R.—95/5).—None of the names will, in themselves, incur liability to stamp duty. The preparations you mention are not liable, because compositions intended to produce effervescing drinks are specially exempted by Act of Parliament.

Sale of Pills (J. E. C.—95/2).—No one but chemists and druggists will be permitted to sell the ointment and pills unstamped, and the stamp duty must be paid by you, as the original vendor. You say you are a chemist, but we fail to find your name on the Register of Chemists and Druggists.

Label (J. E.—95/12).—Your specimen label has probably been marked inadvertently, as it belongs to the class of labels which the Inland Revenue authorities now decline to mark. The label appears to bear an adequate indication of the ingredients of the powder, and that circumstance supports the view that it has been stamped in error. But we shall make inquiry on the subject for you and let you know the result in due course.

Dentists Act (W. A. D.—95/7).—Another Act of Parliament would be necessary, and we are not aware that it has yet been proposed to introduce a Bill on the subject. Moreover, as it is extremely improbable that such a measure would ever receive the assent of Parliament, it is needless to trouble about what has been said or reported on the subject. You can obtain a copy of the Act, for a few pence, from Messrs. Spottiswoode and Co., Ltd., East Harding Street, London, E.C.

Information Wanted.

Adam's Solution (R. R. H.—95/3).—What does this solution contain, and what is it used for? It is used in pathological work as a reagent.

Correction.

Digestive Value of Pepsin.—Mr. M. Dechan asks us to notify that, in his paper on "The Digestive Value of Commercial Pepsin," at page 379 of last week's issue, in the table under No. 2, "2·5" should be "12·5." The error had been overlooked by Mr. Dechan in checking the proof submitted to him.

BIRTH.

Wilson.—On September 2, 1903, at 8, Lowfield Street, Dartford, to Mr. and Mrs. F. C. Isham Wilson, a son.

DEATHS.

Cooper.—On September 3, Mary Hannah Gundry, the wife of Albert Cooper, F.C.S., of Grimston Lawn, Ealing, W., and 80, Gloucester Road, South Kensington.

Crassweller.—On September 1, William Ellis Crassweller, Chemist and Druggist, Bury St. Edmunds. Aged 72. Mr. Crassweller, who was a native of Portsmouth, carried on business as a chemist and dentist, at 36, Abbeygate Street, for over forty years, retiring some ten years ago. He was at one time a member of the Bury Town Council, but retired about 1878. For many years he was a member of the Burial Board, and was also a trustee of the Guildhall Feoffment, a governor of the Guildhall Feoffment Schools, and a trustee of Clopton's Charity. He was the oldest among the managers of the St. Mary's Parochial Schools, having been a member of that body for over thirty years, and recently he was appointed a foundation manager of those schools under the new Education Act.

Puckering.—On September 6, John Puckering, Chemist and Druggist, York. Aged 75.

Taylor.—On September 7, at Brighton, James Johnson Taylor, Chemist and Druggist, of Manchester. Aged 58. Mr. Taylor had been a member of the Pharmaceutical Society since 1895.

Vincent.—On September 6, William Vincent, Chemist and Druggist, Merthyr, near Truro. Aged 37. Mr. Vincent, who had been connected with the Pharmaceutical Society as an Associate and latterly as a Member for many years, had been at the Pharmacie Internationale, Bordighera, Italy, and was on a visit to his native place, Tregarrick Farm, Merthyr. On Sunday night he visited his brother at an adjoining farm, and while there he shot himself with a gun. At the subsequent inquest the coroner said the fact that Mr. Vincent had been addicted to taking drugs was sufficient to account for his state of mind.

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Alcock, Allenby, Baldock, Black, Bostock, Brown, Browne, Browning, Butterfield, Cannon, Cheyne, Cowburn, Dechan, Doe, Dotchin, Dowzard, Ellis, Elstob, Ferrall, Francis, Freeman, Frost, Gedge, Gifford, Gray. Grier, Hallaway, Harrison, Hesse, Hills, Hocking, Kremers, Lewis, Lucas, Lyon, Parker, Pickering, Ritchie, Row, Saunders, Scott, Shaley, Sinoa, Smith, Spence, Spencer, Stephenson, Stewart, Strong, Tildesley, Walker, Walton, Watt, Whiston, Williamson, Wilson, Wootton.

Telegrams "PHARMACEUTICAL JOURNAL LONDON"
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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, September 17, 1903.

A Bottle, Bearing a Label "Calomel," but containing Arsenic, has been found by a chemist in a doctor's dispensary.

In the Students' Columns appears the first of a series of articles on dispensing, in which the elements of the art are laid down.

Obvious Evasion of the Medicine Stamp Duty Acts by the adoption of eccentric wording on labels is shown to be likely to involve waste of effort.

Our Paris Brother is described in an interesting article dealing with pharmacy in France. "The *Pharmacien*," says the writer, "is purely a dispensing animal."

Mr. Glyn-Jones Addressed a Meeting of Chemists held at Brighton last week. The chief topic of discussion was the present position of the trade with regard to the recent decisions as to medicine stamp duties.

Radio-Activity was the topic which excited the greatest discussion at the annual meeting of the British Association at Southport. A somewhat full report of that part of the proceedings is published in this issue.

The Dewsbury and District Chemists' Association, at its first meeting held this week, passed a resolution expressing appreciation of the endeavours of the Pharmaceutical Society with regard to the proposed Compendium of Medicines.

Members and Students may again be reminded that October 1 is the date fixed for the opening of the Session, when Dr. J. Wilson Swan will give the inaugural address, and the Martindale bust will be formally unveiled.

Absorption and Emission Spectra have been dealt with very fully by Professor W. N. Hartley in his presidential address to the Chemical Section of the British Association. The first instalment of the paper (which is being reproduced in full) appears this week.

The Number of Deaths Certified as Due to Poisoning was 1,197 in the year 1901. In 515 cases the poison was administered by accident, and in 502 instances it was taken by suicides. Fuller particulars will be found in an abstract of the Registrar-General's Report appearing in this issue.

Formulæ for the 'Compendium' should be sent as soon as possible, as the time is getting short. The Editor has again to thank numerous wholesale firms, individual pharmacists, and secretaries of local associations for their ready response to the requests for assistance which have from time to time been made in the Journal.

Under Sections 15 and 17 of the Pharmacy Act, 1868, proceedings have been instituted against an ironmonger of Strathaven. Before the Hamilton Sheriff, the defendant, against whom it is alleged that he sold a quantity of arsenic as an ingredient in a packet of Ness and Co.'s Sheep-dip Powder, pleaded "not guilty," and the trial was fixed for October 17.

A Prosecution under Section 3 of the Indecent Advertisements Act, 1889, a brief reference to which appeared last week, is now reported more fully. The defendant's solicitor asked what was to be done with regard to enemas and other things of the kind exhibited in the window, but the magistrate did not give a definite answer to this question.

At To-Day's Auctions the demand was very fair, and undoubtedly a better feeling prevails in the drug and chemical market generally. Aloes, menthol, cloves and peppermint are among the articles the prices of which have altered since last week.

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PERVERTED INGENUITY.

Judging from a number of labels for medicinal compounds, which have been submitted for expressions of opinion as to whether they are likely to render the preparations liable to duty, a number of chemists and druggists are devoting much time and a considerable amount of ingenuity to the solution of the problem how to avoid payment of Medicine Stamp Duty. It is needless to say that the individuals in question are not content to avail themselves of the ways of escape suggested by the Board of Inland Revenue, but are desirous of maintaining a greater measure of secrecy than would be possible if any of the courses described in the Journal of August 29 (pp. 322-3) were followed, while yet avoiding the necessity of affixing duty stamps to the bottles or boxes containing the medicines. The Medicine Stamp Duty must, strictly speaking, be regarded as a tax upon proprietary rights and secrecy, medicines sold without any claim to proprietary rights or any pretence at secrecy with regard to their composition being exempt as a general rule. But the preservation of secrecy is what many vendors continue to aim at, and the only effect, in certain quarters, of the Inland Revenue's change in practice, has been to set wits at work to devise means whereby compounded medicines may still be sold unstamped, with an implied recommendation, but without their composition being disclosed or in any way indicated.

The probability is, however, that much of this perverted ingenuity will prove to be utterly wasted, while the results in some instances may be found the reverse of satisfactory. As a case in point, reference may be made to one plan which has recently been suggested for avoiding payment of duty on compounded medicine. By means of a handbill, it was proposed to inform the public that, on and after January 1, certain preparations would be supplied under other names than at present, in order to avoid liability to Medicine Stamp Duty. But the fact had been overlooked that, by issuing the handbill, the seller would render those preparations more surely liable than before. Thus, by identifying the preparations with those formerly sold under names now declared to incur liability the handbills would doubtless be regarded as holding out or recommending the medicines mentioned. Moreover, the use, in the specimen handbill submitted to us, of words implying a claim to proprietary rights in the preparations mentioned would have afforded grounds for a further claim to Medicine Stamp Duty. Again, the use of labels such as "Liver Pills" with a thick line drawn through the word "Liver," or of "Pills, formerly known as Liver Pills," is a device at once unworthy and unsafe.

It is, in fact, idle to suppose that any obvious evasion or more or less paltry subterfuge will enable a retailer of dutiable articles to escape payment of the tax imposed by Statute, and it would be as well if chemists were to remember that the Board of Inland Revenue has the power to cause them serious inconvenience if it were thought proper to enforce the provisions of the Medicine Stamp Duty Act to the utmost. As it is, the authorities hold that, if they were to insist on all the statutory conditions being fulfilled, the special exemption in favour of chemists and druggists would be practically nullified. That contention might not be upheld in the Courts, but it is an inconvenient and expensive matter to fight the Government in the Courts, and the wiser course, on the whole, appears to be the adoption of one of the alternatives described in the Journal of August 29 last.

WHEN CARELESSNESS BECOMES CRIMINAL.

A remarkable instance of carelessness in handling drugs has just been brought to the notice of the Editor of the *Pharmaceutical Journal*, and chemists who may, at any time, be asked to take over drugs or chemicals from doctors' surgeries should make a note of the circumstances of the case. These are, briefly, as follow:—A medical man, resident in the West End of London, who had been accustomed to dispense medicines of his own prescribing, recently died. The doctor who succeeded to the practice, wishing to get rid of his predecessor's drugs and chemicals, requested a neighbouring chemist—a member of the Pharmaceutical Society—to clear out the contents of the dispensary. This the chemist agreed to do, and among the stock he found a four-ounce, wide-mouth bottle, bearing a poison slip, and a faded label on which was written the word "Calomel." The bottle was about two-thirds full of a heavy white powder somewhat resembling calomel in appearance, and anyone but a pharmacist would probably have added the powder to his stock, never doubting but that the powder was what the label represented it to be. To the trained eye of the chemist, however, there was something suspicious-looking about this "calomel," and accordingly he applied a few simple tests to a small portion of it, with the result that he found the powder was not calomel, but white arsenic! There is no need to comment on these facts, but a haunting dread must fill the mind of everyone who asks himself whether the powder had ever been dispensed by the doctor or his assistant as calomel? In conclusion, it may be stated that the bottle and its contents are now in the possession of the Editor, who has satisfied himself that the white powder actually is arsenic.

THE CULTIVATION OF CINCHONA IN INDIA.

It is now a little over half a century since the Government of Bengal recommended the introduction of cinchona plants into India. Several causes led up to this step. It was feared that the cinchona supply of South America might altogether cease, and in addition to this, at the time the recommendation was first made, about the year 1852, the Government of India was paying something like £7,000 a year for quinine. At first the experiments met with little success, but the annual administration report on the Government Cinchona Department, Nilgiris, for the year 1902-1903, the chief details of which are here abstracted, will give some idea of what an important industry the cultivation of cinchona in India now is. The report deals with the three estates—Dodabetta, Hooker, and Nedivattam. The season under consideration was not altogether favourable for the growth of cinchona. The period from June to November was unusually wet and was succeeded by abnormally dry weather. There were some heavy falls of rain during the south-west monsoon on the Nedivattam and Hooker estates which caused a considerable amount of wash.

In the Dodabetta estates the number of seedlings and plants in the nurseries at the end of the year was about 70,000, of which 50,000 were in plant beds and 20,000 in the seedling beds. By way of experiment, a commencement was made with field nurseries. Trenches were dug between the rows of cinchona, filled in with surface soil, and planted with seedlings about 6 inches apart. This method of growing plants for supplying vacancies in the field has many advantages, the chief of which are that the cost is small, the plants are ready to hand when required, and even if the percentage of deaths is large the trenching serves as cultivation for the old trees. The experiments already made have succeeded so well, that it is intended to continue them on a larger scale. The total expenditure on nurseries was Rs. 404-12-11. Two thousand and eighty-six cartloads, or about 1,043 tons, of stable or cattle manure were put out on different plots of the estate, and over 37 acres were treated with lime. The total cost of manuring was Rs. 3,774-13-6, an expenditure which has been amply justified by an improvement in the condition of the trees manured. It is interesting to note (continues the report) that the trees which were manured in 1898 with a mixture of nitrate of soda, nitrate of potash, bonemeal and castor poonac are looking remarkably fresh and luxuriant, proving that the beneficial effect of this mixture has been long lasting. The bark from two trees on this plot was analysed, and was found to contain 7·13 per cent. and 7·84 per cent. sulphate of quinine. In 1899 the average analyses of the bark from several trees on this plot was

5·06 per cent. sulphate of quinine. Whilst these figures are of interest, it would not be safe to draw the conclusions that the result of the manuring has been an increase of 50 per cent. in the amount of quinine on the plot.

On the Nedivattam estate the total nursery stock at the end of the year was 600,000. The total expenditure on nurseries was Rs. 2,410-4-6, against Rs. 335 in 1901-2, the excess being due to the cost of raising plants for the new extension. The amount expended on manure was Rs. 2,243-2-0, and the working charges amounted to Rs. 6,568-4-0, against Rs. 4,756-12-8 in 1901-1902, the increase being chiefly due to preliminary expenses in connection with the opening of a new extension. On the Hooker estate there were about 400,000 plants and seedlings in the nurseries at the end of the year. The expenditure on nurseries was Rs. 989-12-0 against Rs. 2,410-4-6 in 1901-1902. The manure expenditure was Rs. 465, and the working charges amounted to Rs. 11,509-14-6. The total quantities of bark harvested on the various estates were as follow:—Dodabetta 50,303 lb., the highest quinine percentage being 12·92, and the lowest 5·10; Nedivattam, 37,176 lb., consisting of 27,840 lb. crown and 9,336 lb. red bark, the highest quinine percentage being (Ledger) 10·81; Hooker, 56,813 lb., which was taken entirely from sickly and dying trees. The total out-turn from estate and purchased bark worked up in the factory was of sulphate of quinine, 15,711 lb., and of febrifuge 6,606; the average yield of the estate bark was 3·10 per cent. sulphate of quinine, and of the purchased bark was 2·85 per cent. sulphate of quinine. No less than 15914·82 packets, representing 1,160½ lb. of quinine were sold at the post offices. The profit to the Government for the year was Rs. 69,193-5-11. From these statements it would seem that there need now be no fear of the extinction of the cinchona plant.

THE POISONS OF THE PEOPLE.

Reference to the report for 1901 of the Registrar-General of Births, Marriages and Deaths (see page 434), and to the figures for the previous year, shows that, while the total number of deaths certified in 1901 as due to some or other form of poisoning was much the same as in 1900, there were certain interesting points of difference. Thus, the number of accidental deaths by poisoning was less by 44 in 1901 than in the earlier year, but there was an increase of 47 in the number of suicides. As usual, a large proportion—over 61 per cent.—of the accidental deaths was caused by substances which have not yet been scheduled as poisons, and are consequently obtainable by the public without any restriction on their sale. It will be noticed, also, that there was a considerable increase in the number of deaths under anæsthetics, but the accidental deaths from opium and its preparations, and from carbolic acid, were fewer than in 1900. A noticeable feature among the suicides is the increased favour of oxalic acid: in 1900 only 47 deaths were recorded from this cause; but in 1901 the number rose to 72. An increased number of persons, also, chose ammonia or one of the various mineral acids with which to end their existence. The British public, fortunately perhaps, has very little knowledge of how to commit suicide in the most rapid and pleasant fashion; a fact to which the extraordinary number of persons who take the more corrosive and painful substances in preference to pleasanter poisons bears conclusive testimony. The typical self-poisoner is a person of very crude and unscientific methods. It would indeed seem to be more than ever necessary that, as regards the sale of mineral acids, and especially "spirit of salt," some restriction should be imposed. Numberless coroners and juries have already urged this point, such a recommendation having been made as lately as last week at Halifax (see p. 440), but pending the introduction into Parliament of the Poisons Bill, which is understood to be reposing, ready drafted, in the pigeon-holes of the Privy Council Office, it is doubtful whether any steps in the direction indicated can be taken with advantage.

PROTECTION AND CHEMICAL INDUSTRY.

Whether or not the compromise which, according to rumour, has been arrived at by the Cabinet on the fiscal question, will last very long is open to doubt. Doubtless in the course of the inquiry which is being made, the probable effect of Protection on the chemical industry has been receiving attention, but meanwhile the views of Mr. Alfred Mond on the question are of some interest. In an article which has appeared in the *Manchester Guardian*, that gentleman has dealt with the question of the effect of Protection upon the chemical industry of Great Britain. The common mineral acids are, from their nature and relatively low price, articles in which competition by importation from foreign countries is practically excluded, and have nothing to gain or lose by Protection. But with alkalies, bleaching powder and the like, the case is different, and Mr. Mond does not think that any system of Protection would beneficially affect the industry. He thinks that the "live" English manufacturer can hold his own "without asking for any contributions from his fellow citizens in the shape of protective duties."

PARIS SOCIETY OF PHARMACY.

The centenary of the Paris Society of Pharmacy, which, with the exception of the Académie des Sciences, is one of the oldest scientific bodies in France, if not the oldest, is to be celebrated on October 17. Mons. Eugène Léger, who, it will be remembered, attended the annual dinner of the Pharmaceutical Society of Great Britain in May last, is the President of the Paris Society, and will preside at the celebrations, while Professor Bourquelot, General Secretary, will give an historical account of the proceedings of the Society. The Pharmaceutical Society of Great Britain will be represented on this occasion by the President, Mr. S. R. Atkins, J.P. It had been feared that Mr. Atkins would not be able to be in Paris that week, as he had promised, before the invitation was received, to attend the annual dinner of the Sheffield Pharmaceutical and Chemical Society, the date of which had been specially fixed for Thursday, October 15, to suit his convenience. By the courtesy of the Council of the Sheffield Society, however, the date of the dinner has been altered, so as to enable Mr. Atkins to represent the Pharmaceutical Society in Paris on this occasion of such great historic interest.

ABSORPTION AND EMISSION SPECTRA.*

BY PROFESSOR W. N. HARTLEY, D.SC., F.R.S., F.R.S.E.

The ofttimes laborious method of investigating the relationship of substances by ascertaining how one form of matter can operate upon another—in other words, by chemical reactions—has of late been supplemented by the examination of their physical properties, and has been extended to compounds, both organic and inorganic. In several directions this has led to results of very uncommon interest. Accordingly, I propose to offer a brief account of twenty-five years' experimental work in that branch of chemical physics which deals with the emission and absorption of rays of measurable wave-length, and to review its present position chiefly in relation to the theory of chemistry, indicating where it may be usefully and probably extended.

According to Davy†, Ritter observed chemical action on moist chloride of silver to be different in different parts of the spectrum, slight in the red, greater towards the violet, and extending into a space beyond the violet where there is no sensible light or heat. Wollaston discovered that chemical action was exerted by refracted rays in a region where they were of a higher refrangibility than any rays that were visible. Young showed that the invisible rays are liable to the same affections as visible rays. Hence we have the beginnings of spectrum analysis in its chemical relations to terrestrial matter, in the infra-red, the visible, and the ultra-violet regions.

Everyone is more or less familiar with the subject of spectrum analysis. This was defined by Tait as an optical method of making a diagnosis of the chemical composition of either (*a*) a self-luminous body, or (*b*) an absorbing medium, whether self-luminous or not. It has now become necessary to enlarge this definition, and I would suggest that it is the study of the composition and the constitution of matter by means of radiant energy, and recording in the order of their refrangibilities the rays emitted and absorbed by matter. By this modified statement the infra-red or so-called "invisible heat rays," the visible or "colour rays," and the ultra-violet or "chemical rays" are included.

Spectra are of two kinds, emission and absorption spectra. It will be convenient if the latter are considered first.

Absorption Spectra.

The Infra-red Region.

Abney (1880) by the preparation of a particularly sensitive form of collodion emulsion containing silver bromide was successful in obtaining very extraordinary results. Such films as he prepared were so sensitive to invisible radiations of long wave-length as to be capable of forming a representation of even a kettle of boiling water, standing in an absolutely dark room. This picture could not, of course, be properly referred to as a photograph, though the process by which it was obtained was such as we are accustomed to term a photographic process. It may with greater propriety be termed an actinograph, the result not of light, but of dark rays. The least refrangible of the visible rays lies about wave-length 7,800 ten-millionths of a millimetre, or Angström units; but these rays extend as far as wave-length 12,000, while Becquerel has measured lines in the spectra of metals of as low a refrangibility as wave-length 18,000.

Abney and Festing (1881) investigated the influence of atomic groupings in the molecules of organic substances by measuring their absorption in the infra-red region of the spectrum. They studied such simply constituted substances as water, hydrochloric acid, chloroform, carbon tetrachloride, and cyanogen, besides many hydrocarbons with their hydroxyl, haloid, and carboxyl derivatives. Characteristic groups of lines or very narrow bands were observed in carbon compounds, but they are absent from carbon compounds containing no hydrogen, and do not all appear in some of the hydrogen compounds. The facts observed led to the conclusion that they belonged to hydrogen, but are subject to some occasional modifications. Oxygen in hydroxyl, for instance, modifies two of the lines, since it obliterates by absorption the rays which lie between them. Oxygen in aldehyde, or when it forms part of the carbon nucleus of some such compound, presents bands which are bounded by well-defined lines, or are inclined to be linear. These appear to be characteristic bands indicating the carbon nucleus of a series of substances Alkyl radicals, such as ethyl, exhibit absorption bands, and so does the benzene nucleus. It is a remarkable fact that bands appear in the solar spectrum which correspond with those of benzene (1881).

Julius (1893) has investigated the absorption in the infra-red caused by many carbon compounds by means of the bolometer, combined with a prism, and also with a diffraction grating. He showed that the molecules of compound substances absorbed the rays which were emitted at the time of their formation. Thus, to take the simplest case, the emission spectrum of hydrogen burning in air corresponds with the absorption bands of water vapour—that is to say, the absorption spectra of the compounds are the counterpart of the emission spectra of the flames which yield these compounds during combustion. The emission spectrum of carbon dioxide is found in the spectrum of burning carbon monoxide, cyanogen, methane, and carbon disulphide; and that of water-vapour in various hydrocarbons. As early as 1888 Julius, in an inaugural dissertation, quoting Tyndall, recognised that the absorption and emission of rays measured with the thermopile were manifestations of the molecular vibrations.

The various absorption spectra examined included those of the alcohols, such as isopentylic, isobutylic, normal butylic, propylic, ethylic, and methylic, as well as hydrocarbons, chloroform, and benzene. The study of the maxima of radiation and the maxima of absorption offers us a means of arriving at a knowledge of a series of new and valuable physical constants, namely, the vibration periods characteristic of the molecules. (Tyndall discussed this subject in his usually luminous style on pages 391 to 402 of his work 'Heat as a Mode of Motion.')

Puccianti (1900) has examined the infra-red absorption spectra of liquids, including aromatic compounds and alkyl derivatives, while Donath has examined in the same region various essential oils. Carbon combined with hydrogen shows a maximum of absorption with a wave-length about (1·71μ Mm.) 17,100 Angström units.

Benzene and pyridine have two other maxima of absorption in common. The alcohols have very similar maxima of absorption at wave-length 21,000.

The three isomeric xylenes show absorption spectra which are almost identical. At or about wave-length 23,200 another maximum of absorption is shown.

Julius refers to Langley's observation that at a wave-length of 27,000 there is an abrupt termination to the solar spectrum, probably caused by the water vapour in the atmosphere; but a band extends to 273,000, and at no very great elevation above the earth's surface there are rays with a wave-length of 45,700 Angström units. All radiations of longer wave-length—and Julius has measured down to 149,000 Angström units—are likely to be absorbed by the carbon dioxide in the atmosphere.

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*Presidential address to the Chemical Section of the British Association for the Advancement of Science, Southport, 1903.

† 'Chemical Philosophy,' Vol. I., 1812, p. 211.

The Visible Rays or Colour Region.

J. L. Schönn (1879) examined the absorption spectra of substances usually considered to be colourless in layers from 1·6 to 3·7 metres in thickness and observed narrow bands in the spectra of methyl, ethyl, and amyl alcohol, lying in the red, orange, and yellow; methyl alcohol showed two bands, ethyl and amyl alcohol each three. Gerard Krüss (1888) calculated the wave-lengths of these bands, and it appears that the higher members of the homologous series have the bands displaced towards the red end of the spectrum. Russell and Lapraik (1879) made similar observations on columns of liquid from two to eight feet in length. All the substances gave well-defined absorption bands lying between wave-lengths 6,000 and 7,000.

The bands of the different substances differed altogether from the bands of water. Alcohols give a band which is similar in different alcohols, but the higher the alcohol stands in the homologous series—that is to say, the larger the number of carbon atoms it contains, the nearer is the band to the red end of the spectrum (1881).

It was definitely established that for each CH_3 introduced into a molecule of ammonia or benzene there is a shifting of the absorption bands towards the red end of the spectrum.

It will, of course, be understood that the liquids examined were perfectly colourless in the ordinary acceptation of the term; and that they appear so is owing to the bands of absorption being very narrow, so that the percentage of luminous rays withdrawn by absorption is but a very small fraction of the whole spectrum emitted by a source of light when viewed under ordinary conditions.

Numerous observations were made by Melde, Burger, Magnus, H. W. Vogel, and Landauer (1876-78), which showed that changes in the absorption spectra of solutions are partly physical and partly chemical—that is to say, they are caused by changes in the constitution of the solution. Vogel mentions cases where no chemical change was believed to take place, as, for instance, where naphthalene red shows different spectra according to whether it is dissolved in alcohol, water, resin, or is solid or used to colour paper (1878).

This points to some difference in the constitution of the solution. A well-known instance is that of iodine in alcohol, chloroform, or carbon disulphide.

It must be observed that Vogel's work referred merely to phenomena observable in the visible spectrum, to small thicknesses of the absorbing medium, and was not applied quantitatively. Two solutions may give spectra which are apparently identical at one concentration, but spectra quite different when submitted to varying degrees of dilution.

In order to ascertain in what way absorption spectra are related to the chemical constitution of organic substances, it is necessary to examine a wider range of spectrum than that included in the merely visible region, and this may be done by extending the observations into the ultra-violet.

The Ultra-Violet Region.

Stokes, in preparing his experiments for a Friday evening discourse at the Royal Institution, observed that the spectrum of electric light, when a prism and lenses of quartz were used extended no less than six or eight times the length of the visible spectrum. In 1862 he studied the ultra-violet spectra of metals and executed drawings of the lines exhibited by aluminium, zinc, and cadmium. He discovered the fact that certain solutions show light and dark bands in the spectrum of rays transmitted by them, the solutions being colourless; the bands are invisible unless they fall on a fluorescent screen. It was under such conditions that they exhibited light and darkness. The screen used was of plaster of Paris saturated with a fluorescent substance, such as uranium phosphate.

William Allen Miller in 1863, simultaneously with Stokes, described his method of examining the photographic transparency of various saline solutions and organic substances and of depicting metallic spectra. A sensitised photographic plate was used for the reception of the rays of the spectrum, so that they were made to register their own position and intensity. L. Soret invented the fluorescent eyepiece for the purpose of investigating the ultra-violet rays and ascertained the best media for the transmission of rays of high refrangibility. Colourless fluorspar, a rare mineral, was found to answer best, and quartz lenses were achromatised with this. Iceland spar was found to absorb some of the more refrangible rays, and a pure spectrum was difficult to obtain with quartz prisms owing to double refraction, which caused the lines in metallic spectra to be duplicated. Struck by the fact that Miller had examined many organic substances without obtaining evidence of a connection between their constitution and their absorption spectra —the actual words used by Miller were, "I have not been able to trace any special connection between the chemical complexity of a substance and its diactinic power"[*]—it appeared to me desirable that this point should be systematically reinvestigated. L. Soret had already proceeded with work in this direction, by examining and drawing a great variety of organic substances and diagrams of absorption curves. But it was deemed necessary to make a large number of examinations of substances of a comparatively simple constitution, and according to theory closely related, and afterwards gradually to proceed to the study of substances of greater complexity. For such purposes a photographic method alone appeared a practicable one, particularly when comparisons had to be made between substances observed at different times, for the reason that none but photographic records could be absolutely relied upon and stored away for future reference.[†]

The plan of the proposed investigation was to photograph the rays transmitted by molecular proportions of hydrocarbons, alcohols, acids, and esters, either alone as vapour or liquid, or dissolved in some neutral and, in comparison with the substances to be examined, an optically non-absorbent solvent.

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[*] *Journ. Chem. Soc.*, vol. xi., p. 68.

[†] Clerk Maxwell had calculated for Miller the best focal length of lenses of quartz which would give an approximately flat field. His computation made this something over a length of three feet. All Miller's photographs were taken with the plate placed normal to the axis of the lens, but Stokes had shown that the locus of the foci of the different rays formed an arc of a curve or nearly a straight line, lying very obliquely to the axes of the pencils coming through the lens.

It was obvious from Miller's photographs that only one or two rays on each plate were even approximately in focus. To obtain spectra in focus from end to end it was evidently necessary to incline the plate so that the end upon which the red rays would fall, which are of longest wave-length, should be farther off than that upon which the ultra-violet fall which are of shortest wave-length. It was also found experimentally that lenses of much shorter focal length (ten or twelve inches) could be used, giving perfect definition, and, what is still more important, it was found a positive advantage not to have them corrected by fluor-spar or calcite. The plate-carrier was adjusted at an inclination of approximately 22° to the normal; in such a position the rays from the yellow sodium line to the extreme ultra-violet of the spark spectrum of cadmium were simultaneously in focus on a plane surface.

The prism was of quartz cut on Cornu's plan, the method of construction designed to get rid of all double refraction being communicated to me by M. Cornu in a very kindly written letter. The first instrument was constructed in 1878 and the description of it published in 1881. It has been the model for several others. One with two prisms and lenses of 12 inches focus was exhibited by me in the Inventions Exhibition in 1882. At the Jubilee meeting of the British Association at York the spark spectra of iron, cobalt, and nickel, enlarged to twenty-five diameters and printed by the Autotype Company, were exhibited. They are over eight feet in length, and have proved very useful for reference. The photographic process is a point of great importance; the then newly invented gelatin bromide films made by Kennet were alone quite suitable.

It was considered that the metameric esters would afford much information if a sufficient number of them were examined and their spectra compared, and if the acids themselves were not responsive the sodium and potassium salts in solution would serve the purpose, since the alkalies did not affect the spectrum. The general deductions (1879) are now well known, but two points not generally taken into account were well established. First, the extraordinary delicacy of the ultraviolet spectrum in detecting traces of impurities. For instance, pyridine, an invariable impurity in commercial ammonia, is present in the proportion of about 1/30000th. It was proved that the absorption spectra of the normal paraffins prepared with the greatest care by Schorlemmer contained traces of impurities which could not be separated. Secondly, some of the normal alcohols could not be rendered pure by the ordinary methods employed, and great care was necessary in their preparation. It may well be asked that, if such were the case, upon what grounds was it concluded that impurities were present? How was it possible to distinguish between a normal and an abnormal absorption spectrum when no standards of comparison existed? It may be of interest if this question be now answered, as no adequate account of it has been made public. All the substances in any one homologous series were shown to vary in the extent to which the rays at the more refrangible end of the spectrum were absorbed, and the different terms of the series differ solely by the number of CH_2 groups in the molecule; and the greater the number of these the greater the absorption. The extent of the absorption should be proportional to the molecular weight of the substance. Accordingly if repeatedly purifying and fractionally distilling a considerable quantity of material failed to give spectra which were constant and identical, but gave instead spectra which were variable, even in a slight degree, it was evident that the absorption due to the molecule of the substance was interfered with by some impurity.

When, however, it became evident that successive quantities of methylic alcohol, for example, prepared in a certain manner yielded spectra which were practically identical under different conditions, such as thickness of liquid, and that they differed but slightly from that of pure water after the type of which the alcohol is constituted, the conclusion was inevitable that we were dealing with a pure preparation. In short, the longest spectrum obtained under all circumstances and under every reasonable condition could not possibly be the result of accident, more particularly if it could be repeatedly obtained from different specimens of the same substance. The same reasoning applies to the acids and their salts, in the investigation of which similar difficulties arose.

Soret and Rilliet pointed out that in the rectification and prolonged desiccation of the alcohols there is often slight oxidation, which leads to the production of impurities which affect the spectra transmitted by them.

They found that ethyl alcohol is not appreciably less diactinic than methyl alcohol, and both transmitted a spectrum nearly as long as that of water. This was shown by Huntington and me when the usual 25 Mm. of thickness of the layer of liquid were tested. By taking columns of liquid 100 Mm. in length the differences are greater, and they increase with columns of increased length.

The influence of each additional CH_2 in the molecule causes a shortening of the spectrum. This was shown to be due to the carbon atoms and not to the hydrogen. The acids, containing the same number of carbon atoms as the alcohols, have a much greater absorptive power, which is due to the carboxyl group ($C:O \cdot OH$). By the examination of a number of various substances, such as polyhydric alcohols, as glycol, glycerol, mannitol, and various sugars, it was found that, no matter what its complexity, no open-chain compound causes selective absorption—*i.e.*, absorption bands.

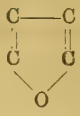
Shortly it may be stated that in the examination of organic substances we have three variations in absorption spectra: First, those of substances the rays of which are freely transmitted, the absorption being at the more refrangible end of the spectrum, and the spectrum of which is readily increased in length by dilution; secondly, those in which the spectra are of the same kind, but the absorptive power is greater, so that they withstand dilution to a much greater extent; thirdly, those spectra which exhibit selective absorption, and which at the same time exert great absorptive power, or, in other words, can undergo great dilution before the absorption bands are rendered visible, and still further dilution before they are extinguished or obliterated.

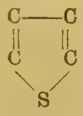
Spectra of the First Variety belong to substances which are constructed on an open chain of carbon atoms, thus:

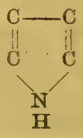
$C \cdot C \cdot C \cdot C \cdot C$ or $C{=}C \cdot C \cdot C \cdot C$ and $C{\equiv}C \cdot C \cdot C \cdot C$.

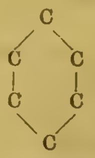
The introduction in place of one or more atoms of hydrogen—of hydroxyl, OH, carboxyl, $COOH$, methoxyl, OCH_3, CO, COH, or NH_2, or of side chains such as CH_3, C_2H_5, etc.—does not affect the character of the spectra, but merely the absorptive power, which is increased when oxygen or an oxygenated radical is introduced.

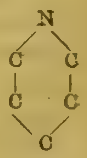
Spectra of the Second Variety are spectra of substances so constituted that the carbon atoms form a closed chain. It is immaterial whether the closed chains are homocyclic or heterocyclic, thus:—

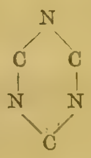

Furfurane.

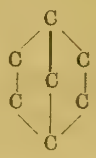

Thiophene.

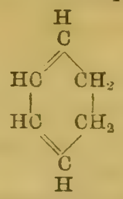

Pyrrol.

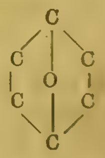

Diketohexamethylene
Hydro-aromatic compounds.


Piperidine.


Cyanuric Acid.

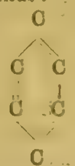

Camphor.

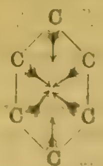

Dihydrobenzene.

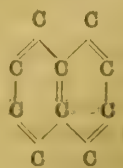

Cineol.

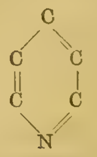
They possess greater absorptive power than open-chain compounds, but do not exhibit absorption bands. It is manifestly the chain or ring structure of the compounds that gives them greater absorptive power, and not the number of carbon atoms in the molecules.

Spectra of the Third Variety.—These show absorption bands, and the substances yielding them are generally constituted on the type of benzene, naphthalene, anthracene, phenanthrene, etc.; but the rings may be either homocyclic or heterocyclic without the character of the spectra being altered, thus:—

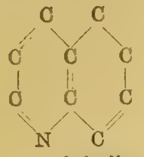

Benzene.


Benzene.

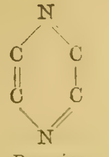

Naphthalene



Pyridine.



Quinoline.



Pyrazine.

If we say that the compounds which are homocyclic are constituted of at least three pairs of carbon atoms doubly linked, which are themselves singly linked together, we may make use of the formula of Kekulé for benzene as the simplest expression of their constitution; if we assume that each of the six atoms is linked to at least other two atoms we adopt what is practically the prism formula of Ladenburg, or the same idea expressed in space of two dimensions. It is difficult to express the physical condition by the Armstrong-Baeyer formula or centric arrangement, because this does not clearly suggest to one's mind what is manifestly the fact, namely, that the carbon atoms in the nucleus of benzene are much more closely condensed or combined together than those of the hydroaromatic series. This condensed condition of the carbon atoms is evident from the higher molecular refractive energy of aromatic compounds and of the specific refractive energy of the carbon in such combinations.

Side chains such as do not exert selective absorption have no influence on the character of the spectra, but they slightly increase the general absorption.

Heterocyclic compounds possess greater absorptive power, both as regards the general and selective absorption, than those which are homocyclic.

The point which I particularly desire to draw attention to here is, that for the first time Kekulé's remarkable benzene theory was supported by definite physical measurements, and the closed-ring formula represented a veritable actuality.

Of Molecular and Intra-Molecular Vibrations.

Johnstone Stoney was the first to show that the cause of the interrupted spectra of gases is to be referred to the motions within the individual molecules, and not to the irregular journeys or encounters of the molecules with each other; and this applies to the absorption as well as to emission spectra. He further advised the use of oscillation frequencies instead of wave-lengths in describing the measurements of spectra. Johnstone Stoney and Emerson Reynolds subsequently examined the extraordinary absorption exhibited by chlorochromic anhydride, the bands in which are evidently harmonically related.

It has already been shown that the hydrocarbons of the aromatic series exert two kinds of absorption—a general and a selective absorption. All the evidence we possess warrants the belief that the general absorption is caused by the motion of the molecules, while the selective absorption is due to the motion within the molecules.

When the molecule of a substance is capable of vibrating synchronously with a radiation the ray received on this substance is absorbed. The absorption is complete if the direction of the vibration of the molecule and of the ray is the same but the phase opposite, and if the number of molecules in the path of the rays is sufficient to damp all the vibrations.

When the quantity of substance in the path of the rays is reduced, the number of molecules present is not sufficient to damp all the vibrations and some of the rays are transmitted. If, however, certain carbon atoms within the molecule are vibrating synchronously with certain rays, we shall have selective absorption of these rays after the general absorption has been so weakened by dilution or otherwise as to allow them to pass.

It is evident, then, that general selective absorption exerted by carbon compounds is due to the vibration of the molecules because the absorption increases with the number of carbon atoms in the molecule; or, in other words, in any homologous series the greater the molecular mass the lower the rate of vibration of the molecule.

It has not been found possible to associate any of the absorption bands of the substances examined with any particular carbon atoms; but the bands in benzene are six in number, or the same in number as the carbon atoms. It has, however, been shown that the rapidity of the intra-molecular vibrations was dependent upon the rate of vibration of the molecules. From numbers representing approximately the mean wave-lengths of the four chief bands of rays absorbed by benzene, naphthalene, and anthracene, and from the velocity of light, the mean rate of the vibrations within the molecules was calculated (1881), the numbers being as follows: —

	Molecular Vibrations.
Benzene	1248^{10}
Naphthalene	1177^{10}
Anthracene	910^{10}

The mean rate of vibration of the rays absorbed by naphthalene is less than that absorbed by benzene, and those of anthracene less than those of naphthalene. It follows from this that the vibrations within the molecules are not independent, but are a consequence, of the fundamental molecular vibrations, like the harmonics of a stretched string or of a bell.

The term absorptive power has generally been used with respect to the extent of rays of the spectrum absorbed, but there is intensity of absorption to be considered. In the case of a vibrating string or tuning-fork greater amplitude of vibration means a louder note; in the case of molecules greater intensity of absorption may be caused by a greater amplitude of vibration in the molecules of the absorbing medium, the number of molecules being constant. But by greater amplitude it is not to be understood that the rate of vibration is increased.

If this be so, then, as the absorption intensity of anthracene and naphthalene is, molecule for molecule, greater than that of benzene, the amplitude of vibration of the molecules of these substances is greater, but the rate of vibration is slower.

From the foregoing it will be observed that where λ is the wave-length $\frac{1}{\lambda}$ is the inverse wave-length, and, omitting the correction for the refraction of air, which is a very small value, it is the oscillation frequency of the ether in a small unit of time, and the most convenient measurement for use in describing spectra. Seven years after the publication of these views Gerard Krüss (1888) dealt with the subject of coloured substances in a similar manner. From the undulatory theory of light deductions may be drawn regarding the inner molecular movements or inter-atomic movements within the molecules, inasmuch as the vibrations of the ether, which fills the intra-molecular space, are a resultant within that space of the velocity and amplitude of the molecular vibrations.

Thus, if λ be the wave-length of a ray emitted by a substance, and v the velocity of light, the number of vibrations, n, which a molecule sends forth by movements of it as a whole and of its parts can be determined by the equation $n = \frac{v}{\lambda}$.

G. Krüss made a series of calculations for coloured substances similar to those which I had made for colourless substances and for ozone.

Curves of Molecular Vibrations.

Observations on absorption spectra should, whenever it is possible, be made with reference to the quantity of substance which produces a given measurable effect. A molecular weight in milligrams or a milligram-molecule is a convenient quantity which may be dissolved in 20 C.c., 40 C.c., or 100 C.c. of any non-absorbent liquid, and observed through thicknesses of the solution varying from 25 Mm. to 1 Mm. in thickness. When a series of photographs have been measured a curve is plotted, which shows the general and the selective absorption of the substance. The oscillation frequencies of the absorbed rays are taken as abscissæ, and the proportional thickness in millimetres of the weakest of a series of solutions as ordinates. The curves are as often as possible made continuous, and they are called *curves of molecular vibrations.*

The curves of the molecular vibrations present very striking features: they are valuable physical constants which enable one to classify and identify substances.

Position Isomerism.

Isomerides of the *ortho-*, *meta-*, and *para-*positions in aromatic substances yield spectra with the absorption bands, differing in position, in width, and in intensity. There is no distinguishing character to be observed in the different isomerides. Isomerism in the pyridine, quinoline, and naphthalene derivatives has not yet been completely studied. In such cases as have already passed under review there is nothing that indicates the positions of the substituted hydrogens.

Stereo-isomerism.

Where isomerism is not due to differences in structure, but simply to the distribution of the atoms in space, we have no means of distinguishing isomeric substances from an examination of their spectra; for instance, benz-*syn*-aldoxime and benz-*anti*-aldoxime yield curves of molecular vibrations which are identical.

Tautomerism.

The possibility of an atom of hydrogen occupying alternative positions in a compound

$$(\mathrm{NH{\cdot}C:O} \leftrightarrows \mathrm{N:C{\cdot}OH})$$

so that it may be united to an atom of nitrogen or of carbon in one instance, or to an atom of oxygen in another, easily gives rise to substances with different characters, the one that of a phenol, the other that of a ketone. One interpretation of the facts observed which has been very commonly received may be stated thus: Certain compounds have in their constitution an atom of hydrogen of a "roving disposition" which at one time will attach itself to an atom of oxygen, or to an atom of nitrogen, and anon it will forsake one of these and unite itself to an atom of carbon. The consequence of this "instability of character" is that when a derivative of the compound is being prepared or sought for by a chemical process, which according to all previous knowledge ought to yield it, the substance brought forth is of a different class, but withal of the same composition; it is, in fact, an isomeride.

According to another theory, the two isomeric derivatives of the parent substance are present in equal proportions in a solution in a state of equilibrium, and upon crystallisation one or other of these assumes the solid form. Taking those cases where a substance has a constitution which it is believed has been correctly ascertained by chemical reactions, and which yields two isomeric alkyl derivatives, it becomes a question as to which of these the parent substance has directly given birth to. The evidence from chemical reactions has in many cases failed to give a satisfactory answer, but the curves of molecular vibrations of such substances afford the desired information concerning the relationship of their constitution to that of their respective derivatives.

Most convincing evidence has been afforded by observations on their spectra, that several of the parent substances are really not what they seem to be.

Thus, isatin and methyl pseudo-isatin yield curves which are almost identical, the sole difference between them being due to the substitution of the alkyl radical for hydrogen, the nature of which difference might have been predicted.

Clearly the parent substance and the pseudo-derivative are of the same nature and constitution.

Carbostyril and methyl-pseudo-carbostyril, *o*-oxycarbanil and its ethyl ether, obtained by boiling with potash and ethyl iodide, are also similarly related, and they possess the ketonic or lactam structure.

On the other hand, methylisatin, carbostyril, and the other ether of *o*-oxycarbanil yield curves which are essentially different from the foregoing, and are enolic or of the lactim type. Generally speaking, the ketonic are more stable than the enolic forms. Dibenzoyl-methane is ketonic, and the tautomeric substance oxybenzal-acetophenone is enolic, and in this instance the enolic form is that with the greatest stability. The two substances yield different curves, and the gradual change of the less stable into the more stable form can be traced by photographing the spectra of the solutions at intervals.

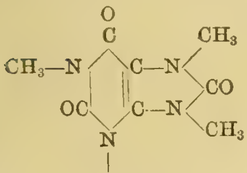
The ethyl esters of dibenzoyl succinic acid are of interest in this connection. There are three isomers known out of the thirteen which are possible, and the spectra of these have been studied. Knorr has given three formulæ for what he designates the α, β, γ esters. Of these, there are two, the and γ forms, which give identical absorption curves: they are of the ketonic type, and structurally identical, but configuratively different, being stereo-isomerides.

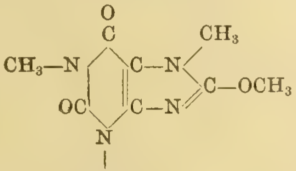
The curve of molecular vibrations of the α ester is quite different from that common to the β and γ compounds. The α compound is of the enolic type, and it changes spontaneously at ordinary temperatures into the ketonic, thus showing that in this case also the latter is the more stable. The transition from the one form to the other was seen to be in progress, and after an interval of only three hours the absorption band of the enolic ester had almost entirely disappeared. In three weeks the transformation had become complete, as was shown by the molecular vibration curve of the α ester being almost exactly coincident with that of the β and γ forms.

Another interesting example is afforded by the study of phloroglucinol, it being a substance with a constitution of a somewhat doubtful character, for owing to the ambiguity of its behaviour towards chemical reagents it is impossible to arrive at a decision from chemical evidence whether the oxygen atoms are present in enolic or ketonic groups. Towards some substances it behaves as a phenol, towards others as a ketone. The doubt also presented itself as to whether phloroglucinol from various sources had the same constitution, and, further, whether there might not be two isomeric forms of the compound present in equal proportions in a solution of the substance. Specimens of phloroglucinol prepared in five different ways from different materials gave curves of molecular vibrations which were identical: this decided the question absolutely; they are one and the same substance. If the constitution of the substance is that of a trihydroxy-benzene or phenol, then the trimethyl ether should exhibit an absorption curve differing but slightly in detail from that of the parent substance; and, furthermore, the latter should exhibit a general resemblance to the curves of pyrogallol and phenol. This was found actually to be the case in both particulars.

Finally, with regard to tautomerism, it may be considered as decided that no evidence has been obtained based upon either physical measurements or chemical reactions of, first, the presence of a "wandering" atom of hydrogen as a characteristic of compounds which exhibit tautomerism; secondly, that solutions of tautomeric compounds do not contain equal quantities of the two substances, or enolic and ketonic forms in equilibrium, and that if both are present one so greatly preponderates over the other that no trace of any but the one compound can be detected; thirdly, it has been observed that some substances do change spontaneously from one form to another, and that this change sets in very quickly after the substance has been dissolved; fourthly, that substances change from one form to another under the influence of different reagents, as, for instance, cotarnine, as Dobbie and Lauder (1903) have shown, in presence of methyl alcohol or of caustic soda, and again in presence of potassium cyanide. In fact, it appears that under the influence of different reagents one or other of the two compounds is the more stable, and the more stable substance is then formed.

A reaction is recorded in the researches of Emil Fischer, where it appears that two tautomeric forms are produced simultaneously from oxycaféine. When the silver salt of this substance is heated with methyl iodide it yields a mixture of tetramethyl uric acid and methoxycaféine, the characteristic groupings in which are — NH — CO — and — N = COH —, the hydrogens being methylated. This is a singular reaction which has not yet been studied spectrographically.


Tetramethyluric Acid.


Methoxycaféine.

The Absorption Spectra of Alkaloids.

The interest attached to an examination of the absorption spectra of the alkaloids is not alone the fact that a means of recognising, detecting, and estimating such substances was devised, but still more that we may learn something of their chemical constitution. Many of the poisonous alkaloids give no distinctive chemical reactions, and in certain cases the means of recognising them are restricted to observations on their crystalline form and their physiological action. The physiological action of certain alkaloids of an extremely deadly character is remarkable enough to prove a means of their identification when the effect on the human subject is under observation. The first experimental work on the absorption spectra of the alkaloids arose out of a celebrated trial for murder, which engaged much attention in the year 1882. It was proved that the lethal drug administered was aconitine.

To identify this substance, of which there are several varieties, it was necessary at that time to resort to physiological tests made upon small animals.

Such a course always affords an opportunity for forensic arguments based upon the evidence adduced. To substitute absolute physical measurements for physiological tests seemed to present facilities for securing justice by removing any doubt of the identity of an unknown substance with the nature of one which is known. Alkaloids yield spectra of two kinds, those which do not and those which do exhibit absorption bands, the difference between the two classes of substances being one dependent on the constitution of the nucleus or ultimate radical of the compound. It is possible not only to identify substances, but also to determine the quantity present in a mixture or solution, and this has actually been done.

Alkaloids which are derived from benzenoid hydrocarbons, pyridine, quinoline, or phenanthrene give evidence of their origin by their spectra. It is therefore advantageous to make a careful study of the absorption spectra of the substances themselves and of the various products derived from them when studying their constitution. It was remarked while the work was in progress that the quinine spectrum curve was probably due to the conjugation of four pyridine or two quinoline nuclei. It is known now to be a substance of a complicated structure containing one quinoline nucleus. It differs from cinchonine only by one methoxyl group in the *para*-position. Observations made on simple bases differ from those made on substitution products, such as alkyl derivatives, in this respect, that the bases are the more diactinic, while addition products, such as hydrogenised compounds, and also salts of the alkaloids such as hydrochlorides, are more diactinic than the simple bases. It was shown by the researches of Alder Wright that different preparations of aconitine can yield substances slightly differing in constitution. On examining them it was shown that these preparations yielded different absorption curves, the variations in which were due to differences in the constitution of the different preparations. To state a particular case of a well-defined character, the aconitine from *Aconitum napellus* and japaconitine from a Japanese aconite prepared by Alder Wright had practically the same absorption spectrum and yielded similar curves; but that of japaconitine was just what might be expected from a substance with a nucleus of a similar constitution, but about twice the molecular weight of aconitine; in other words, a condensation of two molecules of aconitine into one—namely, what was observed in the spectra of morphine and apomorphine, a much greater absorptive power with a similar absorption curve.

It was shown that japaconitine has a constitution modified in such a manner; it being, in fact, what was termed by Alder Wright a sesquiapoaconitine; and the formulæ given for these substances are respectively: Aconitine, $C_{34}H_{47}NO_{11}$; japaconitine, $C_{66}H_{88}N_2O_{21}$, which is in agreement with the spectrum observations. It has, however, been supposed by Freund and Beck that the two substances are identical.

Strychnine and brucine are two alkaloids evidently closely related, but little is known about their constitution: both seem to contain a pyridine nucleus united to what is probably a pyrrolic nucleus, the two constituting a conjugated nucleus resembling that of quinoline. The difference between brucine and strychnine is said to be simply that the former contains two methoxyls. The absorption curves show a wider difference than this, and it was predicted that strychnine appears to be a derivative of pyridine, but brucine is more probably a derivative of tetrahydroquinoline, or an addition product of quinoline of the same character, since there is a remarkable similarity between the curves of the two substances. I would suggest that for the future evidence from their spectra be taken into account in studying their constitution.

Stereo-isomerism in the Alkaloids.

Many alkaloids having the same formula are stereo-isomerides, and those related in this manner exhibit molecular absorption curves which are identical. The following examples are quoted by Dobbie and Lauder (1903) as the result of their investigations: dextro-corydaline and inactive corydaline; narcotine and gnoscopine; tetrahydroberberine and canadine. Where two compounds are known to have the same formula, and one of these is optically active, the other inactive, it may be inferred, as Dobbie and Lauder have pointed out, that they are not optical isomerides if their absorption curves are different; thus canadine and papaverine have the same formula, but their absorption curves show that they are structurally different.

It is a general rule that substances which agree closely in structure exhibit similar series of absorption spectra, while those which differ essentially in structure show absorption curves which are different; and to this rule neither aromatic compounds, alkaloids, nor dyes and coloured substances form any exceptions. That this is so is easily understood from the theory of absorption spectra. It must, however, be distinctly understood that the essential feature of importance in all such investigations is the quantitative relation of the substance to its spectra, whether these relations are based upon equal weights of material or equimolecular proportions in solutions of given volume and thickness.

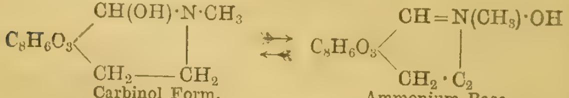
The relationship of morphine, $C_{17}H_{17}NO(OH)_2$, and codeine, or methylmorphine, $C_{17}H_{17}NO\cdot(OH)(OCH_3)$, was shown by their spectra, the latter being a homologue of the former. A similar instance has been investigated recently by Dobbie and Lauder. The resemblance between the spectra of laudanine, $C_{20}H_{25}O_4N$, and laudanosine, $C_{21}H_{27}O_4N$, confirms the view that they are homologous bases. The close agreement of their absorption curves with those of corydaline and tetrahydropapaverine clearly indicates a similarity in structure to that of these alkaloids, but the relationship of laudanosine to corydaline is probably closer than to tetrahydropapaverine, and may be best explained by the formulæ:—

$$\underset{\text{Corydaline.}}{C_{22}H_{27}O_4N - CH_2 + H_2} \quad = \quad \underset{\text{Laudanosine.}}{C_{21}H_{27}O_4N}$$

The removal of a methyl group from such a compound would scarcely cause any appreciable change in the curve of molecular vibrations, and very many cases are known where, when two atoms of hydrogen are introduced into a compound without altering the close linking of the carbon atoms of the ring formation in the compound, the alteration in the spectrum is insignificant.

A particularly interesting example of tautomerism already mentioned has been observed by Dobbie and Lauder in studying the constitution of cotarnine, a substance prepared from narcotine. Three formulæ have been proposed for it: one represents it as an aromatic aldehyde in which one hydrogen is replaced by an open chain containing nitrogen; a second gives it the character of a carbinol base; while a third that of an ammonium base. It has been supposed that in solution it is a mixture of two or all three such substances in a state of equilibrium, but as to what is the formula to be assigned to solid cotarnine the data are insufficient to determine. There are, however, two different solutions of the substance obtainable; that in ether or chloroform is quite colourless, like the solid; but a solution in water or alcohol is yellow. From the molecular absorption spectra of these solutions and of certain derivatives with which they are compared there is very distinct evidence that a solution in alcohol or water contains the ammonium base, while under the influence of sodium hydroxide it assumes the condition of the carbinol form. Moreover, the rate of transformation and the conditions which influence this isomeric change have been studied. It suffices here to state that a solution containing entirely the one form may be converted wholly into the other.

The two formulæ referred to are given below:—



Carbinol Form. Ammonium Base.

(*To be continued.*)

Fragrant Vapour for the Sick Room.

Eucalyptol, 2; oil of thyme, 1; oil of lemon, 1; oil of lavender, 1; alcohol, 90 per cent., 20. Place a teaspoonful in a pint of water and vaporise in the room.—*Bull. gén. de Thérap.*, **144**, 720.

THE POTATO DISEASE AND ITS PREVENTION.

BY "ORRIS."

The above disease in this important agricultural crop first made its appearance in the year 1830, and since that time has been making great increase, the climate and conditions of life being evidently suitable for its successful propagation. It is probably the most destructive parasite known, and the most to be feared, for, owing to its minuteness, it is difficult to proceed against. The cause of this veritable scourge is a fungus, termed *Phytophthera intestans*, which belongs to the natural order Peronosporaceæ and the sub-class *Phycomycetes*. It generally makes its appearance about July and August, and then it may be noticed that the leaves of the plant are dotted with black spots, which gradually increase in size. Viewed under a high power, a number of dark threads (mycelium) are observed, which penetrate the tissues of the leaf by means of the stomata. The infected leaves gradually decay, and a further examination will show the presence of stalk-like bodies (gonidiophores), which arise from the mycelium, each of which bears usually three or four ovoid bodies known as gonidangia. These gonidangia are carried by the wind to other plants, where, after a time, they dehisce, giving rise to the actual propagators of the disease, the zoogonidia, or motile spores. These, when on the young leaves, and under suitable conditions, form a mycelium, which throws up gonidiophores; these in turn form gonidangia, the last of the cycle which spreads destruction being the zoogonidia. Each spore—and an immense number are formed on a leaf—is capable of itself forming the disease, which accounts for the rapid increase of this pest. The results of its ravages are well known, and it is noticed that the leaves soon die under its influence, and shortly afterwards the tubers are found to be diseased, and commence to decay. Decomposition of the tubers may be either moist or dry, but both are probably different forms of the same disease. How to prevent its recurrence is what we have in view, and the author, after various experiments, offers the following suggestions for its suppression:—

Potatoes should not be planted in ground which has been strongly or recently manured. Land of sandy soil, and manured the previous year, is preferable to that composed of soil very rich in humus. Damp-lying ground is not suitable, a good drainage being necessary. Wet weather is most favourable for its propagation, combined with damp surroundings; hence the above reasons. The slicing of potatoes for seed purposes is to be condemned, for continued wet weather causes the tuber to rot quicker than it would in its natural condition, and also facilitates the entrance of any spores, for even if the leaves are attacked there is a chance of the underground produce being able to ripen and be harvested before becoming infected. Pulling up the haulms and burning them is to be strongly recommended. But whether this fungus is a definite species, or whether it is only a stage in life of a fungus which may occur in many different forms, is as yet an unsolved problem. For it is difficult to account for its presence on plants growing in a laboratory, under conditions where wind propagation is impossible. It may be that all fungi are only life stages of the one body, and that the different conditions under which they grow account for the difference in structure and manner of propagation. But further study will probably reveal the true life history of these very important organisms in nature, the fungi.

Chilblain Ointment.

Creosote, solution of lead subacetate, of each, 15 ♏; extract of opium, ½ grain; lard, 1 oz. Mix.—*Pract.*, **69**, 748.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Calcium Salts in Saffron.

Whether saffron contains calcium oxalate or not is a question that has not yet been definitely decided. R. Müller comes to the conclusion that it does not, but that it may possibly contain a calcium salt insoluble in hydrochloric acid, inasmuch as after exhaustion with hydrochloric acid it yields with sulphuric acid crystals that closely resemble calcium sulphate.—*Oester. Zeits.*, **41**, 823.

Toxicity of Tung Oil.

J. Hertkorn calls attention to the fact, which appears to have been overlooked, that Chinese wood oil, or tung oil, produces severe ulceration when brought into contact with the skin. Several instances have occurred in which careless handling of the oil has been followed by the formation of ulcers. Notwithstanding this, several patents have been taken out for the employment of tung oil in cosmetic preparations, an application for which it is totally unsuited.—*Chem. Zeit.*, **27**, 635.

Cativo Balsam.

G. Weigel gives the following further details concerning cativo balsam, which has been previously described by E. M. Holmes and J. C. Umney (*P. J.* [4], **15**, 296). It contains 75 to 80 per cent. of resin acids, 13 per cent. of unsaponifiable resene, 2 per cent. of essential oil. The acid number ranged from 25·27 to 28·13, and the ester number from 126·92 to 131·97. It is soluble in ether and in a mixture of equal volumes of ether and acetic ether; only 96 per cent. is dissolved in alcohol, 90 per cent.—*Pharm. Centralh.*, **44**, 147.

Essential Oil of Abies Sibirica.

J. Schindelmeiser has examined a specimen of the oil of the needles and twigs of *Abies sibirica*, which had the following characters:—Sp. gr. 0·929 $[\alpha]_D - 43° 35'$. It began to boil at 160° C., the temperature rising gradually to 270° C., with decomposition, acetic acid being formed. The oil was, therefore, distilled up to 190° C. under ordinary pressure, and the residue further fractionated under reduced pressure at 20 Mm. The fraction thus obtained under reduced pressure between 90° and 140° C. yielded crystals of bornyl acetate, the yield being 50 per cent. of the original oil. The liquid portion resembled a terpineol. From the large amount of bornyl acetate present, the oil should prove a favourable source of that ester.—*Chem. Zeit. Rep.*, **27**, 161, after *Farmazeft*, **11**, 473.

Uranium Nitrate as an Alkaloidal Reagent.

J. Aloy finds that uranium nitrate is a useful alkaloidal reagent, giving precipitates with most alkaloids, which, when ignited, leave a residue of U_3O_8. Caffeine, theobromine and asparagine are the only alkaloids examined which gave no precipitate with dilute aqueous solution of uranium nitrate. The reaction with morphine is characteristic, a red colour being given by 0·005 Gm. of the base, or an orange yellow colour with less. A 5 per cent. solution of uranium nitrate should be used, and for the morphine test this should be neutralised with ammonia until a precipitate begins to form. The reagent will precipitate 0·0001 Gm. of the following alkaloids:—Pyridine, narcotine, papaverine, codeine, thebaine, narceine, quinine, cinchonine, cinchonidine, strychnine, brucine, cocaine, pelletierine, aconitine, atropine, and cicutine. The precipitates have a more or less intense yellow colour, they regenerate the bases on treatment with alkaline bicarbonate.—*Bull. Soc. Chim.*, **29**, 610.

Test for Saccharin.

W. Wauters draws attention to the following delicate test for saccharin which, however, does not succeed unless it is in a fairly pure state; if a trace of saccharin is warmed with phloroglucin and sulphuric acid a violet black coloration is produced, which on dilution with water becomes deep violet.—*Bull. Soc. Pharm. Bruxelles*, through *Schweiz. Woch.*

Russian Tobacco.

J. J. Pontag has examined a large number of samples of Russian tobacco and has also investigated the products of its combustion when smoked in the form of cigarettes. The proportion of nicotine varied from 0·44 to 3·99 per cent., the average being 2 per cent., and the strength of the tobacco appears to depend upon the proportion of nicotine present. About one-half of this finds its way into the cigarette-smoke, the longer the mouthpiece the less being the proportion of nicotine in the smoke. Pontag concludes that even moderate cigarette smoking must be injurious, since in smoking twenty cigarettes the smoker draws into his mouth 0·09 Gm. of nicotine, 0·011 Gm. of pyridine bases, 0·032 Gm. of ammonia, 0·0006 Gm. of hydrocyanic acid, and 360 C.c. of carbonic oxide.—*Ztsch. f. Unters. d. Nahrungs. und Genussm.*, **6**, 673.

Boiling-point of Petroleum Ether.

In a paper read before the American Pharmaceutical Association, E. H. Gane demonstrated that the lighter petroleum hydrocarbons are changed by dissociation or polymerisation into bodies of different boiling points almost as readily as in the case of the heavier oils. While the U.S.P. describes petroleum ether or "benzin" as a liquid boiling between 50° C. and 60° C., the author has not found any sample on the market which answers this description.

"Aliquot Parts" in the Assay of Nux Vomica.

W. A. Puckner advocates the elimination of all processes involving the use of "aliquot parts" in methods of assay as a matter of convenience. The results of experiments relative to the extraction of the alkaloids from nux vomica show that the aliquot-part method gives correct results apparently through a compensation of errors, that an hour's maceration and subsequent percolation may well be substituted, and that alcohol should be added to the light chloroform ether mixture usually used in the Keller method, since its addition facilitates the extraction of the alkaloids, and also prevents the formation of emulsions in subsequent steps of the determination.—*Proc. American Pharm. Assoc.*, 1903.

Cannabinol.

S. Fraenkel claims to have isolated the active constituent of haschish by a modification of Wood, Spivey, and Easterfield's method. Having ascertained that petroleum spirit entirely removes the active constituent, he extracts with this menstruum, evaporates to dryness, and subjects the residue to fractional distillation under a pressure of 0·5 Mm. The active constituent, cannabinol, is found in the fraction distilling between 210° and 240° C. From this alcohol separates a paraffin, and the remainer is again subjected to fractional distillation. A fraction with a constant boiling point of 215° C. (0·5 Mm. pressure) can thus be isolated; this is cannabinol. Cannabinol is a pale yellow syrup, which becomes discoloured by exposure to the air. In dogs it produced intoxication when administered *per os* or in the form of smoke, but not when subcutaneously injected. German-grown *Cannabis sativa* yielded no cannabinol.—*Archiv. Exp. Pathol.*, **49**, 266, through *Chem. Zeit.*

OUR PARIS BROTHER.

BY REGINALD WILLIAMS.

For the proper comprehension of any subject, no one better than the chemist appreciates the value of comparison. In France the *Pharmacien*, in America the *Druggist*, in England the *Chemist*, stand for pharmaceutics; and, as the respective appellations differ, so does the complexion of the *métier* in the different countries. It is therefore profitable to consider our neighbours, if we would see ourselves.

The Paris pharmacist, then, is a man of extreme conservatism. He has a position of his own in society; his profession has its traditional privileges as well as its traditional duties, and with equal jealousy does he guard both. He is, in his present development, the product of the Code Napoleon; the laws and regulations which circumscribe him are the direct outcome of that law which, a century ago, decided that there should be six schools of pharmacy in France—situated in those six towns wherein were schools of medicine. Of these schools, but three—those of Nancy, Montpelier, and Paris—exist to-day, and the chief of these is the Ecole Supérieure de Pharmacie at Paris. From this Paris school most of the French chemists graduate; it is the largest and most complete school in France, if not, indeed, in the world.

To enter the Ecole Supérieure, the applicant, being at least eighteen years of age, must have the Bachelor's degree, and must also have served for three years with a qualified pharmacist. This preliminary apprenticeship must be a *bonâ-fide* one of actual service; notification of its commencement must be given to the secretary of the school, and the end of each of the three years must be marked by the appearance of the candidate at the school to pass an oral examination on his year's work.

Once entered, the student devotes himself to the task of winning twelve "inscriptions," or certificates of proficiency. The work of the school is so allotted that, by diligence, four "inscriptions" may be obtained in a year. At the end of each year an examination is held, and at the end of the third year, in addition to the annual examination, there is a final examination covering the work of the previous three years. Success in passing this final examination gives the candidate recognition as a qualified pharmacist. Another year in post-graduate work, followed by a thesis on some set subject, entitles the post graduate to teach in any college of pharmacy in France, while still another year devoted to original research confers the "*Doctorat en Pharmacie.*"

Needless to say, in a country where the profession of pharmacy holds so high a place as in France, candidates are not wanting, and the three Superior Schools of Pharmacy can afford to pick and choose among the postulants, the process of selection being greatly aided by a course of study so severe that only the indubitably fit can survive.

Arduous, however, as are the studies, extended as is the course, the Paris pharmacist, once qualified, may rest content. Fate cannot harm him—its vicissitudes do not extend to his profession. "People," he says, "*will* become ill, doctors *must* prescribe," and the pharmacist—well, his charges are, on an average, 30 per cent. above those of the London chemist. What, therefore, can come of such a state of affairs but contentment?

The pharmacien is strictly a dispensing animal. Beyond a very limited number of articles that may be considered semi-surgical in character, his shop contains but the essentials for filling his metric prescriptions. As he remarked to me last week, he likes to conserve the chastity of his store, and he frowns at the thought of dozens of patent medicines and scores of proprietary articles. The presence of the Englishman and, worse still, of the American, is not relished by Jacques Prudhomme—Pharmacien. The things they say and do, and, above all, the things they sell, distress him immensely. The American, with broadcast but judicious advertising, the Englishman, with his overpowering energy and thoroughness, displace too many of his illusions, and the multiplication of the chemist shops of Brother Jonathan and John Bull, which one sees, particularly on the Boulevards, causes his brow to be furrowed o'er with the pale cast of thought.

Now, the typical pharmacien is to be found away from the cosmopolitan centres. There he keeps his shop, and devotes his spare time to his hobby—for almost everyone has a hobby, scientific or in some way related to the profession. He cares little for politics beyond indulging in a few abstractions at the café to which he goes of evenings for billiards, dominoes, or cards. Madame Pharmacien accompanies him as often as not to this Parisian vesper service, and on Sundays Monsieur, Madame, et Bébé walk in the Jardins du Luxembourg, and think of the time when Monsieur shall leave his business to his clerk, and when Bébé in his turn shall be studying at the wonderful Ecole Supérieure.

The Paris pharmacien, then, is a Conservative, and the most systematic man on earth. He was born in accordance to the rule that every pharmacist shall have a pharmacist for a father, and if, now, there are exceptions, it is only because in this thing, as in everything else, the irresistible march of progress is becoming manifest. It is regrettable, from the æsthetic side, that the Anglo-Saxon should distress him, but yet, if competition is the life of trade, if the fittest are to survive, this distress is inevitable. At the most it is only temporary, and in a few years there will be smiles all around, and everyone will be as satisfied as was the cat who swallowed the canary.

ALUMINIUM-BRONZE EVAPORATING BASINS.

BY E. W. LUCAS.

At the present time no doubt many pharmacists are determining the extractives in the pharmacopœial tinctures, fluid extracts, etc. The determinations are most accurately made in platinum basins, but the high price of the metal precludes its use in many cases. As a cheap substitute attention is called to aluminium-bronze, an alloy of aluminium and copper, manufactured by Messrs. F. Braby and Co., of Euston Road, N.W.

The first four basins were taken into the laboratory some months ago, and have seen daily service since. The variation in weight is shown below.

	A.	B.	C.	D.
Original weight..........	57·514	58·134	56·000	55·727
After four months' use ..	57·505	58·132	55·993	55·719

These basins have been used on an ordinary water-bath or in a copper oven for determining extractive in tinctures, etc., and have only been cleaned with spirit and water, afterwards polishing with a soft leather. They cannot, of course, take the place of platinum basins in operations involving the use of acids or alkalies. Not the least recommendation is the rapidity with which evaporation takes place. This is well seen on comparing the rate of conductivity:—

Aluminium-bronze	300
Platinum	70
Porcelain	1

The basins cost fewer shillings than platinum would cost pounds.

THE STUDENTS' COLUMNS.

THE DISPENSING OF MEDICINES (I).

The Nature of Dispensing.

It being an accepted canon that each art and science should be taught from its foundation, it is but proper that the first lesson in dispensing should be assigned to introductory and general explanatory matter. Though most students may have a fairly correct idea of what is meant by the term dispensing, perhaps a few might experience some difficulty in giving a clear and concise definition of it. Pharmacy has been called the art of compounding medicines, and, in the same sense, dispensing may be said to be the art of preparing or mixing medicines in fulfilment of the prescription of a medical practitioner. This definition is perhaps too narrow, for the pharmacist may not infrequently find that as much art is required in the correct preparation of a family recipe as in the prescription of an accredited physician. On the principle of the greater including the less, the family recipes may, however, be ignored so far as these lessons are concerned. The dispensing of a drug may take one of several forms; it may be in the form of a mixture—*i.e.*, a fluid combination of either chemicals or galenicals, or both, either in solution, or partly in solution and partly in suspension—or of an emulsion—*i.e.*, a fluid combination, but differing from a mixture in that it contains one or more ingredients insoluble in the menstruum or vehicle of the mixture, and not readily distributable in it by mere shaking, and therefore requiring special treatment with an emulsifying agent, such as mucilage of acacia, in order to overcome this difficulty—or of a pill or tablet—*i.e.*, a solid combination of drugs or chemicals, either spherical or flato-spherical in shape, and the particles of which are held together by an agent, usually a liquid or a semi-solid, called an excipient; or of an ointment—*i.e.*, a semi-solid combination of drugs or chemicals with a basis which may consist of vegetable or animal fats or oils, or some such-like substance, intended for local application to some part of the body. Dispensing may take many other forms, but, generally speaking, these are but modifications of one or other of the above. Thus a liniment or a lotion differs from a mixture only in that it is a preparation for external use; a gargle or an inhalation, in that it is for local application to the membrane of the mouth and throat; and, whilst powders may be classed with the pills, they differ from these only in that the ingredients are not bound together into a solid mass. The tyro may perhaps ask why it is necessary to have so many forms of dispensing, or why one drug should be administered in mixture form, another in pill form, and another in powder. To answer these questions in detail would require more space than is available at present, and anticipate much that will be more appropriately treated of in subsequent lessons; so meantime the student must be content with the general answer that the characters and reactions of the drug or chemical, the idiosyncrasies of the patient, the indicated treatment of the disease or ailment, and the prescribing habits of the practitioner may each exercise an influence in deciding what form the medicine shall take.

The Prescription.

To proceed now to the prescription, the typical one may be said to consist of four parts, viz.: (1) The superscription, (2) the inscription, (3) the subscription, and (4) the signature. The inscription part consists of the galenicals or chemicals whereof the preparation is made up, and is subdivided into four sections, viz.: (*a*) the basis, (*b*) the adjuvant, (*c*) the corrective, and (*d*) the vehicle. An example will make this quite clear and comprehensible to the student.

Superscription .. = ℞
Inscription ...... = { Magnes. sulph., ℥i. = basis
Magnes. carb., ʒii. = adjuvant
Syr. zingiber., ℥iss. = corrective
Aq. menth. pip. ad ℥vi. = vehicle
Subscription...... = Misce ft. mist.
Signature .... = Sig., ℥ss. ex aq. cap. ter in die post cibos

The student must not imagine that a prescription is incomplete if the inscription does not include a representative of each of the four subsections. It may only contain a basis and vehicle and yet be quite complete so far as the intentions of the prescriber are concerned. Before proceeding to an analytical explanation of this typical prescription, it will be advisable to give it in full Latin and also in English:—

Recipe .... = Take
Magnesii sulphatis, unciam.......... = of sulphate of magnesium, an ounce
Magnesii carbonatis, drachmas duas = of carbonate of magnesium, two drachms
Syrupi zingiberis, unciam cum semisse of syrup of ginger, an ounce and a half
Aquæ* menthæ piperitæ ad uncias sex = of peppermint water, to six ounces
Misce fiat mistura .... = mix, that a mixture be made
Signetur .... = let it be directed or signed
Cochleare ex aqua capiendum ...... = a tablespoonful, in water, to be taken
Ter in die post cibos .... = thrice a day after meals

The student will observe that the superscription ℞ in the ordinary form of the prescription is merely a contraction, for purposes of convenience, of the imperative of *recipio*, I take, and signifies "take." It is addressed to the dispenser, the "tu" being understood. The literal translation would therefore be: "Take thou of magnesium sulphate an ounce, etc." The next point for the student to note is that the ingredients of the mixture are put in the genitive, whilst the quantities are in the accusative case. His knowledge of Latin syntax will at once tell him that the quantity is put in the accusative because it is governed by the active verb "recipe"—take thou an ounce, etc.—and the ingredient in the genitive because it is preceded by the preposition "of" (like "tu," it is understood), and is dependent upon the substantive—the quantity. Coming, now, to the subscription, the imperative mood (of "misceo," I mix) is used because a command is being given, viz., "Misce"—mix. Further, "fiat" is the conjunctive mood of the irregular verb "fio"—I am made—and the conjunction "ut" being understood the sentence is translated—mix, so that, or in order that, a mixture be made.

Directions and Doses.

With regard to the "Sig," which precedes the directions to be writen on the label, it may be looked upon as an abbreviation of the term "Signature" (as above), but more correctly as an abbreviation of the conjunctive mood of the verb "signo"—I sign. It is not an essential part of the prescription, and is often omitted. Thus the typical prescription might have been written: "Misce, fiat mistura cujus aeger cochleare capiat ex aqua ter in die post cibos"; the translation of which would be: "Mix, so that a mixture be made, of which let the patient take a tablespoonful in water thrice daily after meals." The student will naturally ask for an explanation with regard to the dose. It is shortly written ℥ss., *i.e.*, half an ounce; it is fully written, cochleare—literally, a spoonful, and it is translated a tablespoonful. Why this difference? The explanation of these seeming discrepancies is this: The recognised standard doses are minims, ʒi., ʒii., ʒiv. (or ℥ss.), ℥i., and ℥ii., and if each patient were possessed of a graduated measure for these quantities, then they would be translated on the label as so many minims, one fluid drachm, half a fluid ounce, etc. The majority of households are not, however, provided with these measures, and consequently some article common to every household has to be selected as a measure for the dose. Spoons are chosen for this purpose, these being obtainable in any house. The ordinary table or soup spoon is taken as having a capacity of half a fluid ounce; the dessertspoon, of two fluid drachms; the teaspoonful, of one fluid drachm; and the wineglass, of two fluid ounces. Owing to the capacity variation, however, of these, spoon doses are only approximately correct, but, except for very potent preparations, are considered sufficiently accurate for general use. In spite of this, however, it is always advisable to advocate the use of graduated measures for the purpose of measuring doses of medicine, these being more accurate than spoons or even graduated bottles. With regard to the weights used in dispensing, the student must bear in mind that ℥i. means either 480 minims or 480 grains, and must not be confounded with the one ounce weight (437·5 grains) which is used in ordinary retail transactions, and that all liquids are to be measured unless the prescriber indicates the contrary.

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* An alternative form is to use the accusative "aquam"; this obviates the necessity for "understanding" a word such as "quantitatem," on which the use of the genitive "aquæ" must depend.

General Hints.

In concluding this lesson some general hints may be given to the student:—

(1) Before dispensing a prescription always read it over carefully once or twice, keeping a sharp look-out for mistakes, either in compatibility or in dosage.

(2) Write the direction neatly and in a clearly legible style, avoiding ornaments of penmanship.

(3) Never write thus: A tablespoonful 3 times a day in water; but thuswise: A tablespoonful, to be taken in water, three times a day.

(4) Concentrate your whole attention on your work, and weigh or measure out the quantities with care and accuracy.

(5) Cultivate habits of cleanliness and tidiness in the making up of the prescription and in putting on the label, polishing and wrapping the bottle. A dispenser who is careless with regard to such things is apt to be careless in weighing and mixing the ingredients. So the customer sometimes reasons, and consequently decides to try another pharmacy next time.

Other matters of importance will be brought under the notice of the student in subsequent lessons. Meantime, he is advised to practise writing out prescriptions in full Latin and translating them into English, noting the rules of syntax which bear upon the words and phrases used; to make himself conversant with the actual meaning of the various phrases used in prescription writing, such as pro re nata, si opus sit, etc. He will find all such fully explained in Ince's 'Latin Grammar of Pharmacy' and Pereira's 'Selecta e Prescriptis.' He should also commit to memory the tables of weights and measures, both English and metric, and be able to convert the one into the other with facility. The following approximate equivalents are the most useful to commit to memory:—

1 cubic centimetre	=	16·9 minims
1 litre	=	1·76 pints
1 gramme	=	15·43 grains
1 kilogramme	=	2·2 lbs.

NOTE ON AMMONIUM CHLORIDE.

BY F. H. ALCOCK.

For some time past the quality of ammonium chloride seems to have deteriorated, and when required for important analytical work should be carefully examined. When H_2S was passed through an acidified solution of several of the samples I have received lately, a deep brown-coloured precipitate made its appearance; in one case 100 Gm. gave 0·05 Gm. of residue when collected on tared filter papers. Further examination of this precipitate showed that it was of a complex nature, and chiefly consisted of lead (equal to 0·03 per cent. $PbSO_4$) and copper, with traces of arsenic. On subsequently referring to the seller, I was informed that many batches had had to be returned. Can your readers explain the somewhat sudden suspicion which has fallen upon this important chemical and medicinal agent? The B.P. safeguards the freedom of ammonium chloride from these contaminations, but I am inclined to think that it would not often be tested in the ordinary course of business, hence the warning.

DEATHS BY POISONING IN 1901.

The sixty-fourth annual report of the Registrar-General of Births, Deaths, and Marriages for the year 1901 has now been issued, it being considerably later than usual in making its appearance. The deaths during the year numbered 16·9 per 1,000 of the population of England and Wales, this proportion being much less than in 1899 and 1900, when the proportion of deaths per 1,000 living was 18·2. The number of deaths certified as due to poisoning was 1,197, compared with 1,193 in 1900. The deaths by poisoning are roughly classified as follows:—

Cause of Death.	Males.	Females.	Total.
Accident	303	212	51
Foods, Ptomaines	35	30	65
"Industrial" Poisonings	100	5	105
Morphine Habit	3	[illegible]	[illegible]
Murder	—	1	1
Suicide	266	236	502
Deaths by Poisoning	707	490	1,197

Of the 515 "accidental" deaths, 200, as nearly as can be ascertained from the sometimes vague system of classification adopted by the Registrar-General, were caused by scheduled poisons, a percentage of 38·8 per cent. These are indicated below:

Accidental Deaths: Scheduled Poisons.

Poison.	Males.	Females.	Total.
Aconite	3	2	5
Arsenic	17	29	46
Atropine	2	2	4
Belladonna	1	2	3
Belladonna and Opium Liniment	1	—	1
Carbolic Acid	17	16	33
Chloral Hydrate	4	4	8
Chlorodyne	4	1	5
Chloroform	—	2	2
Cocaine	—	1	1
Creosote	1	—	1
Mercuric Chloride	2	—	2
[1]Opium and other Narcotics	43	25	68
Oxalic Acid	4	3	7
Prussic Acid and Oil of Bitter Almonds	4	—	4
Strychnine and Nux Vomica	2	8	10
Accidental Deaths	105	95	200

Of the accidental deaths due to non-scheduled substances, an increased proportion was caused by anæsthetics; otherwise, there was no noteworthy variation from the previous year's figures. As will be seen, the list includes deaths from taking daffodils, matches, and marking-ink. It seems quite useless to expect a separate table for such substances, some of which should surely not be included with medicinal substances which are toxic in small doses, though a commendable step forward has this year been taken by classifying separately the habitual morphine-takers, the deaths from ptomaines, and those caused "industrially."

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[1] Exclusive of nine deaths from the morphine habit (three males and six females).

Accidental Deaths: Non-Scheduled Poisons.

"POISON."	Males.	Females.	Total.
Acetic Acid	1	—	1
Alcoholic Spirits	3	4	7
Ammonia	4	3	7
Anæsthetics	91	45	136
Arsenical Beer	15	15	30
Camphor	1	1	2
Camphorated Oil	1	1	2
Caustic Soda	1	2	3
Caustic Potash	1	—	1
Coal Naphtha	—	1	1
Daffodils	—	1	1
Ferric Chloride	—	1	1
Fumes and Gases (various)	42	18	60
Fungus	—	3	3
Lead	1	—	1
Marking Ink	—	1	1
Matches	—	1	1
Medicine (Overdose)	1	1	2
Mineral Acids	14	4	18
Oil of Tar	—	1	1
Ointment	—	1	1
Phosphorus	2	4	6
Potassium Bichromate	2	—	2
Sulphonal	—	1	1
Turpentine	—	2	2
Kind not stated	18	6	24
Accidental Deaths	198	117	315

Comparing the figures for suicide by poisoning with those of the previous year, the total increase of thirty-eight is principally due to an increase in the deaths from those substances which are still outside the provisions of the Pharmacy Act. Why, in the name of goodness, does the Registrar-General have separate headings for bichloride of mercury, perchloride of mercury, and corrosive sublimate? The scheduled poisons causing death were the following:—

Suicides: Scheduled Poisons.

POISON.	Males.	Females.	Total.
Aconite	1	1	2
Arsenic	—	2	2
Belladonna	2	2	4
Carbolic Acid	60	82	142
Chloral Hydrate	1	—	1
Chlorodyne	1	1	2
Chloroform	1	1	2
Cocaine	1	2	3
Mercuric Chloride	5	4	9
Nicotine	1	—	1
Opium and other narcotics	45	12	57
Opium and Belladonna	—	1	1
Oxalic Acid	34	38	72
Potassium Cyanide	13	2	15
Prussic Acid and Oil of Bitter Almonds	22	2	24
Strychnine, and Nux Vomica	6	7	13
Vermin-killer	3	3	6
Suicides	196	160	356

As may be seen by a comparison of the figures respecting carbolic acid with those of the previous year, no substantial change in the number of deaths from this substance is to be recorded, but the number, as in 1900, is much smaller than in the old days before carbolic acid was added to the Schedule. Among the non-scheduled "poisons" favoured by suicides, the mineral acids retain their pride of place with an increase of eight over the figures of 1900. In addition, one female child was murdered by "Poisons or poisonous vapours, kind not stated."

Suicides: Non-Scheduled Poisons.

"POISON."	Males.	Females.	Total.
Acetic Acid	—	1	1
Ammonia	3	8	11
Antimony Chloride	—	1	1
Creolin	1	—	1
Gases, Fumes, etc.	8	1	9
Lead Acetate	1	—	1
Liniment	—	1	1
Mercuric Nitrate	1	—	1
Mineral Acids	30	29	59
Phosphorus	—	4	4
Potassium Oxalate	—	2	2
Turpentine Liniment	1	—	1
Kind not stated	25	19	44
Suicides	70	66	136

BRITISH ASSOCIATION.

ANNUAL MEETING AT SOUTHPORT.

In the section of the Association devoted to Mathematical and Physical Science the President this year was Mr. C. V. Boys, F.R.S., who, on Thursday, September 10, gave his Presidential address, in which

Radio-Activity

was a principal topic. Mr. Boys briefly reviewed the work of the Curies, Crookes, Ramsay, Strutt, and Dewar, but did not propound any new theory to account for the "miraculous" properties of radium. Another mystery, however, which he thought should be considered in conjunction with that of radium was the mystery of the comet and its tails. The most recent explanation of the comet's tail had been propounded only three months ago by Nichols and Hull, who had investigated the back pressure exerted by the action of light upon bodies on which it fell. Their theory presupposed that the nucleus of a comet would be able, owing to the evolution of gas under the sun's heat, to send out enormous quantities of dust, the finer and lighter the better, so long as it was not unduly small with respect to a wave-length of light. But it was not easy to see why fortuitous dust should be graded of such sizes as to give separate and well-defined tails. It was with some diffidence that the President ventured to draw certain parallels and hazard certain suggestions which he admitted had not yet reached a stage at which detailed comparisons with known comets were possible. It did not seem possible now to contemplate the phenomena of the comet with all the mysteries of radium now so much in evidence without tracing the features in which they resembled one another. By radium, of course, he meant any material with the remarkable radio-active properties that radium exhibited, with such pre-eminent splendour, whether known in the laboratory or not. Whatever might be imagined as to the constitution of a comet, difficulties still remained. All he suggested now was that the curious properties of radium and of similar bodies should be kept in mind. Radium at least supplied the means by which, if the increasing warmth or the tidal action of the sun should awaken its activity, Rutherford's *a*-rays should be shot out at the speed that he had measured of a thousand million inches a second—*i.e.*, one-twelfth the velocity of light. These *a*-rays, according to Rutherford, consisted of helium; they weighed each twice as much as a hydrogen atom, and so the same weight of comet matter that would make one of Nichols and Hull's best particles—*i.e.*, one that would be just visible with a microscope—would be sufficient for about 400 millions of Rutherford's *a*-ray particles, an advantage surely where diffuseness seemed so miraculous. The observations made last month by Sir William and Lady Huggins of the spectrum given by a piece of radium in the air might have some bearing upon the luminosity of the comet. It was possible that the internal motions set up by the separate parts, each pursuing its individual orbit, might produce collisions numerous and violent enough to account for all the light that was seen, and for temperature sufficient to bring out the spectral lines that had been identified. Whether this was so or not, radio-active bodies and their emanations could produce light independently of such action; and these observers had found that in the case of radium in air this light gave the spectrum, line by line, of nitrogen. Was it possible that the enveloping nitrogen had had its atoms so harried by the activity of the radium as to give a response hitherto only awakened by electric discharge? The ability to obtain such a response opened up a new possible interpretation of these spectra, which hitherto had been assumed, with our laboratory experience only to guide us, to have required for their production temperatures above a red heat. If further observation should confirm this, the hydrogen, the hydrocarbon, and possibly even the sodium or iron spectrum that had been observed might have come from cold atoms; and it was not even quite beyond the limits of imagination to picture, not from the comet matter itself, but from loose residual and highly attenuated matter through which the comet was passing.

Discussion.

Professor E. Rutherford opened a discussion on the nature of the emanations from radio-active substances. After reviewing the most salient facts that had been obtained by experiment, he described the theory put forward by himself and Mr. F. Soddy to account for the phenomena, and claimed that it was consistent with all the known facts. This theory attributed the energy required for the observed effects to the instability and consequent disintegration of the atom, a positively charged particle being projected from the atom with a high velocity, and leaving the remainder of the atom in a state of instability, which causes subsequent changes observable in the phenomena of excited radio-activity.

Sir Oliver Lodge said that differences of opinion must necessarily arise as to the validity of Professor Rutherford's explanatory hypothesis, which, as a working hypothesis, he was inclined to support. The instability of the atom had been foreshadowed in the theoretical work of Professor Larmor, who had shown that atoms ought to be unstable. Thus the phenomenon observed fitted into a niche already existing in the theory suggested by physicists, though it scarcely harmonised with the views held by some chemists. But the amount of energy involved in radio-active processes far transcended the range of chemical action.

A contribution by Lord Kelvin to the discussion was read by Sir Oliver Lodge. Lord Kelvin dealt with the three types of rays given off by radium. A simple *prima facie* view was to regard the γ rays as merely vapour of radium, while the β rays seemed certainly to be atoms of resinous electricity, electrons as he had called them. The α rays, according to his recent resuscitation of the doctrine of Æpinus, were atoms or molecules of matter, probably atoms of radium, or perhaps molecules of bromide or radium. The electro-ethereal hypothesis above referred to afforded a ready explanation of the relative penetrating power of the three radiations, and of the fact that each one of them made its existence known to us by conferring electric conductivity on air or on any ordinary gas on which it was present. The free penetration of unelectrified radium molecules (γ rays) through dense liquid or solid matter was to be explained on the assumption that the Boscovichian mutual forces—that was, the chemical affinities and the repulsions—between an atom of radium and the atoms of lead and other permeable substances be absolutely zero, or small enough to allow the known permeation. Taking next the α radiation, the apparent great absorption of the vitreous electric emanation from radium was only apparent. It meant that an atom shot from radium with less than its neutralising quantum of electrons could not go far through a solid or liquid without acquiring the neutralising quantum. The β absorption might be regarded as probably real. Atoms of resinous electricity shot from radium could not be expected to enter a screen of metal, glass, or wood or liquid and leave at the other side, irrespectively of the insulation of the screen and of the radium. Returning to Becquerel's original discovery in respect to uranium—the electric conductivity induced in air and other gases by a radio-active substance—there was a ready explanation in the resuscitation of the old doctrine mentioned. The ordinary thermal motions within any solid or liquid or gas must cause occasional shootings out of electrons from the substance, and the motion of these electrons, under the influence of electrostatic force, must contribute to the electric conductivity of the gas, must, in fact, constitute all of it which was not due to transport of atoms of the gas carrying less than the neutralising quantum of electrons. Thus every substance must possess radio-activity. Radium was 300,000,000 times more active than the most active common material yet experimented with. This enormous radio-activity might be accounted for, because radium was exceedingly polyelectronic; that the saturating quantum of electrons in an atom of radium might be hundreds or thousands or millions of times as many as those of atoms of ordinary material. But this left the mystery of radium untouched—Curie's discovery that it perpetually (?) emitted heat at a rate of about 90 Centigrade calories per gramme per hour. If emission of heat at this rate went on for little more than a year, or, say, 10,000 hours, there was as much heat as would raise the temperature of 900,000 grammes of water 1° C. It seemed to Lord Kelvin utterly impossible that this could come from a store of energy lost out of the gramme of radium in the 10,000 hours. It seemed to him, therefore, absolutely certain that if the results published by Curie and Dewar were correct, energy must somehow be supplied from without. He thought it would be conceded that experiments should be made comparing the thermal emission from radium wholly surrounded with thick lead with that found with the surroundings hitherto used.

Professor Armstrong maintained that there was no evidence to be found in terrestrial experiments to favour the theory of dissociation. In stellar conditions it might be different. He did not accept the view which attributed radio-activity to the internal energy of the atom.

Mr. Soddy maintained that the theory propounded by Professor Rutherford and himself controverted no axioms of chemical theory. The actions were of a different order from chemical actions, and the arguments had an analogy with those by which Bunsen and Kirchhoff detected the presence of new elements by aid of the spectroscope.

Professor Dewar said he had first employed a calorimeter with liquid hydrogen enclosed in vacuum tubes, which had been found exceedingly accurate and trustworthy. By this means he had confirmed the result of Professor Curie on the production of heat by a specimen of radium which was brought by that physicist to the Royal Institution. He described in detail his experiments, especially on the spectrum of this specimen of radium, enclosed in a vacuum tube of quartz When the tube was in the vacuum a continuous spectrum was obtained on a photographic film after three days' exposure. The same effect was found when helium was admitted, both at atmospheric and lower pressures. When, however, air was admitted, he obtained the discontinuous spectrum of nitrogen.

Professor Schuster pointed out that the fact that every physical property hitherto discovered in one element had always been found to be shared by all suggested the possibility that radio-activity might be a common property of all matter. If that was the case, the so-called radio-active bodies might only be distinguished from others—like iron in the case of magnetism—by the enormously exaggerated form in which they possessed the property. The apparently inactive metals might possess radio-activity, but not to a noticeable degree. But the question arose whether in that case the effect was cumulative and should appear in the large cosmic aggregations of matter. There was, indeed, at first sight some analogy both in the case of the sun and of the earth between the effects observed in their immediate surroundings and those noticed in the neighbourhood of radio-active bodies. The earth must be charged with negative electricity, and this charge must constantly be renewed, as the leakage due to the spraying of ocean waves and the hot gases escaping from every chimney would ultimately dissipate the charge. But the normal electric conductivity of the air had only recently been measured, and, according to Elster and Giehl, was such that a body lost about $1\frac{1}{3}$ per cent. of its charge per minute. If the air in the immediate neighbourhood of the ground had this conductivity (which was not quite certain) the earth would lose about half its charge in an hour. We were living therefore in an electric field through which negatively charged particles were constantly driven outward (cathode rays), and which possessed an electric conductivity similar to that found in the neighbourhood of radio-active bodies. The radio-activity of air rising out of the ground or of water drawn out of wells might be the consequence of emanations from a radio-active earth. The similarity of the rays of the solar corona to cathode rays had often been pointed out, and he had maintained for a long time now that the assumption of a greater conductivity of space at times of maximum sun-spots furnished a simple explanation of the connection between sun-spots and terrestrial magnetism. The sun, therefore, like the earth, must be taken to discharge rays which seemed to possess all properties of cathode rays. The possibility of a collective radio-activity of matter which became apparent in celestial bodies should be kept in mind.

Professor J. Larmor said that most physicists were agreed in seeing an explanation of all such phenomena in an electric theory. The divergence arose in questions of detail. Everything depended on the dimensions and configurations of the electrons. Hitherto they had been regarded as mere points, but if they were of finite size they were capable of explaining all the properties of a molecule. It was remarkable that radium could excite in the surrounding nitrogen a bright line spectrum, for this pointed to violent chemical disruption more severe than collisions according to the kinetic theory of gases. Therefore, he thought that Professor Dewar's experiment was most suggestive. There was not absolute conclusiveness about the non-appearance of the helium spectrum; it might merely be faint in comparison with the fluorescence of the quartz envelope. He favoured Professor Rutherford's theory as to the origin of the kinetic energy, supposing it to exist within the atom in the form of rotational motion.

The discussion was continued by Mr. Whetham and Mr. Ackroyd, who described an experiment in which water was admitted into a tube in which was placed barium chloride and the radium compound. From the result he inferred that the energy was due to agencies external to the atom. Professor Rutherford said that the coefficient of diffusion depended on temperature, though the rate of diffusion had not yet been directly measured.

A paper by Messrs. Elster and Geitel, on the radio-active emanations present in the earth's crust and atmosphere, was read by Dr. Lees. The object was to show the different amount of radio-active matter that could be collected from the atmosphere in different localities and over different soils. Radio-active matter was always to be detected, and mostly in the Alps.

Emanations from Gold and Platinum.

The meeting was concluded by a paper by Mr. G. T. Beilby on the intensification of chemical action by the emanations from gold and platinum. When a piece of gold or platinum foil was heated on a glass slip in an atmosphere containing the products of combustion of coal gas, a halo was formed on the glass surface surrounding the foil. This halo did not to any considerable extent consist of metallic particles. It was chiefly made up of the products of decomposition of the glass. If the halo was breathed on, the slight condensation of moisture on the surface dissolved the soluble salts and set free the silica or an insoluble silicate in the form of thin films and spicules. When the water had evaporated a crystalline deposit was left on the surface. A fairly free circulation of the atmosphere surrounding the metal was necessary if well marked halos were to be produced. Effects were shown which were obtained by slight variations of the conditions of the experiment.

In the Botanical Section, Mr. A. C. Seward delivered a presidential address on

Fossil Plants.

Nowhere was the geological record so imperfect as in regard to fossil plants. Very few indeed were known prior to the Devonian period, and the position of most was uncertain, but with it they became more numerous, especially in North America, and its vegetation was a forerunner of the more abundant flora of the Carboniferous. Forerunners of the existing maretails, club mosses, and certain ferns were abundant; in fact, in several cases one appeared to be dealing with embryonic types of the plant world. The flora of these two periods exhibited an evolution, and some of the lower carboniferous plants had an almost world-wide distribution. The Upper Carboniferous plants, though low in organisation, reached a great size, but the exact conditions of their growth was still a matter of dispute. This vegetation also had a wide distribution, as coalfields showed in various parts of the world, and it went on into the next (Permian) period, but in this were found indications of a Northern and a Southern flora. The Trias introduced a new flora in which conifers, cycads, and other gymnosperms were abundant among which the Ginkgoales, now represented by the maiden-hair tree of China and Japan, "a solitary remnant bringing us into touch with a vanished world," must not be forgotten. This type of vegetation continued to the Wealden age, when the third great flora of geologic ages makes its appearance. This had endured from an age earlier than that in which the white chalk of Britain was deposited down to our own day. It seemed to present itself rather suddenly, but that might be due to the fact that we were inevitably more familiar with the lowland than the upland flora; but there was no absolute break anywhere, for just as a descendant of the Palæozoic era still lingered, as above mentioned, so the following era was now represented by the sago palms of the tropics, and by certain Malayan ferns. Our systems of classification did but express the limitations of our knowledge, they had no real existence in themselves.

In the Chemistry Section, Professor Hartley's presidential address gave a summary of twenty-five years' work dealing with the emission and absorption of rays of measurable wave-length, and especially its relation to the theory of chemistry. Spectroscopic methods of identifying alkaloids were alluded to in the course of the address, which will be printed in full in the *Pharmaceutical Journal*.

BRIGHTON ASSOCIATION OF PHARMACY.

SPECIAL MEETING.

Thursday, September 10, 1903, at the Old Ship Hotel, Brighton, Mr. W. H. Gibson, President, in the chair. Notice of the meeting, with invitations to attend, had been sent to all the Brighton chemists, but there was only a very small attendance.

Address by Mr. Glyn-Jones.

Mr. W. S. Glyn-Jones said it gave him great pleasure to be with them once more. He regretted that the Brighton pharmacists did not hold more frequent meetings, as it certainly was very beneficial to the trade in a place like Brighton to hold frequent meetings for discussion of current events and requirements. He proceeded to explain the present position of the trade with regard to recent decisions as to medicine stamp duties. With regard to Somerset House, it was really no part of the duty of the authorities to give opinions as to the liability or non-liability of labels, and he had often wondered how the trade had got them first to consent to mark labels; but the trade had gradually come to the understanding that the Somerset House opinion was law—in fact, in certain text-books the only justification for some of the statements was that at some time someone at Somerset House had given such an opinion. He was of opinion that if the Inland Revenue authorities could only be got to administer the law as now defined it would be greatly to the advantage of the qualified chemist. He was of opinion that chemists should not yet make any change in their labels, but just wait for developments. Companies, unqualified persons, grocers, etc., would want an alteration in the law, and he thought the authorities themselves would be glad to have the matter fought out and settled in Parliament, but chemists would be better off with the Act as it is, if properly administered, and that a settlement by Parliament would only make the situation worse for the qualified chemist. He advocated privacy if the Association had any further discussion on the point. He next spoke of the P.A.T.A. and the C.D.A., and the desirability of all chemists joining. With regard to the Sale of Food and Drugs Acts and the liability which chemists were under, the facts that samples of acetum scillæ had been taken for analysis and required to pass the test for acid strength, and that "sodium carbonate" had been considered by analysts to mean always the exsiccated salt of the B.P., were indications of the unsatisfactory way the Acts were administered. He thought there was a great deal less effort on the part of public bodies to apply the spirit of the Acts than to obtain a conviction.

Mr. Glyn-Jones then invited any questions, and Mr. W. H. Gibson asked: What advantage had the qualified chemist over the unqualified?

Mr. Glyn-Jones replied that there were four separate bases of liability to stamp duty: (1) If the article is patented; (2) If the proprietor claims a secret in making; (3) If a person claims an exclusive right of sale; (4) If the article is or has been held out or recommended for the prevention, cure, or alleviation of any ailment. Qualified chemists may sell without stamp duty any preparation of the B.P., and recommend it, but a company or unqualified man may not. A qualified man may sell "cough mixture," and recommend it as such, provided the formula is well-known and recognised. Antibilious pills and the like no company or unqualified person may sell without stamp, if the Inland Revenue authorities are right; but a qualified chemist may sell them if the composition is mentioned on the label as, say, "Antibilious Pills. Pil. Col. Co.," and recommend them up to the hilt. He thought it would be a good thing for chemists to try to educate the drug-taking public to use B.P. and other standard formulæ in preference to nostrums.

Mr. Savage inquired as to what books of formulæ could be used and be exempt from stamp duty.

Mr. Glyn-Jones said that any formulæ from any standard book could be used and recommended by a qualified chemist without stamp, provided that the purchaser could obtain the same preparation anywhere, and also provided that the preparation had never been held out as a nostrum.

Mr. W. H. Gibson said he thought they had had a very useful explanation, and that he, personally, was very much clearer in his mind on the subject. He thought the Inland Revenue authorities would not quarrel with such good friends as chemists were to them, but would moderate their requirements. He proposed a very hearty vote of thanks to Mr. Glyn-Jones.

Mr. Gwatkin, in seconding, said that they owed Mr. Glyn-Jones a deep debt of gratitude for his efforts on behalf of the trade, and particularly for his attendance there that evening, in spite of the weather.

Mr. Councillor Yates supported the vote, and hoped that the chemists of Brighton would support the P.A.T.A. and C.D.A.

The vote was accorded unanimously.

British Pharmaceutical Conference.

The meeting then went on to discuss the advisability of inviting the British Pharmaceutical Conference to Brighton in 1905, and after some discussion of ways and means, in which a very sanguine feeling was manifested, Mr. Blamey proposed:—

> That an invitation be forwarded to the British Pharmaceutical Conference to visit Brighton in 1905.

It was announced that the sum of £80 had already been promised locally as a guarantee fund.

Mr. Yates and Mr. Gwatkin spoke in favour of it, and on the proposition being put, it was carried unanimously.

A vote of thanks to the Chairman was given very heartily and with musical honours.

Mr. W. H. Gibson then entertained those present, and the remainder of the proceedings were of a social nature.

DEWSBURY & DISTRICT CHEMISTS' ASSOCIATION.

FIRST MEETING OF THE SESSION.

Monday, September 14, 1903, at Dewsbury, Mr. R. Gledhill, President, in the chair.

The West Riding Federation.

Mr. G. Walker, Secretary, read a letter from Mr. R. Broadhead (Secretary of the West Riding Federation of Chemists' Associations). suggesting that it was advisable, before the general meeting of the Federation in October, that the rules of the latter should be overhauled.

Mr. Broadhead said a similar letter had been sent to every association in the Federation. The feeling of the meeting was that the matter should be dealt with by the Council of the Federation, and Mr. Broadhead, after some discussion, said he would bring the matter forward at the next Council meeting, and suggest certain alterations.

Medicine Stamps.

A circular was read from Messrs. Bleasdale, wholesale chemists, York, calling attention to the new stamp regulations, and pointing out what articles would and would not be liable to duty under such regulations.

The President went through Messrs. Bleasdale's list, and enumerated a number of articles which, according to the decision in the case of Farmer *v.* Glyn-Jones, could not be retailed by companies. He thought the new regulations would prove a godsend to chemists.

After other members had spoken, it was decided to discuss the matter further at the next meeting, members to bring labels, so that the subject could be gone into fully.

The Proposed Chemists' Formulary.

The proposal of the Council of the Pharmaceutical Society to issue a new formulary was next considered. Mr. Broadhead said he thought this was a very good idea. He was pleased the Society was waking up to this kind of thing. All present approved of the idea, and a hope was expressed that the book would only be supplied to members of the Society.

Mr. Broadhead proposed the following resolution:—

> That this Association appreciates the endeavours of the Pharmaceutical Society to arrive at some uniformity in the medicines in the B.P., and will contribute to the formulary; and it requests members to bring to the next meeting recipes which they desire to be included in the list.

The resolution was passed unanimously.

It was suggested that the compendium should include the following:—Whitworth bottle, cholera drops, headache pills, tic pills, wind and water pills, corrective pills, diarrhœa mixture, antibilious pills, cough pills, cough mixture, corn solvent, little liver pills, teething powders, infants' carminative, pile ointment, and worm powders.

LEGAL INTELLIGENCE.

Pharmacy Act, 1868.

Proceedings at Hamilton under Sections 15 and 17.

Pharmaceutical Society v. Cassels.

On Friday, September 11, 1903, at the Sheriff Court House, Hamilton, before Sheriff Thomson, Samuel Cassels, ironmonger, of 8, Barn Street, Strathaven, was charged, at the instance of the Registrar of the Pharmaceutical Society with (1) keeping open shop for the sale of poisons, he not being a registered chemist and druggist; (2) selling a quantity of arsenic as an ingredient in a packet of Ness and Co.'s Sheep-dip Powder in contravention of Section 17 of the Act, in respect that (*a*) he failed to label the package with his name and address as the seller, (*b*) he sold the poison to a person unknown to him and not introduced, (*c*) and failed to enter the sale in the poison book or to take the signature of the purchaser.

Mr. Louden, writer, Hamilton, instructed by Messrs. P. Morison and Son, S.S.C., Edinburgh, appeared for the prosecution; and Mr. T. W. Hay, writer, was for the respondent, who pleaded not guilty.

The trial was fixed for Saturday, October 17.

Sale of Food and Drugs Acts.

Camphorated Oil.

On Tuesday, September 15, 1903, at Llanhilleth Police Court, a summons was heard against James Henry Godwin, manager of the branch shop of the Blaina Industrial Co-operative Society at Llanhilleth, for selling camphorated oil not of the nature, substance, and quality demanded by the Act.

The Inspector, called, spoke going to the defendant's shop on August 6, and purchasing three-pennyworth of camphorated oil for the purpose of analysis. The oil was divided into three parts, and upon analysis it was found deficient in camphor by at least 10 per cent.

Mr. George Thompson, public analyst, stated that, although camphorated oil was a volatile substance, he did not think it would ever evaporate to the extent suggested by the defence by storing.

For the defence, it was said that, as the amount of the camphor deficiency was so infinitesimal, it could not have been done to defraud the public. The oil was sold precisely in the condition received from the Co-operative Wholesale Society.

The Bench considered the case fully proved, and imposed a fine of 25s.

Dentists Act.

Unregistered Dentist Fined.

On Monday, September 14, 1903, at Bow Street Police Court, Jacques Flax, of 167, Tottenham Court Road, London, was summoned for advertising in a manner implying that he was a registered dentist.

Mr. Turner, who appeared on behalf of the British Dental Association, said the summonses, two in number, related to an advertisement and a business card, both in the following terms: "High-class artificial teeth at moderate charges. Complete set £2 2s., without springs or wires. Also on ebonite. Ordinary extractions, 1s.; painless extractions, by a new process, 3s. American crown-bridge and bar work. Stoppings in gold and enamel. Mr. Flax, gold medallist, attends personally." The gold medal referred to was not gained at any hospital, as anyone would assume.

Mr. Frampton, for the defence, contended that the defendant had not in any way held himself out to be a qualified English dentist. A great many American dentists carried on their profession in England without being on the register.

Mr. Marsham said he thought the defendant had gone a little too far, although he was not an ignorant man preying upon the public. He would be fined £4 (40s. on each summons), with £3 3s. costs.

Marylebone Police Court.

Charge Against the Manager of a "Drug Store."

On Thursday, September 10, 1903, before Mr. Plowden, stipendiary, a case was heard against Frederick Neal, chemist, branch manager to Needham's Drug Stores, Limited, Edgware Road, London, for exhibiting in his shop-window printed matter of an indecent nature. The case was briefly reported in the *Inset* to last week's issue of the *Pharmaceutical Journal.*

The defendant was represented by Mr. W. T. Ricketts, jun., solicitor.

P.S. Hussey, 8F, deposed that at 9.30 p.m., on August 17, he saw in the shop window of Needham's (Limited) Drug Stores nine parcels with labels attached bearing indecent printed matter relating to certain pills. He entered the shop and told the defendant he should report him for exposing the printed matter to public view. A summons was issued under Section 3 of the Indecent Advertisements Act, 1889.

Cross-examined by Mr. Ricketts, the Sergeant said he was not aware that proceedings had been taken at other courts and dismissed in three different instances under exactly the same circumstances as in this case. Nor did he know that in a fourth case the magistrate at Bow Street dismissed the summons after taking a week in which to consider his decision. He contended that there was no indecency on this label.

Mr. Ricketts said that this was a chemist's shop, and these boxes of pills with the labels complained of were exhibited with other goods in the window.

Witness said that they were quite conspicuous, though there was no big board drawing attention to them. They were quite within view in the centre of the window.

Addressing the Court for the defence, Mr. Ricketts contended that there was an absolute answer to the summons, inasmuch as what was complained of did not come within the Statute. This was not the first time the matter had been before the Courts. It had been discussed at considerable length before Mr. Bros and Mr. Hopkins, and again at Bow Street, where the magistrate took a week to consider his decision, and in each instance the summons was dismissed.

The Magistrate: The same advertisement?

Mr. Ricketts: A similar one. Continuing, Mr. Ricketts pointed out that Section 3 of the Act of Parliament provided that it should be an offence to do certain things, and the words he wished more particularly to draw attention to were the following:—

> (whoever) exhibits to public view in the window of any house or shop any picture or printed or written matter which is of an indecent or obscene nature. . . .

In the absence of the Act of Parliament, therefore, he did not think that the advertisement could be considered indecent or obscene, but for the definition contained in Section 5 of the Indecent Advertisement Act. That section provided that any advertisement relating to certain diseases shall be deemed to be printed or written matter of an indecent nature within the meaning of Section 3 of the Act, showing conclusively that such an advertisement as that in the present case was not considered indecent until this Act of Parliament was passed. Omitted from the section were the words in Section 3: "Any picture or printed or written matter" exhibited to view.

Mr. Plowden: It says if "so as to be visible to a person being in or passing along the street." Is not a shop window a place visible to a person in the street?

Mr. Ricketts observed that the section was passed to prevent advertisements of an indecent character being posted in the street. The Legislature intentionally omitted shop windows.

Mr. Plowden: Do you mean that anything may be put in a window?

Mr. Ricketts: Yes, unless it is in itself obscene. I contend this is not indecent.

Mr. Plowden; Nevertheless, you asked for a lady to leave the Court before the case was gone into.

Mr. Ricketts: That was because I had to ask questions about objectionable matters.

Continuing, Mr. Ricketts remarked that the ruling of the magistrates who had dismissed the previous summonses had never been questioned. The omission from Section 5 of the words he had quoted from Section 3 showed that the latter applied to advertisements that were in themselves indecent, and not to anything of the nature in question exhibited in a shop window, and more particularly in a chemist's shop window.

The Magistrate pointed out that the Act said "exhibits to public view in the window of any . . . shop" anything that was indecent.

Mr. Ricketts suggested that there was nothing in the label that was in itself indecent.

The Magistrate: What you can call it if it is not indecent I don't know. People stop and look at shop windows, and for that reason they are made attractive. Even chemists decorate their windows to attract people. Advertisements of this kind are at least suggestive of indecency. However, I will adjourn the case *sine die* on the defendant undertaking that no more are put in the window.

Mr. Ricketts: Of course, he was misled by reading the reports of the other cases in the trade journals.

Mr. Plowden: It is for that reason that I suggest the adjournment.

Mr. Ricketts asked what defendant was to do with regard to enemas and other things of the kind that were exhibited in the window. He would undertake to keep them out of the window while he was there; he was only the manager.

Mr. Plowden said he would adjourn the summons for a month to see if that was done. He was not sure that Section 3 put away the general words of the section. He was of opinion that this was indecent matter. He would adjourn the case for a month to see what was done.

Mr. Ricketts said his client would undertake not to exhibit them again, and if at the end of the month he determined to ask for his Worship's ruling on the point, he hoped his Worship would give it.

The Magistrate replied that he would do so.

POISONING CASES AND INQUESTS.

The deaths by poisoning reported during the seven days ended Wednesday, September 16, 1903, numbered fourteen.

Poison.	Accident.	Suicide.
Carbolic Acid	—	2
Chloral Hydrate	1	—
Chloroform	2	—
Coal Gas	—	1
Hydrochloric Acid	—	1
Hydrocyanic Acid	—	1
Laudanum	—	1
Oxalic Acid	1	—
"Patent" Medicines	2	—
Tannic Acid	1	—
Tincture of Chloroform and Morphine	—	1
Total	7	7

Carbolic Acid.—A police sergeant, at Glossop, committed suicide by drinking four ounces of disinfecting carbolic acid and a woman, at Sheffield, ended her life in a similar manner.

Chloral Hydrate.—Mr. W. C. Fry, chemist, Taunton, died through taking inadvertently an overdose of chloral hydrate.

Chloroform.—Two deaths occurred under chloroform, a labourer, at Bury St. Edmunds, and an elderly man, at Croydon

Coal Gas.—The manager of the refreshment department of His Majesty's Theatre, London, committed suicide by poisoning himself with coal gas.

Hydrochloric Acid.—A woman, at Tottenham, committed suicide by taking spirit of salt.

Hydrocyanic Acid.—A London merchant committed suicide at Sidmouth by taking prussic acid.

Laudanum.—A joiner at Glasgow committed suicide by taking laudanum.

Oxalic Acid.—At the resumed inquest on the body of a man, who died recently at Wandsworth from oxalic acid poisoning, it transpired that the "Epsom Salt" supplied by a chemist, and wrongly suspected to have been mixed with oxalic acid, had nothing to do with the death. An open verdict was returned.

"Patent Medicines."—An overdose of "patent" medicine taken as a pick-me-up, was the cause of the death of a man at Hoxton. A child at Earlstown died after taking "Mother's

Friend," a preparation sold by a man called Mee. The inquest was adjourned that the preparation might be analysed.

Stone Paste.—A corrosive and strongly acid stone-paste caused the death of a child at Halifax. The child was toddling about in a grocer's shop behind the counter, and found an open jar containing thirty-six pounds of the paste. The grocer did not know the composition of the preparation, which had been bought from a wholesale grocer. The jury added to their verdict a rider recommending that overtures be made to the "Home Office" that stone-paste should be included in the list of scheduled poisons. The coroner said that if the paste did not already contain a scheduled poison, he would communicate with "the Chemists' Society," and if it did, he should write to the police.

Tannic Acid.—A Bermondsey stoker fell into a tank of tanning liquor, and died, apparently from tannic acid poisoning.

Tincture of Chloroform and Morphine.—An unqualified dispenser to a medical man committed suicide at Portsmouth.

Attempted Suicides.—Hydrochloric acid, and laudanum (3), were taken by would-be suicides.

SCHOOL AND COLLEGE NEWS.

Russian School of Pharmacy for Women.—A school of pharmacy for women is about to be established in connection with a lady's pharmacy in St. Petersburg. The pharmacist in question was the first lady to be authorised to practise the profession in Russia.

The Annual Record of the Metropolitan College of Pharmacy, a copy of which has just reached us, should prove of great interest to past students of this college. The booklet, in addition to containing an account of the ninth annual dinner, and the questions asked at the sessional examinations, includes lists of past students now in business and those who are stationed abroad.

West of Scotland College of Pharmacy.—On Tuesday afternoon last, September 15, the students of the West of Scotland College of Pharmacy, accompanied by the Principal, Mr. T. S. Barrie, had a botanical ramble round Giffnock. This district is a botanical students' paradise, as it shows various floras (lichen, moss, and phanerogamic). The company were favoured with splendid weather, and so the outing was enjoyable as well as profitable. No new plants were added to the local catalogue, but many new localities were noted.

School of Pharmacy.—On the evening of Thursday, October 1 at the Horseshoe Hotel, Tottenham Court Road, W., a smoking concert will be held in connection with the inauguration, on the afternoon of the same day, of the session of the School. The series of annual smoking concerts, of which this will form one, do much to establish good fellowship among the students, and deserve hearty support. Intending students should make a mental note of the date, and keep the evening free. With regard to the musical portion of the programme, the "talent" will be mainly local and several past and present "Square" students have already promised assistance.

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

Garden Cities.—Mr. T. H. W. Idris, J.P., L.C.C., is associated with Messrs. Edward Cadbury, W. H. Lever, and others in the purchase of 3,800 acres of land near Hitchin for the first of the suggested new garden cities.

Chemist Fined.—At Berwick, on September 10, Mr. John Brown, chemist, of High Street, Berwick, was summoned for allowing hampers and boxes to stand in front of his shop so as to cause an obstruction. A fine of 13s. 6d. was imposed.

Labelling Syphons.—Alfred Jones, of Handsworth, Birmingham, was on Friday of last week fined 5s. and costs for labelling syphons filled with aërated waters without wearing a face-guard or wire goggles. He had previously been cautioned.

Theft by an Errand Boy.—At Worship Street Police Court, on Monday last, an errand boy was charged with stealing the sum of £11 7s. 10d., the money of his employers, Messrs. Walker and Harris, chemists, East Road, London, E.C. The prisoner was sent to a home, under remand for a week.

The "Doping" Question.—The practice of drugging horses so it is said, is very common in racing circles in this country. According to the *Racing Calendar*, the Jockey Club is to be invited to institute an inquiry into the "doping" question. In other countries the drugging of racehorses is repressed with the utmost severity.

Free Trade and Cork-cutting.—In the course of a police-court case heard on Saturday last, a witness said that cork-cutting was a business which was gradually being ruined by Free Trade The explanation was not accepted by the magistrate as furnishing sufficient excuse for dishonesty on the part of those engaged in the occupation.

Analyst's Report.—Last year, in the Northern Division of Northamptonshire, four samples each of sweet spirit of nitre and camphorated oil, and one each of glycerin and willow charcoal, were taken under the Sale of Food and Drugs Acts. Of these three of sweet spirit of nitre were deficient in nitrous ether, and one of camphorated oil was deficient in camphor. In the Southern Division four samples each of ground ginger and arrowroot, two of sweet spirit of nitre, and one each of camphorated oil and paregoric elixir were taken. Of these two samples of spirit of nitre were deficient in nitrous ether.

The Stamping of Measures.—A correspondent of the *Times* complains of the dumping of foreign glass into this country, which is encouraged, he states, by the fact that in the North of England manufacturers of glass measures get them stamped for 3d. per dozen, though the price fixed by Act of Parliament is 1s. per dozen. Foreigners consign their measures to Newcastle for stamping and flood the British markets with them. "That the law can be broken in favour of manufacturers in the North of England is bad, but that our foreign competitors are allowed to take advantage of local maladministration is insufferable."

A Chemist's Action for Interdict.—In the Bill Chamber of the Edinburgh Court of Session on Wednesday, the 9th inst., Lord Trayner had before him a note of suspension and interdic by Mr. R. Stenhouse, chemist and druggist, Musselburgh, against a hat manufacturer, against whom the complainer sought an interdict with regard to the use of a lane giving access to his premises. Lord Trayner, in view of the respondent's assurance that the reasonable use of the lane for access and depositation of goods would not be interfered with, passed the note, and found it unnecessary to grant interim interdict.

Wills.—Mr. Walter Tom Owbridge, of Hull, chemist, who died at his residence, Cottingham Grange, Cottingham, Yorks, on June 22 last, aged fifty-nine years, Sheriff of Hull in 1896, and a member of the East Riding County Council, left his property in trust for his children, and he empowered his executors to transfer his business to a limited liability company, and he desired them to retain the services of his manager, William Turner. The late Mr. Owbridge's estate has been valued at £112,214 15s. 4d. gross, and at £77,799 9s. 11d. net.—The will of the late Mr. Sampson Taylor Rowe, of St. Ives, has been proved at £3,726 gross.

College of Preceptors' Examination.—At the examination held at Inverurie in July last, five candidates sat, with the following results:—Alex. R. Mackie, a scholar of Inverurie School, passed in English, Latin, French, Arithmetic, Algebra and Euclid, thus gaining the certificate of the college. W. Lee, Fraserburgh, passed in English, this completing his certificates, and similarly James Cameron, Inverurie, passed in Latin and French. Mitchell S. Harvey, Kemnay, passed in five subjects, while Hector Taylor, Aberdeen, passed in Arithmetic, French and Latin. The next examination takes place on December 8, and following days.

Science and the State.—The British Association concluded its meeting at Southport on Wednesday. Reviewing the proceedings, Sir Norman Lockyer's presidential address, which was reported and commented on in last week's issue, may be said to stand out as the most startling of the papers read at the meeting, and at the closing meeting of the general committee it was resolved to urge on the Government the importance of increased national provision for University education. Sir W. Anson, M.P., speaking at Manchester on Wednesday evening, criticised Sir Norman Lockyer's demand for a large expenditure on Universities, and said the proposal began at the wrong end. He thought that unless there were a more widely-diffused desire for education throughout the country, a large addition to the number of Universities would not meet the danger.

Messrs. Wyleys' Annual Outing.—On Saturday of last week the employees of Messrs. Wyleys, Limited, at the invitation of Mr. W. F. Wyley, held their annual outing at the Charterhouse Grounds. The weather was most considerate, and, although the wind was rather cold, the sun shone all the afternoon. About ninety sat down to dinner, after which Mr. Wyley, in proposing the health of the King, said that this was the first opportunity he had had of seeing them altogether since his return from the Antipodes. This journey, made primarily for business purposes, had afforded him much pleasure, by the way, and was eminently satisfactory. The firm had always prided itself on the number of years' service of its employees, and he saw at least one whose long term had exceeded forty years, and he trusted that this proof of the pleasant relationship which existed between himself and the employees of Wyleys, Limited, would continue for many years. Mr. H. W. Jones proposed the health of Mr. and Mrs. Wyley. Afterwards sports, bowls, croquet, etc., were indulged in until dark, and after the distribution of the prizes and three hearty cheers for Mr. and Mrs. Wyley the company separated. A cricket match also took place during the afternoon.

The Use of Methylated Spirit in Scotland.—Dr. Matthew Hay, medical officer of health for Aberdeen, in his annual report to the corporation, directs attention to the growing use of methylated spirit as an intoxicant. The traffic among those who drink it is, he is told, mainly in halfpenny and pennyworths; and as much can be got for a penny as would be equivalent to two glasses of whisky. At a certain grocer's shop in the east end of Aberdeen, where methylated spirit is freely retailed in small quantities, as many as seventy men have been seen to enter the shop within one or two hours in the morning for the purchase of spirit. Each carries the necessary bottle, and after leaving the shop proceeds to a neighbouring water tap to dilute the spirit and then drink it. The effects are much worse than those of ordinary spirit. Not only is there the ordinary intoxication, but there is also a form of stupor somewhat similar to what is observed after taking a soporific drug like opium, and the person is usually unable to work for the rest of the forenoon. Dr. Hay mentions that he is indebted for much of this information to the Labourers' Federation in Aberdeen, who are seriously apprehensive of the great evils arising from the growing addiction to the use of methylated spirit among men in their own ranks. He is told that the practice is as prevalent in other large towns as Aberdeen.

Edible Fungi.—At the fortnightly exhibition of the Royal Horticultural Society, on Tuesday last, a lecture was delivered by Dr. W. C. Cooke on "Edible Fungi." Dr. Cooke treated the subject more from the gastronomic than from the botanical point of view. Remarking upon the varieties known, he said those they were best acquainted with were of four kinds—the mushroom, morel, truffle, and the puff-ball. The most remarkable fact about the mushroom was that there was no sexuality found in the family of them; and their propagation still remained a mystery. In the course of his life he had tasted eighty different species, all of which were worthy of collecting; but as a rule there were few eaten in comparison with the number which might be without inconvenience. The Scaly mushroom he described as one of the most delicious that could be eaten. He considered that many varieties might be propagated, and with very little trouble, and he described the appearance of different species in his garden which he could only account for from the fact that he threw broadcast upon the ground the remains of mushrooms which he had eaten. Mushrooms were difficult to cook properly, and much dislike had been created because of the failure of the cook to deal with them properly. Proceeding to describe edible fungi, he praised the Horse mushroom, which had a full flavour and was preferred by many to the ordinary mushroom. Descriptions were also given of the St. George's fungi, so called because it appeared on that saint's day; of Blewits, very much appreciated in the Midlands; the Blue Cap, the Parasol, and many others.

Portsmouth's Public Analyst and Private Work.—The Public Analyst of Portsmouth having applied for permission to do private work, the Health Committee at the last meeting of the Town Council recommended that the application be acceded to, on the following conditions:—1. No sample under the Sale of Food and Drug Acts to be analysed or dealt with by him privately. 2. No certificate of his to be used for publication. 3. The Corporation to receive half the fees paid him for the private work. 4. The private work is in no way to interfere with his public work. 5. To analyse (without fee) all articles which may be sent to him by the various departments of the Corporation. 6. The above arrangement to be in force for three months, and then to be reported upon. Mr. F. G. Foster (a chemist) said it was distinctly stated in the advertisement that the Public Analyst would be required to give the whole of his time to his duties, and in allowing him to take private work the Committee was therefore breaking faith with the Council. Had they said that private work could have been taken, a far more experienced man would have been obtained for the post. Mr. Palin thought the sphere of the usefulness of the Public Analyst should not be restricted in the manner suggested by Mr. Foster. Dr. Emmett said that what the Public Analyst asked was to be allowed to take in private work outside the Sale of Food and Drugs Acts. Under those Acts anyone could have articles analysed, and the money went to the Corporation. He was analysing 1,200 samples a year. The report was adopted by 17 votes to 4.

Poor Law Guardians and Expensive Medicines.—At the meeting of the Stowmarket Board of Guardians on September 11, a long discussion ensued relative to the question of the supply of expensive medicines to the indoor and outdoor poor. A committee, which had been appointed to consider the matter, stated that they were unable to come to a decision, the matter being a somewhat difficult one in consequence of their inability to decide what were really expensive medicines. A list of those supplied to the Chipping Norton Workhouse had been received from the Local Government Board, and the committee had asked whether the medicines should be supplied in bulk to the medical officers or the Union, or whether the salaries of the officers should be increased by 10 per cent. to allow them to supply the medicines themselves. Mr. G. J. Gostling suggested that in cases where expensive medicines were used, the medical officers should write prescriptions, and have them made up by qualified chemists, and charged to the account of the Guardians in both Stowmarket and Walsham-le-Willows. There were ample facilities for this to be done. Mr. William Wade supported this suggestion, and observed that the separate dispensing of the medicine by chemists was successfully carried on by clubs, charitable institutions, and urban councils throughout the country. He felt this would be the best way to meet the case. Mr. E. Terry suggested that the simpler plan would be to grant the 10 per cent. allowance, because of the difficulty in getting the medicines distributed to patients. Dr. Ward, one of the medical officers, felt that the 10 per cent. increase would be more favourably received. The matter was deferred for a fortnight.

Imperial Institute.—The annual report of the work of the Indian Section of the Imperial Institute has been issued this week, it being the first report since the transfer of the Imperial Institute to the control of the Board of Trade. Mr. Wyndham Dunstan's report shows that the Scientific Department has during the year 1902-3 forwarded to India reports on india-rubber, tobacco, iron ore, and various fibres, and has supplied to the India Office information concerning indigo, Indian tea, and Indian turpentine. Investigations concerning tannin barks, the nature of the poison of *Lathyrus sativus*, the constituents of Indian aconites, and poisonous food plants and food grains are still in progress. With regard to the commercial portion of the work, markets are found through the Institute for Indian products, and the names of producing Indian firms are given when asked for by English buyers. For example, the report states that a London firm of chemists asked for the name of an Indian firm willing to supply *Podophyllum emodi* in quantities from 1 cwt. to 1 ton, and a City broker applied for samples of Indian podophyllum. The latter were supplied, and the broker is so satisfied that the Indian article compares favourably with the American, that he is prepared to buy a trial consignment of 1 ton, if the price is reasonable. Both applications have been referred to India. Detailed information on oils and oil-seeds was supplied on request to a Manchester firm. Students in London may be reminded that in the Eastern Gallery and the Indian Pavilion of the Imperial Institute there are collections of various economic products of India, one group including medicines, drugs and chemicals.

Pharmaceutical Bowling Match at Glasgow.—The annual bowling match between rinks representing wholesale and retail chemists in Glasgow took place on Saturday afternoon, on Queen's Park Bowling Green, two rinks of which had been kindly granted by the directors for the occasion. The weather was delightful, and a most enjoyable and well-contested game resulted in favour of the retailers by 2 shots. The following gives the details of the game:—

RINKS.

Wholesale.		Retail.	
Mr. J. Walker. Mr. Frew. Mr. D. Houston. Mr. J. Cairncross (skip)	19	Mr. G. S. Kitchen. Mr. H. Lambie. Mr. G. Robertson. Mr. W. L. Currie (skip)	20
Mr. D. Sinclair. Mr. W. E. Taylor. Mr. H. Thomson. Mr. W. Greig (skip)	18	Mr. D. Watson. Mr. R. Gordon. Mr. T. Adam. Mr. W. S. Galbraith (skip) ..	19
Shots	37	Shots	39

Refreshments were served in the conservatory, and the result of the game announced by Mr. W. L. Currie, who was also called upon to present a prize in the shape of a gold badge, which Messrs. Burroughs Wellcome and Co. had given for competition. The winner, Mr. D. Houston, was congratulated on the excellent form he had exhibited in all his ties. A hearty vote of thanks was accorded Messrs. Burroughs Wellcome and Co. for their generosity, which was suitably acknowledged by their representative, Mr. W. E. Taylor. Mr. Taylor also presented a beautiful brief-bag to the runner-up in the competition, which was won by Mr. John Walker. A hearty vote of thanks was accorded to Mr. Mungo Wallace for carrying out all the arrangements in connection with the various games. Before separating, Mr. Wm. Greig intimated that he would have great pleasure in presenting two prizes to be competed for next year by chemists in Glasgow and neighbourhood. The arrangements were left in the hands of a small committee, and Mr. Greig was heartily thanked for his generous gift.

Pharmaceutical Reforms in Germany.—Considerable attention is being devoted to the subject of the contemplated legislative reform of pharmacy in the German Empire. It is known that the Government not only proposes to deal with the question of the concessions under which apothecaries carry on business, but also with wider matters affecting the pharmaceutical profession. So far, however, the preliminary work has not been finished; but as soon as it has been completed it is expected that pharmacists will be afforded an opportunity of expressing an opinion on the proposals. The Council of the German Apothecaries' Association has, in the meantime, unanimously adopted various resolutions in relation to the question. The first expresses the opinion that the obligation that a pharmacist, on receiving permission to establish a new apothecary's shop, should pay a suitable tax to the State appears to be justified. The second submits that the abolition of the right of transfer of shops indicates no progress, but rather a retrogression for pharmacy. In order to obviate the existing difficult conditions and to bring about a uniform system, the legality of transferring apothecaries' shops must be recognised. In particular, the free disposal and transfer to heirs of the shops authorised between 1811 and 1894 should not be brought into question. In the third case it is set forth as being urgently desirable that such apothecaries should be excused who appear to be burdened beyond their due owing to excessively high prices (apparently paid-for businesses). The assistance of the State credit is indispensable for a reform in this direction. In the case of shops which are granted the right of transfer in return for the payment of a tax to the State, and also in regard to those which take advantage of the State credit proposed in the third resolution, the sale should only take place with the sanction of the authorities. The sanction is to be given on the basis of legally fixed principles, and after hearing the opinions of trade experts called in for the purpose. The final resolution of the Council proposes that concessions for the establishment of new shops should be regulated by law. The committee of the Apothecaries' Chamber, which is also displaying activity in the matter, recently addressed a communication to the Prussian Minister for Culture (Cultusminister) in regard to the leasing of apothecaries' shops. In reply, the Minister stated that he could not enter into the question at the present time, in view of the pending consideration of pharmaceutical reform. It is said that among the legislative proposals will be one for the introduction of a graduated tax, payable according to the amount of the annual turnover of each establishment.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. J. F. Tocher, F.I.C., was a delegate from the Buchan Field Club to the British Association meeting at Southport.

Mr. William Forster, M.P.S., pharmaceutical chemist, has opened a new pharmacy at 30, Church Street, Seaham Harbour.

Alderman W. Lister, drysalter and manufacturing druggist, of Stockport, has declined an invitation to retain the Mayoralty of Stockport a second year.

Mr. A. Stooke, of 166, High Street, New Brompton, writes to say that the district in which he resides has just enjoyed the distinction of being incorporated as the Borough of Gillingham

Mr. Ralph Wilson, M.P.S., has acquired the drug business previously carried on at the Medical Hall, Wellbank Place, Uddingston, in connection with the practice of Dr. Crawford.

Mr. J. W. Shepherd, pharmaceutical chemist, Market Place, Settle, has taken into partnership Mr. William Walker and Mr. William Towler Walker, chemists and druggists. In future the business will be carried on under the style of Shepherd and Walker.

PUBLICATIONS RECEIVED.

The Wonderful Century: The Age of New Ideas in Science and Invention. By Alfred Russel Wallace. New Edition. Pp. xii. + 526, with 107 Illustrations. Price 7s. 6d. net. London: Swan, Sonnenschein and Co., Limited, Paternoster Square, E.C. 1903. From the Publishers.

A Critical Revision of the Genus Eucalyptus. By J. H. Maiden. Part iii. Pp. 77-90, with four plates. Price 2s. 6d. Published by authority of the State of New South Wales, Sydney. 1903. From the Author.

PATENTS AND TRADE MARKS.*

New Patent Applications.

IMPROVED TUBE FOR FEEDING BOTTLES AND APPLIANCE TO FACILITATE CLEANSING THE SAME (No. 23,146, of 1902).—Walter Foster, 23, Albemarle Street, Hull, and Marcus Reginald Ellis, 2, Ash Grove, Ash Street, Hull. For this purpose the tube, flexible or of indiarubber, is tapered from one end to the other, so that it can be easily turned inside out. To facilitate this a stick is provided to fit the inside of the tube, and the tube is drawn over the siick. The use of vaseline is suggested for lubrication.

IMPROVED PROCESS FOR EMULSIFYING RESIN SOAP IN WATER (No. 23,896, of 1902).—Max Erfurt, Straupitz, near Hirschberg, Silesia. The manufacture of sizing from resin soap is the more difficult the more resin contained in the resin soap, as the resin is not readily emulsified. The object of this invention is to provide a means for more easily emulsifying resin soap in water. Resin soap is heated in a suitable receptacle by means of steam or otherwise. It is then passed on to a measuring vat where the temperature is still further raised. Finally, it is atomised with a steam and water apparatus of the injector type, and in this condition is passed into water, the result being perfect emulsification.

IMPROVED SOLUTION FOR TOUGHENING OR STIFFENING INCANDESCENT MANTLES (No. 15,696, of 1903).—A communication to William Phillips Thompson from the firm of R. Eisenmann and Dr. Josef Bendix, both of 6/7, Muhlenstrasse, Berlin. The present mode of toughening or stiffening incandescent mantles is to dip them in an alcoholic solution of collodion wool (nitrated cellulose). The disadvantage of this method is that collodion wool is not soluble in alcohol, and ether has to be added, thus rendering the solution highly inflammable, and necessitating harassing rules and regulations in the factories. Many attempts have been made to supersede ether, most inventors attempting to use glacial acetic acid (in which collodion wool is soluble). The solution thus formed with glacial acetic acid and alcohol is unsatisfactory, because it does not contain enough alcohol. If the ingredients are mixed in the proper proportions no homogeneous solution is formed, but a mixture containing numerous undissolved particles of collodion wool. The invention consists in the addition of acetone or other ketone whereby a homogeneous solution is formed.

EFFERVESCING LAUNDRY BLUE (No. 15,739, of 1903).—Charles Arthur Allison (a communication from William C. Pope, 114, N. Broadway, St. Louis, U.S.A.). Consists in the production of an effervescent substance for colour purposes, particularly for laundry blue. The following method of manufacture is described:—The blue is composed of two separate mixtures. One consists of 6 lb. 2 oz. of soluble blue, 3 lb. of oxalic acid; the other mixture consists of 13 lb. 2 oz. of carbonate of soda, 4 lb. 11 oz. of tartaric acid, and 6 lb. 11 oz. of citric acid. These are mixed in equal quantities, granulated and pressed into tablets. To granulate it is placed in a pan, preferably over a water-bath, to drive off the moisture, and rubbed through a sieve. The advantage of effervescence is to make the blue rapidly diffuse through the water.

IMPROVEMENTS RELATING TO DISINFECTING TORCHES AND CANDLES (No. 15,864 of 1903).—Henry Harris Lake (a communication from Parke Davis and Co., foot of Joseph Campan Avenue, Detroit, Mich., U.S.A.). Relates to torches or candles for disinfecting purposes, consisting essentially of a body of inflammable and fumigating material with an embedded wick. The object of the present invention is to produce a torch which once lighted will not go out till all the fumigating substance is consumed. In its construction, the wick, preferably flat, is embedded near the bottom of the block (of sulphur). When it is ignited it causes the sulphur to melt and run round the bottom of the block, thus igniting the whole. A recess may be made in the bottom of the block in which the wick may be inserted for storage purposes, etc.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and 'Patent Notes for Inventors' free on application.

Note.—Opposition to the grant of any of the above-mentioned patents must be lodged at the Patent Office, on or before October 26, 1903.

New Trade Mark Applications.

"**WESTRUMITE,**" for a fluid disinfectant, by Percival Lea Dewhurst Perry, 19, St. Dunstan's Hill, London, E.C. 256,265.

"**GURMINE**" ("Germ" disclaimed), for pharmaceutical products for animal use included in Class 2, by Farbwerke vorm. Meister Lucius and Bruning, Hoechst a/Main, Germany. 256,542.

"**SANATOGEN**" ("Sanato" disclaimed), for chemical substances prepared for use in medicine and pharmacy, but not including medicated foods or goods of a like kind, by G. A. Goddon, 313, Goldhawk Road, Hammersmith, W. 255,717.

"**MARTIAL,**" for chemical substances prepared for use in medicine and pharmacy, by John Knight and Sons, Limited, Silvertown Soap Works, Victoria Docks, Essex. 256,005.

"**CAPACHURE**" and device, for a powder for human use as a remedy for headache, neuralgia, and the like complaints, by J. G. J. Goddard, 32, Warwick Street, Barrow-in-Furness. 256,071.

MONOGRAM formed of the letters "A D," crescent device, etc. (combination of devices claimed as the essential particular, added matter disclaimed) for chemical substances prepared for use in medicine and pharmacy, by Alwyne Dyson, Limited, 67, Grainger Street, Newcastle-on-Tyne. 256,101.

"**LIPANIN,**" for medicines for human use, by Johannes Kahlbaum, trading as C. A. F. Kahlbaum, Schlesischestrasse, Berlin. 256,434.

"**PRIZETTA**" ("Prize" disclaimed), for articles included in Class 48 for toilet purposes, but not including preparations for the hair or preparations that could be used for the hair, by George Storton, 106, Wellingboro' Road, Northampton. 254,144.

"**MONKEY BRAND**" and device, for all goods included in Class 48, by Lever Brothers, Limited, Port Sunlight, Cheshire. 256,509.

"**KOLLINA,**" for a preparation (being a toilet article included in Class 48) for application to the skin, by John Birtwisle, Weaste Buildings, Tootal Road, Weaste, near Manchester. 256,460.

Note.—Opposition to the registration of any of the above-mentioned trade marks must be lodged at the Patent Office, on or before Oct. 16, 1903.

LONDON GAZETTE NOTICES.

PARTNERSHIPS DISSOLVED.

Maurice Edmund Arnold Wallis, Charles George Burton, and Elizabeth Ness MacBean Ross, general medical practitioners.

John Cecil Munby, veterinary surgeon, of the firm of Radway and Munby, Radstock House, Lewes, and at Newick, announces that the partnership subsisting between Charles Radway and himself has been dissolved by the death of Charles Radway. Debts will be received and paid by J. C. Munby, who will continue the business under his own name.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

The Drug Sales.

London, Thursday, September 17, 1903.

Undoubtedly a better feeling prevails in the Drug and Chemical markets, and the demand at to-day's auctions was fairly good. Old and new goods were offered. Senna was in good demand and realised slightly higher prices. Honey sold well. Menthol is lower. Cape Aloes, which were in good supply, are lower.

The following table shows the number of packages offered and sold :—

	Offered	Sold.		Offered.	Sold.
Albumen	37	4	Gum Benjamin	107	50
Aloes	110	95	Gum Kino	9	5
Ambergris	6	0	Gum Mastic	5	0
Annatto Seed	14	0	Gum Myrrh	21	0
Areca Nuts	138	20	Honey	161	121
Arraroba	2	2	Ipecacuanha	53	9
Balsam Capivi	6	0	Kola Nuts	6	0
Balsam Peru	9	1	Lemon Oil	13	0
Balsam Tolu	14	0	Lime Juice	17	5
Bark	65	43	Loofahs	2	0
Bay Oil	1	0	Menthol	4	4
Buchu Leaves	29	3	Mowra Oil	100	0
Calabar Beans	5	0	Musk Trimmings	1	1
Canella Alba	14	0	Oppoponax	2	2
Cardamoms	548	266	Orange Peel	13	0
Cardamom Seed	7	7	Orris Root	—	18
Cascarilla Bark	36	0	Peppermint Oil	24	0
Cassia Oil	20	0	Puree	1	2
Castor Oil	14	0	Rose Oil	—	3
Castorum	1	0	Rhubarb	56	10
Cinnamon Oil	4	0	Sapote Seed	1	0
Coca Leaves	21	14	Sarsaparilla	81	37
Colombo Root	79	16	Seedlac	16	16
Croton Seeds	84	0	Senna	297	290
Cubebs	27	0	Senna Pods	13	0
Cummin Seeds	17	0	Squills	26	0
Cuttle Fish	55	2	Strophanthus Seed	12	1
Dragons' Blood	24	5	Tamarinds	6	0
Dried Turtle	1	0	Tonga Root	2	0
Drugs	4	0	Tonquin Beans	12	0
Eucalyptus Oil	49	20	Turmeric	436	50
Gamboge	11	6	Vanilloes	1	0
Gentian	10	0	Wax	488	86
Guaza	10	5	Ylang Ylang	1	0
Gum Arabic	10	0			

ALBUMEN.—Chinese sold at 1s. 7½d., subject.

ALOES.—Most of the offerings found buyers. Socotrine at 64s. per cwt.; fair bright Cape 52s. to 53s.; black hard ditto, slightly drossy, 48s.; and Curacoa 15s. 6d. to 30s., according to quality.

ARECA NUTS.—A few bags fair Ceylon sold at 9s. per cwt.

BUCHU LEAVES.—Two bales, slightly brownish stalky rounds, realised 10d. per lb.

CARDAMOMS.—Better qualities were slightly easier; generally speaking, these were slow of sale. There was a good demand for the lower qualities.

CALUMBA ROOT.—Bright sorts sold without reserve at 14s. 6d. per cwt.

COCA LEAVES.—7 cases good green Ceylon sold at 1s. 2d.; a quantity of inferior quality sold at low rates.

DRAGONS' BLOOD.—A small quantity was knocked down at £7 5s. to £7 10s. This was rather cheap, but the bulk was held at firm prices.

EUCALYPTUS OIL.—20 cases sold at 1s. 1d. per lb. This, according to Parry's analysis, corresponded with the requirements of the B.P. 1898, and contained 67 per cent. eucalyptol. Sp. gr. 0·924.

GAMBOGE.—6 cases slightly damp found buyers at £15 to £15 2s. 6d.

GUM BENJAMIN—Sold with a better demand, both Sumatra, which sold at £6 12s. 6d. for good fair, and Palembang.

GUM KINO.—3 cases Cochin sold without reserve at 5d. to 5½d. per lb.

HONEY—Was in good demand. A quantity of fair Jamaica sold at 20s. 6d., and 26s. 6d. per cwt. was paid for the good quality.

IPECACUANHA.—Cartagena is slightly dearer at 4s. 2d. to 4s. 3d. There was no demand for Rio at the auctions.

MENTHOL.—Four cases Kobayashi sold without reserve at 18s. to 18s. 3d. per lb. This is sensibly lower than the price obtained privately.

OPOPONAX.—Two cases spurious sold without reserve at 28s. per lb.

ORRIS ROOT.—15 bags lean wormy sold without reserve at 15s.

RHUBARB.—There was little demand, and a few cases of the lower qualities only were sold.

ROSE OIL.—Settlings only were sold.

SARSAPARILLA.—Jamaica realised 1s. 2d. per lb., but a few bales were knocked down at 1s. 1d., "subject." Some sea-damaged was also disposed of. A bale of red was bought in at 2s.

SEEDLAC.—Madras realised £5 7s. 6d. to £5 15s. per cwt.

SENNA—Was decidedly dearer, with a very active demand, at from ¼d. to ½d. advance. There will be about 500 bales for next sale, which is small for this time of the year.

TURMERIC.—A number of bags containing an admixture of stones sold at 11s. 6d. Wormy was disposed of at lower rates.

WAX.—Met with fair demand, and sold as follows:—Jamaica, £7 12s. 6d. to £7 15s.; Zanzibar, £6 15s.; Japan, £6 7s. 6d.; Madagascar, £7 2s. 6d.; Calcutta, £6 5s.

General Markets.

In the General Market in Drugs and Chemicals prospects appear much brighter. The fluctuations are not numerous. Cloves and Peppermint Oil are dearer.

ACID CITRIC.—1s. 1d. per lb.

ACID TARTARIC.—Slightly easier. English, on the spot, 1s. 1d. to 1s. 1½d.

ARROWROOT.—No St. Vincent was catalogued at Wednesday's auctions. Natal was bought in at 6d.

BISMUTH CARBONATE.—8s. 1d. per lb.; subnitrate, 7s. 4d.

BORAX.—Crystals, 13s. 6d. to 14s. 6d. per cwt., according to quantity; powder, 15s. 6d. to 16s. 6d.

BROMIDES.—There is no alteration in the market price.

CAMPHOR.—Bells, 2s. 3d. per lb.; blocks, 2s. 3d. to 2s. 5d. per lb., according to weight of blocks and quantity; flowers, 2s. 2d.

CARBOLIC ACID—Continues steady. Crystal, 39° to 40° C., 5½d. per lb.; detached crystals, 39° to 40° C., 6¾d. per lb.; crude, 60° F., 1s. 6½d. per gallon; liquid (95 to 98 per cent.), of pale straw colour, 1s. 2d. per gallon.

CASCARA SAGRADA.—There is no change in position since last week.

CINCHONA BARK.—The half-monthly shipments of Bark from Java amounted to 566,000 Amsterdam lbs., as against 80,000 Amsterdam lbs. last year, and 601,000 Amsterdam lbs. in 1901. At the London auctions, held on Tuesday, the supplies were very small; there was a good demand, however, and the average unit obtained was 1⅜d.; the parity of the last Dutch sale was 1¼d. The next Amsterdam auctions will be held on October 8.

CLOVES.—At the Spice Auctions 6 cases Penang, rather dark, sold at 8¼d.

CODEINE—Unaltered at 10s. per oz.

CREAM OF TARTAR.—98 per cent. foreign powder 88s.

GINGER.—At the Spice Sales only 2 cases Cochin sold. 6 barrels Jamaica sold at 40s. for ordinary small, rather lean.

GLYCERIN.—£3 8s. per cwt. for ½-ton lots.

IODIDES, IODINE, AND IODOFORM—Are unchanged.

MERCURIALS.—Calomel, 2s. 8d.; corrosive sublimate, 2s. 4d.; red precipitate, 2s. 11d.; white precipitate, 2s. 11½d.; mercuric sulphate, 2s. 4d. per lb. The above are Messrs. Howards and Sons' quotations.

MORPHINE.—4s. 6d. to 4s. 8d., according to quantity, are the prices still quoted for the Hydrochloride.

NUTMEGS—Firm at the Spice Sales. West Indian 86's sold at 1s. 6d. to 1s. 7d.

OIL OF CLOVES.—English has advanced 1d. per lb., and the price now quoted is 2s. 10d.

OPIUM—Is very quiet; the position in all qualities remains unchanged. There has, however, been a demand for Persian at old prices.

PEPPERMINT OIL—Is dearer, and the crop is considerably less than was anticipated. 12s. 6d. is the price quoted for H.G.H., and 10s. 6d. to 11s. is asked for tin oil.

QUICKSILVER.—£8 7s. 6d.

QUININE—Is nominally quoted at 1s. per oz. for German makes in the second-hand market.

SHELLAC—Firm, but buyers are holding back. Fair TN Orange is quoted at 178s.

SODIUM BICARBONATE.—£7 5s. per ton, landed. Howards', 45s. per cwt.

SULPHATE OF AMMONIA.—£12 10s., Beckton terms.

Foreign Markets.

CAMPHOR—Has been introduced into Seychelles this year from Mauritius and Ceylon. It is making good growth even on the sea-shore, and is to be recommended as an economic plant in such places as Seychelles, where, owing to the climate, the annual leaf production is enormous. Planted in hedges or bushes, six feet apart, camphor trees can give good returns by plucking young twigs and leaves, which yield by distillation 1 per cent. camphor, and nearly 2 cwt. per acre.

CARDAMOMS.—The Mysore and Malabar varieties have been successfully introduced into Seychelles from Ceylon, and seedlings are at present being distributed to planters. This plant should grow easily in the sheltered and shaded valleys that are so numerous on the highlands of Seychelles. The Malabar variety would very likely succeed even on the sea-shore.

PICKLED PEELS.—The trade in brined lemon and orange peels and lemon and orange skins plays an important part in the commerce of Messina. The method of pickling these peels is very simple. The lemons and oranges (according to Mr. Consul Sidney J. A. Churchill) are brought down from the gardens to Messina, they are then cut in halves, and put in pipes and filled up with sea water; they are allowed to remain in the sea water for four or five days until the fruit ferments, they are then taken out and the sea water thrown away, the fruit is weighed into other pipes (about 770 lb. being put into each cask), and about 85 lb. of Trapani salt is added, the pipes are then filled up with fresh sea water, and, after being re-coopered, the process is completed and the pipes are ready for shipment.

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

The Drug Habit.

I read with very great interest your editorial note on "The Drug Habit." It is hardly necessary, in the pages of our Journal, to draw attention to the great responsibility and difficulty—without mentioning anxiety—attached to our retail dealings in the poisonous drugs: cocaine and morphine, or opium. Would it not be possible—nay, is it not desirable—for the Council, backed by a definite mandate from the members of the Society, to approach the authorities with a scheme for the restriction of the sale and dispensing of these drugs? (I would even include all hypnotics and sedatives.) Some such idea as the following occurs to me:—

> That no one of the drugs specified be allowed to be sold, except by authority of a doctor's prescription, the doctor to be known by the chemist who dispenses. The prescription not to be repeated except by the authority of the doctor, such authority to be conveyed in general terms—*e.g.*, "to be repeated —— times," or else by initialling and dating for each repetition.

I am aware of one objection to this scheme—viz., that most chemists have old customers who go to doctors unknown to them, and that, therefore, in cases of *bonâ-fide* illness, such a scheme would become, on occasion, vexatious. But then the doctor's prescriptions would, at any rate, be familiar to the chemist, and he would be cognisant of the fact that the case was a genuine one. In doubtful cases he could refer to the doctor. What little trouble this would occasion we owe, I think, to our position as the legally-constituted "guardians of the public safety." Finally, I would suggest a penalty for infringement of the rule: the offending member to be struck off the Register. C. E. Franklin Vallet, Ph.C.

Hampstead, September 11, 1903.

The Proposed Assistants' Guild.

Mr. Pickering's proposal for an Assistants' Guild deserves the earnest consideration of chemists and assistants. I do not think that assistants are disposed to qualify and serve the corporations that are outside the Pharmacy Act, but in many cases the only option is slavery and starvation. No doubt in England the indoor system is a wrong one, as "Lex" points out. We know nothing of that in Scotland, but it is to be regretted that certain firms in our Scottish towns, who can well afford to pay assistants a reasonable salary, still offer them the meagre wage paid thirty years ago. Chemists must be prepared to pay assistants at least as well as the stores. Mr. Pickering would do a good service to pharmacy by obtaining information regarding salaries paid in London and the provinces.

Edinburgh, September 10, 1903. W. S. Glass.

When a person writes of another in the manner "P. N. J." does of me it would be more honourable if he put his name to his letter, and not shield himself behind initials which may not even give a clue to his identity. If he has the courage of his convictions, why does he hide his name? It is not usual to take notice of such statements as he makes when they are anonymous, but in this case I must. It is not a fact that I have any superfluous spare time, nor is it a fact that previous efforts for the welfare of assistants have been a failure. I am not going to dispute "P. N. J.'s" superior judgment as to my fitness, for he thinks he knows. However, if he will put in an appearance on the 24th instant he may discuss the whole subject. For my part, I shall be pleased to welcome him and many more.

London, N.W., September 14, 1903. C. E. Pickering.

Actinic Bottles?

In the advertisement of the "Ideal Bottle" it is stated as one of its advantages that it is made in "actinic" green glass; in your notice of the same bottle on p. 412 you also make use of the same expression. In Messrs. Maw's list they also refer to "actinic" bottles. Surely this must all be an error or oversight. What is wanted, and what is probably intended, is exactly the reverse—*i.e.*, a *non-actinic* bottle. Fancy developing a photographic negative with an "actinic" lamp!

Croydon, Sept. 14, 1903. J. H. Baldock.

Traffic in Poisons.

In reading over some of the pharmacy laws in Holland in the Journal of September 5, I was particularly impressed with Article 29 *re* sale of poison by auction. A few weeks ago I attended a chemist's sale at Rotherham. Parcels of drugs were piled on trays, then held up to the highest bidder, the auctioneer making such remarks as "I don't know what any of them are," or "If I was an undertaker I would give you sixpence to buy these." They were freely knocked down to whoever the highest bidder might be. I bought one mixed lot, and found it to contain several scheduled poisons. Some time ago I remember reading of a poisoning case where a bottle bearing the label of a prominent wholesale house was found containing prussic acid. It was quite impossible to trace its origin. May not some of these untraced poisons get into people's hands from such sources as I have described?

Woodhouse, September 10, 1903. Wm. Wolstenholme.

Information Wanted.

Address (X. Y.—95/14).—Can any reader give the address of Andrew Jergens Co., soapmakers—the London agency address?

BIRTH.

Morris.—On September 12, the wife of Herbert Morris, M.P.S., Newport (I.W.), of twin boys.

DEATHS.

Fry.—On September 12, William Cattle Fry, Chemist and Druggist, Taunton. Aged 55. Mr. Fry, who had been a member of the Pharmaceutical Society since 1899, had suffered from sleeplessness, for which he was in the habit of taking bromidia. On the Thursday night he was unable to sleep well, and it is supposed that early on Friday morning he made up a sleeping draught containing chloral, and inadvertently took an overdose.

George.—On September 12, William Albert Watkin George, Chemist and Druggist, Hirwain. Aged 40. Mr. George, who was a native of Hirwain, had been a churchwarden at St. Lleurwg's Church for several years, and was much esteemed in the district. He died suddenly, the result of a fit.

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Sale of Spirit (R. K. S.—95/20).—You are not entitled to sell either spirit unless you hold an excise licence.

Labels (W. M.—95/17).—The names "Antiseptic Foot Powder" and "Astringent Mixture" will not incur liability to medicine stamp duty.

Testing Solution (R. K. S.—95/22).—Your inquiry is too vague. Ask for a specimen of the solution, and determine its composition by analysis.

Reindeer Gut (J. B. S.—95/8).—You will find detailed information on gut-spinning in the second series of Spon's 'Workshop Receipts' (Spon, 5s.).

Medicine Stamp Duty (R. K. S.—95/21).—Read the article at page 322 (*P. J.*, August 29, 1903). We cannot afford space to repeat information continually.

Labels (W. S.—95/27).—The word "teething" in the first label renders it liable, but there is nothing in any of the others to which exception can be taken.

Stamp Duty (R. B. C.—95/26).—The pharmacopœias of the London hospitals will be regarded by the Inland Revenue authorities as well-known books of reference.

Powder in Cartridge (A. J. F.—95/1).—It appears to consist of saltpetre, charcoal, and some other vegetable powder, but we are unable to determine its exact composition.

Tooth Extraction (R. R. L.—95/18).—We do not know of any institution where lessons in tooth extraction are given, except as part of the regular dental curriculum.

Life-History of Fern (R. K. S.—95/22).—Your friend had better study the subject practically, with the aid of a suitable text-book. Your verses render the facts far from clear.

Aperient Powder (G. C. R.—94/34).—The use of the wrapper for "Aperient Powder" will not incur liability. We hope to be able to answer your question about the Compendium of Medicines early next month.

Benefit Society (A. F.—95/15).—We do not know of any such Society as you describe, but a scheme on somewhat similar lines has been devised by the Sun Life Assurance Company, 63, Threadneedle Street, London, E.C.

Hair Dye (R. R. L.—95/18).—Try the following:—Silver nitrate, 1 oz.; copper nitrate, 60 grains; solution of ammonia, *q.s.*; distilled water, 8 fl. oz. Dissolve the salts in the water and add solution of ammonia until a clear liquid results.

Acetic Acid as a Menstruum (W. W.—95/13).—You will find further information on the subject in the *P.J.* of April 3, 1897, p. 288; April 30, 1898, p. 409; July 14, 1898, p. 49; January 1899, p. 25; March 25, 1899, p. 287; and July 21, 1900, p. 57.

Publication of Formulæ (R. H.—95/38).—You have no occasion to be alarmed, as the 'Compendium' will be published in ample time to enable you to get your labels printed. Publication in the Journal would not satisfy the requirements of the Board of Inland Revenue.

Rose and Lanolin Cream (W. G. H.—95/25).—Dissolve hard soap, 120 grains, in distilled water, 2 fl. oz., by the aid of heat; then mix in a warm mortar with lanolin and glycerin, each 2 oz., and perfume to taste with otto of rose, with or without the addition of a little oil of neroli.

Formulary (J. G.—95/40).—The Pharmaceutical Society's 'Compendium of Medicines' will be regarded by the Inland Revenue authorities as an official publication, and compounded medicines for which formulæ are given therein will be regarded as "known, admitted, and approved remedies."

Headache Powder Label (J. E.—95/12).—We find on inquiry that the label was marked in error, the statement of the ingredients, in small type, having been overlooked. If you have stated the names of all the important ingredients of the powder, you may regard the label as being not liable.

Compendium (C. J. A.—95/35).—It is impossible to make any definite announcement on the subject until after the meeting of the Council next month, but we may remind you that the Council has decided, definitely, to produce the book (*vide P. J.*, August 8). The matter was referred to a committee, in the ordinary course, to consider ways and means; if you have any suggestions to make, you should send them up for consideration at once.

Non-Alcoholic Tinctures (W. H.—221/32).—No special formulæ are required, as you can make any of these preparations by substituting for the alcoholic menstruum in the B.P. formula the following mixture:—Acetic acid, ½ fl. oz.; glycerin 5 fl. oz.; distilled water, sufficient to make 20 fl. oz. Proceed as directed in the B.P. monographs. In the case of certain drugs better results can be obtained by substituting for the crude drug an equivalent quantity of liquid extract (1 in 1).

Calendar for the Week (Sept. 20-26, 1903).

Days of M	Days of W	Events of the Week.	Sun Rises	Sun Sets.
20	**S**	**Fifteenth Sunday after Trinity.**	5.43	6.5
21	M	●New Moon, 4.31 a.m.	5.44	6.2
22	Tu	Bradford Chemists' Association, at 9 p.m.	5.45	6.0
23	W	Royal College of Physicians, incorporated 1518.	5.47	5.58
24	Th	Barnsley Chemists' Association, at 7 p.m.	5.49	5.55
		Plymouth Chemists' Association, at 9 p.m.		
25	F	Lucknow Day (1857).	5.51	5.53
26	S	St. Cyprian.	5.53	5.51

⁂ Fuller particulars concerning meetings of pharmaceutical associations are printed in the *Inset*.

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Baldock, Barker, Barrie, Bell, Bennett, Betty, Cocker, Currie, Druce, Fairweather, Finlay, Flood, Gibbins, Gill, Glass, Greenwood, Hibbert, Hindle, Jackson, Kiddle, Lees, Lewis, Lyon, MacEwan, Matthews, Morris, Philipon, Priestley, Rigby, Rose, Sergeant, Shepherd, Smith, Spencer, Stead, Stedman, Stephens, Stooke, Townley, Turner, Vallet, Weir, White, Whyte, Williams Wolstenholme.

Telegrams "PHARMACEUTICAL JOURNAL LONDON"
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Annual Subscription, 20s. Post Free; Single Copies, 4d. each, by Post, 4½d.

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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, September 24, 1903.

The *P. J.* Inset Should be Carefully Preserved This Week.

In the Students' Columns appears an article dealing with the three States of Matter—solids, liquids and gases—and suggesting lines on which the subject should be studied.

The Paper on Absorption and Emission Spectra read by Professor Hartley to the Chemical Section of the British Association is concluded in this issue. The first part appeared in the Journal last week.

The Annual Meeting of the Bradford Chemists' Association was held on September 22. The officers for the coming session were elected. Alderman Henry Dunn is the new President of the Association.

The Burnley Chemists' Association held a meeting on Thursday the 17th inst. The President, in introducing a discussion on Medicine Stamp Duty, advised chemists to watch the Journal and see how matters developed.

At a Meeting of the Preston Chemists' Association, held on Tuesday of this week, the medicine stamp question was discussed and formulæ for submission to the Pharmaceutical Society were considered and a number were selected.

The Various Local Associations of Grocers throughout the country will, it seems likely, be giving attention during the coming session to the question of stamp duty on proprietary medicines. The Grocers' Federation has already been approached on the subject from more than one quarter.

Light is Thrown on the methods of American advertising quacks. One of these "Doctors"—by name Kidd—with whom a correspondent of the Journal has been in communication, diagnosed the latter's case as "a serious one," without ever having seen him, or without knowing anything of our correspondent's symptoms.

Three Prosecutions under the Sale of Food and Drugs Acts are reported; in each case a penalty was inflicted. The articles concerned were camphorated oil—deficient in camphor to the extent of 62 per cent.,—sweet oil, and sweet spirit of nitre certified to contain an excess of water to the extent of 1·04 per cent.

Readers of the *Pharmaceutical Journal* will learn with deep regret of the death of Mr. Barnard Proctor, which occurred on Tuesday, September 22. Mr. Proctor was formerly a member of the Council and a member of the Board of Examiners of the Pharmaceutical Society. He was one of the founders of the British Pharmaceutical Conference, and had been lecturer on pharmacy to the University of Durham.

The Pharmaceutical Journal Formulary is now in course of publication, the first instalment appearing as a special supplement to this week's issue. The title selected for the work is the single word 'Recipes.' In order to satisfy the requirements of the Board of Inland Revenue with regard to the sale of known, admitted, and approved remedies which are held out or recommended by labels, advertisements, etc., for the prevention, cure, or relief of any disorder or complaint afflicting the human subject, it will be sufficient—in the case of formulæ included in the book—to quote on the label for any such preparation, after the name of the article, the title "Recipes," or the initial "R," together with the registered number of the formula for that particular preparation.

The Markets in Drugs and Chemicals continue quiet, and there are few fluctuations to record. Quinine is dearer; American Peppermint Oil continues to advance in price; Japan Oil is also firmer. Ergot of Rye is booming.

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THE MEDICINE STAMP DIFFICULTY.

A very large number of formulæ for known, admitted, and approved remedies sold by chemists and druggists having now been received and registered, the first instalment of the collected formulæ is published this week in the form of a supplement to the *Pharmaceutical Journal.* The publication of further instalments will take place weekly until the stock of formulæ is exhausted, and, on binding the various supplements into a single volume, readers of the Journal will possess a unique collection of formulæ which have been tried and have stood the test of experience. This collection must not be confused with the 'Compendium of Medicines,' which the Council of the Pharmaceutical Society has decided to publish, either under that title or some more suitable designation. It must be regarded simply as a register of duly authenticated formulæ sent in by readers of the Journal, and published without any official expression of approval. It would obviously be quite out of the question to publish, in a work issued by authority of the Council, the whole of the formulæ which have been received. Many of them, indeed, are of a character which absolutely precludes any such idea being entertained. A selection of ailment-named remedies may not inconceivably be included in the official book, but no decision has yet been come to on that point, and no selection of the kind could be expected to meet the needs of the situation. The title of the present collection of formulæ is the single word 'Recipes,' so that, in order to meet the requirements of the Board of Inland Revenue in regard to the sale with a recommendation of any known, admitted, and approved remedy, it will only be necessary to quote on the label, after the name of the preparation, the initial letter of the title and the registered number of the formula. Since the letter and number can easily be written on any existing label, the necessity for ordering fresh labels will be obviated in the majority of instances, and the inconvenience caused by the Board of Inland Revenue's change in practice will thus be reduced to a minimum.

No attempt at classification of the various formulæ is being attempted at the present stage, as it is anticipated that many more will yet be sent in. All that has been done is to arrange the formulæ in uniform style, taking those of the British Pharmacopœia as a model, and to add a distinctive registration number in each case. An index will be published in due course, so as to facilitate the search for particular formulæ. Meanwhile, readers of the Journal who have not already sent their special formulæ for publication are invited to do so forthwith, though no time-limit is insisted upon, nor will exception be taken to the fact that the formulæ may already have been sent for publication elsewhere. It must be pointed out, however, that publication of the formula for any recommended preparation, and reference to that fact on the label, will not obviate the payment of stamp duty upon that article if the seller claims—in labels, handbills, advertisements, etc.—to have any occult secret or art for mixing, compounding, or preparing it. Neither will it enable him to escape liability if he claims to have any exclusive right or title to the mixing, compounding, preparing, or vending of the medicine. Further, publication of the formula will not remove the claim to duty if the preparation has previously been sold as a dutiable article, duly stamped as such. In fact, to put the matter briefly, disclosure of the composition of any recommended medicinal compound will only prove effective as a means of avoiding liability to medicine stamp duty, if the preparation is one which is only held to be non-liable because of the special exemption in favour of articles sold by chemists and druggists and certain other privileged individuals.

A question has been raised as to whether it is within the power of the Board of Inland Revenue to insist upon disclosure of the composition of medicines, either by publication of the formula upon the label, or by such indication being given as will enable anyone to identify the formula. In order to secure the benefit of the special exemption, the law requires that the preparation shall be a well-known, admitted, and approved remedy. Under certain conditions, such a remedy would appear to be exempt under whatever name it is sold by a chemist and druggist, whether or not he discloses the formula or its source upon the label. But the onus of proving that the article is a well-known, admitted, and approved remedy rests with the seller, apart from which fact the Board of Inland Revenue considers that the exemption would be practically nullified if all the conditions imposed by the Statute were insisted upon. In the circumstances, however, the Board is prepared to forego some of the conditions, provided chemists and druggists comply with certain regulations which appear to be requisite for the protection of the public revenue. Those regulations may or may not be legally justified, but, until they are shown to be contrary to the Statute, the majority of chemists will doubtless prefer to avoid trouble by availing themselves of one of the courses of procedure recognised by the Board of Inland Revenue—(1) stating the names of the principal active ingredients of the medicine upon the label, or (2) indicating thereon that the preparation is made in accordance with a formula published in a well-known book of reference, such as the *Pharmaceutical Journal* formulary—'Recipes'—will be when completed.

THE "ABSOLUTELY FREE" TREATMENT.

CHEMISTS are occasionally asked by customers concerning the genuineness of the "absolutely free" medical treatment advertisements which appear in various religious periodicals and magazines. About two years ago, a correspondent, acting on the suggestion of the Editor of the *Pharmaceutical Journal*, answered the advertisement of Dr. JAMES W. KIDD, Fort Wayne, Ind., U.S.A. Beyond a mere mention of an imagined disorder, no symptoms were given by our correspondent; therefore the correspondence which followed is all the more enlightening as to the genuineness or otherwise of the whole business. In response to his letter, our correspondent received a small box of gelatin capsules containing compressed tablets of different colours, surrounded by an oily medium, also a letter signed by Dr. KIDD. The letter stated that the case, which had been very carefully considered, was a serious one, requiring prolonged treatment; but Dr. KIDD was convinced that if the case was placed in his care he could effect a complete cure. In order to open up a connection in the locality he offered to undertake to cure the patient for the sum of two pounds which, he was careful to point out, was considerably less than the cost of the medicine. No reply being sent to that communication Dr. KIDD wrote again, addressing our correspondent as "Dear Friend," and expressing surprise that his offer had not been accepted. He pointed out that "delays are dangerous," and enclosed various testimonials from grateful patients. Still no reply was sent to Dr. KIDD's sympathetic letter; but he was not disheartened. Again and again during the past eighteen months communications have been addressed to our correspondent. From two pounds—which was said to be less than the cost of the medicine—the fee was reduced to one pound, and in addition to the treatment an "electrical" belt was included. That offer not eliciting any response, Dr. KIDD wrote suggesting that our correspondent should become his local agent. His duties would be to forward the names and addresses of persons whom he induced to write to Dr. KIDD, and, in the event of business resulting, certain commission would be forwarded to him. This week a further communication has been received, signed by Dr. KIDD, who states "I hereby agree to furnish one complete course of treatment upon receipt of this order with ten shillings, and to give to the patient as careful treatment as though full price had been paid." This communication was accompanied by a leaflet headed, "The J. W. KIDD COMPANY, endorsed by the Lieutenant-Governor of the State of Indiana," who, however, has simply made the statement that "Dr. JAMES W. KIDD and the men associated with him are . . . considered entirely reliable and honest." Readers of the Journal will doubtless be able to form their own opinion on those points, and the foregoing statement of facts will probably be found useful for reference by chemists who may be asked for information concerning the "absolutely free" treatment.

BARNARD SIMPSON PROCTOR.

Pharmacy is weaker to-day by the loss of one who was for more than half-a-century a most distinguished and honoured member of the profession. Barnard Proctor has run his course. The announcement will come as a terrible shock not only to those who were privileged to know him, but to a vastly wider circle. It would, indeed, be difficult to recall any single name so highly respected by all connected with pharmacy at home and abroad. More than five years ago—in April, 1898—failing health compelled his retirement from business, but it was not until last Tuesday morning that the end came, from asthma, of a life of consistently splendid achievements. As late as the previous afternoon, Mr. Proctor was able to sit in his garden at Westbury-on-Trym, near Bristol, where he had lived since leaving Bradford-on-Avon twelve months ago. An intimate friend, writing an appreciation of Barnard Proctor for this Journal ([4], **6**, p. 331), said of him with perfect truth :—"His reputation in pharmacy is world-wide, and his place in pharmaceutical history is assured, but for his contemporaries, and especially for friends and neighbours, there is always the charm that comes from knowing a man who is original, yet tolerant, and whose kindness of heart is as patent as his greatness of mind."

BARNARD S. PROCTOR.

Perhaps it was in some degree due to the influence of heredity that he shone so conspicuously in pharmacy, as he was a chemist of the fifth generation. His grandfather, John Proctor, came from Dundee to Tyneside and there established the business of a chemist and apothecary in 1768. It was this business to which Barnard Proctor, who was born at Newcastle in 1829, subsequently succeeded. Light on his choice of a profession was thrown in the course of the inaugural address which he gave to the students of the School of Pharmacy in 1876 (*P.J.* [3], **7**, p. 303). "When I was a boy," he then said, "I had a taste for mechanics and physics, and my desire was to be an optician and philosophical instrument maker; but my father said I had to be a chemist and druggist and help him. I had no great dislike to the business, so without much reluctance I made up my mind to follow it and help him to the best of my abilities." With none of the advantages which are possessed by the apprentice of to-day, he set himself, with the greatest possible success, to obtain a thorough knowledge of pharmacy and allied sciences, and was closely associated in study with Dr. Joseph Wilson Swan, who, by a pathetic coincidence, is to stand next Thursday, at the opening of the Session of the School of Pharmacy, where his old friend stood twenty-seven years ago. In April, 1853, shortly after attaining his majority, Proctor presented himself in London for the Minor Examination. In those early days candidates who had declared an intention of so doing were allowed to present themselves for the Minor and then go on for the Major at the same meeting of examiners. Proctor's modesty had led him to offer himself for the Minor only. One of his examiners was the late Mr. Peter Squire. This keen judge of men soon found his examinee to be specially well up, and asked why he had not elected to take both examinations, and suggested to his colleagues that this should still be allowed. Proctor having come up for the Minor, went away with the Major and an honorary certificate as well. Since 1857 he has been a member of the Pharmaceutical Society, being also a member of the Council in 1863-4, and of the Board of Examiners from 1867 to 1869. For many years he was Local Secretary of the Pharmaceutical Society for Newcastle-on-Tyne, retiring from that office in 1879. In 1862 the first of an exceptionally large number of original papers on scientific pharmacy was published in the *Pharmaceutical Journal*, "Hyoscyamus" being the subject. The following year saw the birth of the British Pharmaceutical Conference at Newcastle, Barnard Proctor being one of a small body of founders who met in that town on September 2, 1863. He was the author of the first paper ever read before the Conference, taking "Weights and Measures" as his subject, but never accepted the offers of the Presidency. From 1862, almost up to the present, contributions to pharmaceutical literature, both scientific and political, have emanated from his pen. He was also a frequent contributor, under a pseudonym, of ethical articles to the *New Magazine*. His philosophic bent was well shown in the address previously mentioned to the students at Bloomsbury Square, and his quaint humour comes out in his "Unclean Spirits and the Natural Orders of Men" ([2], **4**, p. 154), and in the much-questioned paper on 'Pharmaceutical Remuneration in Relation to Pharmaceutical Progress" (*P. J.* [3], **12**, 219), offered to, and declined by the Conference at York. As a writer in this Journal has remarked, what was then regarded as the most heretical of his opinions has often recently been preached by the reputedly orthodox. Among his more recent contributions to the Journal were those on such burning questions as "The Qualifying Degree," "The Sale of Carbolic Acid," and "The Widow's Clause." His interest in pharmaceutical politics was keen to the last, local associations always finding in him a willing and capable helper and a wise counsellor.

It was, naturally enough, in the North of England that his influence was most strongly felt. In 1869 he was appointed Lecturer of Pharmacy at the College of Medicine of Durham University, and to that appointment is owing the production of his well-known book, 'Lectures on Pharmacy,' which even now remains one of the best of its kind. He had often thought of the revision and republication of this book, and in a letter to the Editor of the *Pharmaceutical Journal*, written as recently as August 8 of the present year, he said :—" My energies are failing and my faculties numb, and though I have had two eyes on the youths of the drug trade I have scarcely seen anyone showing the qualifications I should feel satisfied with in a successor; consequently I determined to wait for the time, the man, and the spirit to move him." Another well-known work is his 'Manual of Pharmaceutical Testing,' published in 1890. The authorities of the University offered to bestow on this distinguished member of their teaching staff the honorary degree of M.A., but this honour was declined, as Proctor did not think an Arts degree suitable for himself, and at that time degrees in science were not conferred at Durham. At Newcastle, the Chemical Society was in 1882 proud to elect him President, and the Literary and Philosophical Society owes much to his energy and counsel. His wife, who survives him, was a niece of Michael Faraday. He leaves two sons, one of whom, Mr. H. Faraday Proctor, is electrical engineer to the City of Bristol, and two daughters.

By the courtesy of the Secretary of the Pharmaceutical Society, we are enabled to print the last letter which was received from Mr. Proctor at Bloomsbury Square:—

> Melrose House,
> Westbury-on-Trym,
> Bristol.
>
> Dear Bremridge,— August 17, 1903.
>
> I thank you for the opportunity of having a finger in the Compendium pie. I do not think of any item to add, but I highly approve of the project, and look upon it as a reasonable step towards the extinction of secret remedies, a thing very desirable, especially as regards those containing scheduled poisons. Extinction, not taxation, is their treatment for the public good —Michael Carteighe notwithstanding. I give my blessing on this, the first step, and we shall see what the next and subsequent steps should be when we learn the result of the first.—Yours truly,
>
> Barnard S. Proctor.

THE OPENING OF THE SESSION.

We regret to have to announce that owing to the serious indisposition of Monsieur Eugène Collin, of Colombes, Paris, the President of the Pharmaceutical Society will not have the gratification of personally presenting that distinguished pharmacologist and Hanbury medallist to the members of the Society at the inaugural sessional meeting on October 1. Monsieur Collin is unfortunately suffering frrm hepatic colic, and will, in all probability, not be able to leave his room for some time to come; he is forced, therefore, to abandon the idea which he had for a long time entertained, of coming to Bloomsbury Square. He is keenly disappointed that these circumstances have deprived him of the opportunity of meeting some of the more prominent British pharmacists, whose names have reached the other side of the Channel, and hopes that the pleasure may only be a little while deferred. In this wish all members of the Society will cordially unite. His Excellency the French Ambassador has been good enough to arrange for the attendance of Count de Montholon as representing M. Collin on the occasion of the presentation of the Hanbury Gold Medal. As has already been announced, the inaugural address will be given by Dr. J. Wilson Swan, F.R.S. An additional feature will be the unveiling of the Martindale memorial statue, and the formal presentation to the Council of the die for the Martindale memorial medal.

POLITICAL PROSPECTS.

Indications are visible that the Council of the Society does not propose to allow the Parliamentary work of last session to be wasted. Notices have been issued convening a meeting of the Parliamentary Committee for next week to consider the general political outlook, and to formulate the line of procedure to be recommended to the Council in regard to the Pharmacy Bill. The Committee will probably consider the wording of a clause to be inserted in the Bill with the object of making clear to medical men and others that there is no intention to weaken the rights reserved by Section 16 of the Pharmacy Act, 1868. In spite of the great activity observable throughout the country in selecting candidates for Parliament, and the possibility of "three-cornered" elections, no pharmacist seems as yet to have been definitely selected to contest a constituency.

OILMEN AND POISONOUS SUBSTANCES.

The attitude adopted by the great majority of coroners throughout the country with regard to the sale of strong mineral acids and caustic alkalies by oilmen and other unqualified vendors is sufficiently well known. Now, however, a new development would seem to be on foot. Dr. Danford Thomas has written to the Metropolitan Grocers', Provision Dealers', and Oilmen's Association, in reply to a communication received from that body on the above subject. Dr. Danford Thomas suggests to the oilmen, *et ceteros*, that if it became the general custom of their trade to exercise care in the selling and labelling of various acids —among which, presumably by mistake, oxalic acid is included—and certain other substances, legislation on the subject would be unnecessary. The coroner suggests to the Association a resolution which, if adopted, might, he thinks, call the general attention of unqualified vendors to the whole subject and make for the greater safety of the public. It was decided at a meeting of the Council of the Association on Tuesday, September 15, to inform the coroner that the Association was quite in agreement with his valued suggestion that poisonous articles should be sold properly labelled and with all practical precautions that could be taken.

BANKRUPTCY STATISTICS.

The twentieth annual report of the Inspector-General in Bankruptcy has been published this week by the Board of Trade as a White Paper. The number of receiving orders made in 1902 showed a decrease of thirty-nine as compared with the previous year. This decrease occurred in the orders made on creditors' petitions, there being a slight increase in those made on debtors' petitions. In 1902 only 21 receiving orders were made in respect to persons described as chemists and druggists; in 1901, 31 such orders were made. The total failures of chemists and druggists under the bankruptcy and deeds of arrangements Acts numbered 52, with total liabilities, £49,758. In the previous year there were 73 such failures, with liabilities, £56,806.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Detection of Free Naphthol in Benzonaphthol.

A. Jorissen gives the following test to detect β-naphthol, which is apt to occur as an impurity in benzonaphthol. 20 Cgm. of the benzonaphthol to be tested is added to 2 C.c. of glacial acetic acid, followed by two drops of citric acid solution. Pure benzonaphthol remains colourless. If β-naphthol be present the mixture acquires a yellow tint.—*Répertoire* [3], **15**, 365, after *Journ. de Pharm. de Liège*.

Decomposition of Lithium Carbonate by Heat.

P. Lebeau finds that lithium carbonate, when heated, begins to decompose at about 600° C., and that even at that temperature the vapour tension of the lithium oxide formed is such that it may be completely volatilised. This property distinguishes lithium carbonate from the other alkaline carbonates. It is also thus distinguished from the carbonates of the alkaline earths, such as calcium, which, although dissociated at this temperature, is infusible and leaves a fixed oxide.—*Comp. rend.*, **136**, 1,256.

Decomposition of Light by Liquids.

Mansier has observed that a mixture of glycerin, sp. gr. 1·242, and oil of turpentine decomposes the rays of white light in an interesting manner. If about 15 C.c. of this glycerin and 3 or 4 C.c. of turpentine be shaken together in a test tube, and allowed to separate, the greater part of the turpentine rises to the surface, but numerous minute oily particles remain diffused through the liquid for some time. If the frames of a window, or writing, or print, be now observed through the liquid, these objects will appear blue instead of black, while the outline is surrounded by a yellow border. If the tube be now immersed in a water-bath, so that the liquids become clear, and the same objects be again viewed through the tube, they will appear green. Gradually, as the liquid cools, they become yellow, orange, red, violet, indigo, and lastly blue. Accompanying each change of colour, a border of the complementary colour will be seen outlining each object. The same change of colour as is produced by heat may be obtained by adding water, drop by drop, to the mixture of turpentine and glycerin.—*Répertoire* [3], **15**, 340.

Lichens on Cascarilla Bark.

It is now a well-established, and generally accepted fact that the chalky appearance of cascarilla bark is due to the presence of myriads of crystals of calcium oxalate embedded in the walls of the cork cells, and not to any superficial coating of lichens. Especially is this the case with the small cascarilla bark at present in commerce. Such bark bears, according to E. Senft, but very few lichens, and such as are present are by no means well developed. Older specimens of the bark, such, for instance, as those of the materia medica collection of the Vienna University, exhibit more numerous and better developed lichens, no fewer than forty-five having been recorded and described. Senft now adds four that are new for cascarilla, and one altogether new species which he has named *Arthonia voglii*. The lichens present on barks may, under certain circumstances, possess diagnostic value, and it is interesting therefore to note the following which, according to Senft, are the most characteristic for cascarilla:—*Trypethelium eluteriæ*, Spreng., *Arthopyrenia planorbis*, Müller Arg.; *Anthracothecium cascarillæ*, Müller Arg.; *Arthonia polymorpha*, Ach.; *Phalogrophina pachnodes*, Müller Arg.—*Oester. Zeits.*, **41**, 891.

Cæsium and Rubidium Carbides.

By heating the acetylenic acetylides of cæsium or rubidium *in vacuo* to about 300°, H. Moissan has obtained, by dissociation, the carbides of the respective metals. Cæsium carbide, C_2Cs_2, thus obtained, occurs in transparent crystals with a reddish-brown reflection, which ignite in the cold in fluorine, chlorine, bromine, and in the vapour of iodine. They also combine, with incandescence, with silicon or boron when heated. Barium and calcium carbide do not react thus with these elements. Cæsium carbide decomposes water, forming acetylene and cæsium hydrate, thus:—

$$C_2Cs_2 + 2H_2O = C_2H_2 + 2CsHO.$$

When heated *in vacuo* it is dissociated below redness into the metal and amorphous carbon. Rubidium carbide, C_2Rb_2, in general reactions, resembles cæsium carbide. It evolves acetylene, without taking fire, on contact with water, but it produces a vivid incandescence with both strong and dilute hydrochloric acid. If rubidium carbide be covered with an excess of small crystals of metallic calcium and heated *in vacuo*, the rubidium is displaced from combination, and sublimed to form a brilliant metallic mirror on the colder surface of the tube.—*Comp. rend.*, **136**, 1,220.

Action of Acetylene on Cæsium or Rubidium Ammonium.

On passing pure dry acetylene gas through the blue solution of cæsium ammonium (*P. J.*, *ante*, 78), H. Moissan observes that the gas is immediately absorbed, the colour disappears and a gas, ethylene, is given off, and a white crystalline compound, cæsium acetylenic-acetylide, $C_2Cs_2{\cdot}C_2H_2$, is formed in transparent pearly crystals soluble in liquefied ammonia. The reaction takes place according to the equation—

$$3C_2H_2 + 2NH_3Cs = C_2Cs_2{\cdot}C_2H_2 + 2NH_3 + C_2H_4.$$

The crystalline compound is a most powerful reducing agent, often reacting with violence. It sinks in benzol or in carbon tetrachloride, without decomposition. It melts at about 300° C., takes fire in fluorine and chlorine at normal temperatures, and becomes incandescent in bromine and in the vapour of iodine, also with phosphorus and arsenium when they are slightly warmed. It gives a vivid incandescence when warmed with amorphous silicon to about 400° C. It takes fire in the cold in gaseous hydrochloric and sulphurous acids; but is not attacked by carbonic acid until the temperature reaches 300° C., when it ignites in that gas. It burns in nitrogen dioxide at 100° C. It reduces lead dioxide and cupric oxide far below a red heat, the reaction occurring with explosive energy. It takes fire with sulphuric and nitric acids. When thrown into cold water it violently disengages acetylene according to the equation—

$$C_2Cs_2{\cdot}C_2H_2 + 2H_2O = 2C_2H_2 + 2CsOH.$$

Rubidium ammonium forms with acetylene the analogous rubidium acetylenic acetylide, $C_2Rb_2{\cdot}C_2H_2$, in transparent, extremely hygroscopic crystals. In general reactions it agrees with its cæsium congener, but is distinguished from the latter by not attacking silicon or boron at about 350° C.—*Comp. rend.*, **136**, 1,217.

Flowers of Tea.

Under this name attention was directed some years ago to a waste product of the manufacture of tea consisting of the hair derived from the young leaves. During the present year a different article under the same name has been introduced into Paris from Tonquin. It consists of the flowers of the tea plant, of which two forms are sold respectively under the names of green and black. The flowers are apparently gathered two or three days before expansion. The mode of preparation for use is to put the flowers in cold water, and boil them for ten minutes. The decoction has a sweeter taste, but not so strong an aroma as ordinary fermented tea leaves.—*Journ. d'Agric. Trop.*, **3**, 201.

ORNAMENTAL MEDICINAL PLANTS. (1.)

BY JOHN R. JACKSON, A.L.S.

It is not given to every pharmacist to possess a botanical garden of his own, however small, and especially is this the case with those whose lot is cast in the centre of big towns. There are some, however, who have so deep an interest in the living plants that furnish drugs that they manage to grow a few of them amongst the more showy inhabitants of even a small flower garden, for though there are many notable exceptions, drug-yielding plants, on the whole, are not such as to recommend them for floral display. In a large garden a few plants interesting alone from a scientific point of view may be admitted here and there without affecting the decorative character of the garden. In such manner the eminent pharmacologist, Daniel Hanbury, got much pleasure and scientific profit from his garden at Clapham Common, where many times I had the pleasure of being shown by him some interesting medicinal plant in flower, often planted amidst fruits or vegetables, or indeed in any place where a suitable spot suggested itself. Though it cannot be said that there are the same possibilities of obtaining equal pleasure from a small garden, yet, by a judicious selection of plants, pleasure and effect as well as knowledge can all be combined.

Pomegranate.—*Punica granatum*, showing single and double flowers, and section of fruit.

The mention here of only two plants will perhaps serve as a key to further developments for those who like to try the experiment, indeed, with the Editor's permission, we may again in a future number of the Journal give some further examples. The first, namely, the pomegranate, is perhaps the most showy or attractive, in consequence of its bright red flowers, which are borne in numbers of from two to five together, almost sessile near the tops of the branches. It makes a good wall plant as well as a handsome tree, flowering as it does from June to September and requiring but little attention when established, besides which there is a double-flowered variety (*Punica granatum* var. *flore pleno*) which has white flowers and a yellowish calyx, and there is also a dwarf variety (*nana*), besides other garden forms in which the colour of the flowers vary more or less. The pomegranate has a special interest of its own, the fruit being composed of two whorls of carpels one placed above the other, the lower consisting of three or four, and the upper of from five to ten segments. The plant is a native of Northern Africa and North Western India, but it is largely cultivated throughout the tropics for the sake of its agreeable acid pulp, which is cooling and refreshing. In India the rind is valued as an astringent in diarrhœa and dysentery, while the root-bark, which is the most astringent part of the plant, is used for relaxed sore throat, and as an anthelmintic. The seeds also are refrigerant and astringent. Besides its general use as a medicinal plant in India, the pomegranate is also used in the same country for other purposes, thus, the fruit-rind is a valuable tanning substance, while the bark is also used as a tan and a dye, and the red colour from the flowers for dyeing cloths. Irrespective of the interest thus attached to the pomegranate in modern times, we have the consideration of its great antiquity, as shown by references to it in the sacred writings and representations of it in the sculptures of Assyria, and the ancient monuments of Egypt.

Liquorice.—*Glycyrrhiza glabra.*

The second plant that might well be found amongst those cultivated for their flowers, but which also has a pharmacological interest, is the liquorice (*Glycyrrhiza glabra*), which is a hardy herbaceous perennial with pinnate leaves and blue flowers, and belongs to the section Papilionaceæ of the natural order Leguminosæ. It grows to a height of from three to four feet, and produces its flowers through summer and autumn.

The plant is a native of Europe and is cultivated in Spain, Italy, and Russia for the sake of its long penetrating roots, from which the well-known liquorice juice is obtained. The cultivation of the liquorice plant in this country has decreased very much of late years. About fifty years ago it was much grown in the neighbourhood of London, particularly about Mitcham, Kew, and Isleworth. In all these places most of the ground that was then occupied with liquorice is now covered with houses, and the plant has had to migrate to much longer distances from the capital, and about Pontefract and Knottingley, in Yorkshire, the largest quantities are now grown. It has been introduced into China, and in more recent years into North America, where there is a great demand for the inspissated juice, chiefly, it is said, in the preparation of certain kinds of tobacco. The only drawback to the introduction of the plant into a small garden is its exhaustive nature, caused by the long penetrating roots going down to a depth of about three feet in the course of the three years, which is usually allowed to the plants in a liquorice garden to mature. Of the mode of preparation and the uses of liquorice we need not speak, but the pharmaceutical gardener will get both pleasure and profit by growing small quantities of this, and other medicinal plants if only for the examination of their root and stem structures and their other botanical characters.

NOTES ON THE ASH-YIELD OF CRUDE DRUGS AND COMPOUNDS.*

BY W. CHATTAWAY AND C. G. MOOR.

The Pharmacopœia (1898) includes ash-limits for a number of crude drugs, and it is probable that in the next edition limits may be set for several others which have been frequently shown to contain very considerable amounts of mineral matter, either collected inadvertently or deliberately added. In the case of a number of drugs—such, for example, as are used for obtaining an oil, and are not used or sold in powder—the ash is of but little interest, while in certain others its amount is a useful guide to the value of the drug in question. In grinding drugs it must be recollected that there will be a loss of moisture and in some cases of volatile oil, which will cause the ash of the powder to be greater than that of the crude drug. In addition to this, the process of sifting may cause accumulations of mineral matter in certain grades, and, again, the vibration of machinery may cause a settlement of mineral matter to the bottom of a package. These considerations will show that great caution must be used in regarding a ground drug to be adulterated on account of a slight apparent excess of mineral matter, but we believe that the figures given here will indicate fairly what should be expected from samples of good quality.

A large number of figures on the ash-yields of drugs were submitted to the Pharmaceutical Conference in 1900, in a paper by C. G. Moor and Martin Priest; and since then certain ash-limits have been laid down in an official publication of the Local Government Board for Ireland.

J. C. Umney gives (*P.J.*, November 25, 1902) a large number of suggested standards of ash for drugs, and in his Laboratory Report for 1902 Mr. John Barclay publishes a large number of ash determinations. An investigation of the normal ash of drugs is also being carried out in the research laboratories of the Pharmaceutical Society. In 'The Year-Book of Pharmacy,' p. 176, 1902, appears an abstract of some records of ashes by L. Glaser (*Pharm. Zeit.*, xlvi., 691, 887). We have thought it would be of interest to members of the Society to recapitulate the results obtained, and place them on record in a convenient form, as although much of the information is to be found in 'The Year-Book of Pharmacy' and the *Pharmaceutical Journal*, no complete set of figures has as yet appeared in the *Analyst* on the subject. We have therefore drawn up a tabular statement showing the results of various observers, which should be referred to in conjunction with the following remarks:—

Acacia Gum.—The Pharmacopœia sets a limit of 4 per cent. of ash for this substance, and there is no difficulty in obtaining a plentiful supply satisfying this and the other official requirements.

Aconiti Radix.—No limit for ash is specified in the Pharmacopœia. Cleaned roots give from 4·5 to 6 per cent. A clean sample of English root recently examined by us gave 4·9 per cent. of ash. Foreign root may possibly yield a higher figure, but it is excluded by the Pharmacopœia.

Aloes.—Both the official varieties yield an ash from 1 to 4 per cent. Umney suggests 3 per cent. as a suitable limit.

Ammoniacum.—The better qualities of this gum-resin yield less than 3 per cent. of ash. Umney suggests 7·5 and Dietrich 10 per cent. as limits. A sample of No. 3 quality gave as much as 15 per cent. of ash. A fair sample examined by us gave 1·7 per cent. of ash.

Anethi Fructus.—The ash of the clean fruit is about 6 to 7 per cent. Umney suggests a limit of 8 per cent.

Anisi Fructus.—Some varieties of this appear to give a slightly higher yield than Umney's suggested limit of 8 per cent. Barclay records a powdered root yielding 10·8 per cent.

Anthemidis Flores.—Five to 6 per cent. is the general experience.

Araroba.—This drug has frequently been shown to be very variable in its ash-yield. As the Pharmacopœia requires it to give a certain yield of chrysarobin, it might be thought that the ash-figure was of small consequence, but owing to its being used for other purposes than for the manufacture of chrysarobin, it is important that a limit of ash should be fixed; 7·5 per cent. is a reasonable limit. This drug appears to be far more free from mineral matter than formerly, it being not unusual to find 50 to 80 per cent. some years ago.

Arnica.—If this drug is not carefully cleaned by washing or beating it will be found to be contaminated with large quantities of adherent earth—as much as 25 per cent. of the weight of the drug. Another sample examined by us showed 9·2 per cent. of ash.

When cleaned by beating or washing the ash does not exceed 10 per cent., the limit suggested by C. G. Moor ("Standards"). Umney confirms this. Two samples cleaned and examined by us gave 9·2 and 9·4 per cent. of ash. It is essential that this root should be cleaned before grinding.

Asafœtida.—The Pharmacopœia specifies the use of tears, which are much freer from accidental mineral contamination than the mass, though the latter is richer in oil. It is at present very difficult to obtain asafœtida yielding not more than 10 per cent. of ash, and a large number of observers have published figures showing 20, 30, or even over 40 per cent. of ash.

Umney confirms the suggestion of Moor and Priest that the limit should be raised to 20 per cent. for the present. K. Dietrich, on the other hand, says "the limit of ash (10 per cent.) is right, and should be adhered to" (*C. and D.*, 1898, p. 131); and E. M. Holmes maintains that 10 per cent. should be the limit. Most Continental Pharmacopœias give the limit at 10 per cent.

Aurantii Cortex Siccatus.—The average of four figures (Moor and Priest) shows 6·2 per cent. of ash, which is confirmed by Umney's suggested limit of 7 per cent.

Balsam of Peru.—We suggest 1 per cent. of ash as a limit.

Balsam of Tolu.—One per cent. may also be suggested in this case.

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* Read before the Society of Public Analysts, and reprinted from the *Analyst*, for July, 1903.

Belladonnæ Radix.—We suggest 9 per cent. of ash as a limit.

Benzoin.—The Pharmacopœia recognises both Siam and Sumatra benzoin, but suggests no ash-limit for either. On account of the high price of Siam benzoin, the Sumatra variety is almost exclusively used in pharmacy.

The German Pharmacopœia gives a limit of 2 per cent. of ash. In the case of this drug the ash is not of great consequence, as the benzoic and cinnamic acids can be estimated, but a limit of insoluble matter (wood and bark) should be fixed.

Buchu Folia.—Experience shows that 5·0 per cent. is approximately the average figure.

Calumba Root.—Umney suggests 6 per cent. We are inclined to raise this to 8 per cent. F. H. Alcock (*P. J.*, 502, 1901) records a case whereby he was able to detect an adulterant in calumba root by its high ash. Two samples of powdered calumba root recorded by Moor and Priest yielded 11·8 and 10·3 per cent., and may therefore not have been the official root.

Cambogia.—The Pharmacopœia gives 3 per cent. as a limit. No sample that we have examined has yielded more than 1 per cent., and possibly the official limit might be lowered to 2 per cent.

Cannabis Indica.—A sample examined by Priest gave 13·8 per cent., and two by ourselves 12 per cent., and by Barclay 15·5 per cent. Umney suggests 15 per cent. as a limit.

Cantharis.—Seven per cent. was suggested by Moor and Priest, and is official in the German Pharmacopœia. A recent sample examined by us gave 6·4 per cent.

Capsicum.—W. H. Lenton (*P. J.*, 558, 1902), has examined several samples of capsicum, none of which yielded an ash over 6 per cent. The Pharmacopœia gives 6 per cent. of ash as a limit. This is rather low, and might be raised to 8 per cent., as samples have been found (C. G. Moor) to give over 7 per cent. of ash. A. Beythieu (abstract, *P. J.*, 549, 1902), has, however, found samples to vary from 5·3 to 7·7 per cent. A sample examined some years ago by C. G. Moor gave 9 per cent. of ash, which was nearly half potash. Cowley and Catford have found 3 to 8 per cent. (*P. J.* [4], **12**, 426).

Cardamoms.—The Pharmacopœia limit of ash is 4 per cent., and is designed to exclude the presence of pericarps, which yield a higher ash. As pointed out by Moor and Priest, the ash of genuine cardamoms may be over 5 per cent., and hence the limit should be raised from 4 to 6 per cent. This view is confirmed by Umney (*P. J.*, November 15, 1902), and by Greenish (*C. and D.*, 1901, p. 274), who also gives a description of the microscopical appearance of powdered cardamoms. Barclay (Laboratory Report) records a figure of 7·5 per cent. of ash on the fruits.

Carui Fructus.—The Pharmacopœia gives 8 per cent. for the ash-limit. It may be as low as 5·5 per cent. in our experience. The ash-figure is of no service as a means of detecting exhausted seeds, but these can be detected by the low extractive yielded to ether.

Caryophyllum.—The Pharmacopœia limit is 7 per cent., and this is satisfactory, as a large number of samples show from 5 to 6 per cent. of ash.

Cascara Sagrada.—The ash varies from 4 to 7 per cent.

Cascarilla.—Umney suggests 10 per cent. Eight results which we have collected all fall within this standard.

Cassia Pulp.—Barclay records 2·6 per cent., and the figure by Moor and Priest was 5·1.

Catechu.—The Pharmacopœia gives 5 per cent. as limit. This appears to be satisfactory.

Chiretta.—The ash is about 4 to 6 per cent.

Cinchona Bark.—The Pharmacopœia gives no limit. Umney suggests 4 per cent., which accords with other observations.

(*To be continued.*)

ABSORPTION AND EMISSION SPECTRA.*

BY PROFESSOR W. N. HARTLEY, D.SC., F.R.S., F.R.S.E.

(*Concluded from page* 430.)

Emission Spectra.

SPARK SPECTRA AND THEIR CONSTITUTION.

As it became necessary to make accurate measurements of absorption spectra in the ultra-violet, the work of obtaining the wave-lengths of lines in twenty metallic spectra was undertaken. They were for the most part in a region which, except in the case of two or three elements, had not been previously explored. A small Rutherford grating was employed, combined with quartz lenses with a focal length of three feet. Experience had shown that it was advisable in describing these spectra to give measurements in hundredths of an inch of the positions of the lines on the published photographs of the prismatic spectra in the 'Journal of the Chemical Society' (March, 1882), and to follow Lecocq de Boisbaudran by giving a description of the character of each of the lines. In this way they are easily identified, and the value of the measurements for practical purposes is greatly enhanced. Prior to the publication of the work (1882), in the prosecution of which Dr. Adeney was associated with me, Liveing and Dewar, who had been engaged on a similar investigation, but operating in a different manner, published an account of the spectra of the metals of the alkalies and alkaline earths, and subsequently the lines of iron, nickel, and cobalt. They showed a rhythmic grouping of the lines to be characteristic of the spectra of the alkali metals.

In connection with the prismatic spectra which were photographed some remarkable facts were noticed; for instance, the character of the lines belonging to different groups of elements was a noticeable feature, as well also their disposition or arrangement, more particularly in the ultra-violet. Similarities in the visible spectra of zinc and cadmium, of calcium, strontium, and barium, and in those of the alkali metals, had been observed by Mitscherlich, by Lecocq de Boisbaudran, and also by Ciamician. As to the grouping of the lines as observed on the photographs, it appeared that the spectra of well-defined groups of elements had characteristics in common which were different from those of other groups. For instance, the alkali metals differed from the alkali earth metals, which appeared to form a group by themselves. Then in marked contrast to these simple spectra were those of iron, nickel, and cobalt, which, though very complicated, were seen to be much alike. Nearest to these, but differing from them in certain respects, were the palladium, gold, and platinum spectra.

It was observed how these elements with certain chemical and physical properties in common could be recognised as being relations owing to their family likeness when their spectra were photographed. Then it was remarked that the spectra of magnesium, zinc, and cadmium had distinctive characters in common; for instance, the individual lines in these spectra were marked by similar characteristics, such as a great extension of the strong lines above and below the points of the electrodes. This extension was increased with the atomic mass of the metal, and with the greater atomic mass in this group the volatility of the metal is also greater. An arrangement of the lines in pairs and triplets was noticed, the triplets being repeated, but less distinctly than in the first instance, and again repeated sharply but less strongly, so that there were three different sets of triplets in each spectrum. The point of greatest interest and importance was the connection traced between the atomic mass and the numerical differences observed in the intervals between the lines of different groups when measured by their oscillation frequencies.

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* Presidential address to the Chemical Section of the British Association for the Advancement of Science, Southport, 1903.

These differences were not in the spectrum of one element, but were in the lines of each metal of the group, and were clearly associated with the atomic mass and chemical properties in each case.

The arrangement of the lines, which was common to all the metals in the magnesium, zinc, cadmium group, may shortly be described as follows:—Three isolated lines and one pair of lines in magnesium, with four sets of triplets; one isolated line and one pair of lines in zinc, with three sets of triplets; one isolated line and one pair of lines in cadmium, with three sets of triplets.

Besides the arrangement of these lines there were in the spectrum of each element two groups of the most refrangible lines, consisting one of a quadruple group and the other of a quintuple group, the groups and the lines composing them being similarly disposed in each spectrum. It was, however, not distinctly proved that these particular groups were strictly homologous, the most refrangible lines in the zinc spectrum being very difficult to photograph even on specially prepared plates, though the lines are strong. It was furthermore observed that with an increase in the atomic mass the distances between the lines, both in pairs and triplets, were greater. The same was the case with the quadruple and quintuple groups. In the magnesium spectrum, if we compare the first with the second group of triplets, we find the intervals extending from the first line in the first group to the first line in the second group, and from the second line in the first group to the second line in the second group, and from the third line in the first group to the third line in the second group, when measured in terms of oscillation frequencies, to be 677·1, 677·0, and 677·4. Similarly taking the second and third groups it is 391·2, 391·1, and 391·1. Between the third and fourth groups in like manner it is 230·9, 233, and 233; so that the intervals diminish with increase of refrangibility of the lines.

In the zinc spectrum the intervals between the lines in the first and second groups are 910, 910, and 910; in the second and third groups 582, 581, and 583.

In the cadmium spectrum the corresponding intervals are 801·5, 800, and 800; in the second and third groups 588, 589, and 587. The more accurately the lines are measured the more exactly do these differences correspond. It is scarcely necessary to point out that the differences in the atomic masses of the elements are in round numbers, where H = 1, Mg 24, Zn 65, and Cd 112.

The *Law of Constant Differences* rendered it evident that the spectra of the elements were subject to a law of homology, which was closely connected with the atomic mass and with their chemical and physical properties.

It was, in fact, found, in accordance with the periodic law, that the spectra of definite groups were spectra similarly constituted, from which it was deduced that they are produced by similarly constituted molecules. It is evident that there is periodicity in their spectra. The metals studied being all monatomic in their molecular condition, the conclusion was inevitable that the atoms were of complex constitution, and that not only was the complex nature of these atoms disclosed, but it was also shown that groups of elements with similar chemical and physical properties, the atomic weights of which differed by fixed definite values, were composed of the same kind of matter, but the matter of the different elements was in different states of condensation, as we know it to be in different members of the same homologous series of organic compounds. If this were not the case, the mass or quantity of matter in the atom would not affect in the same manner its rate of vibration—which the facts observed lead us to conclude that it does—and the chemical properties of the substances would differ more widely from one another, and the differences between them would not be gradational, which, in fact, they are. It was thus impossible to believe that the atoms were the ultimate particles of matter, though so far as chemical investigations had proceeded they were parts which had not been divided. Here the conviction was forced upon one that matter might exist in a state which had hitherto been unrecognised by those who accepted the atomic theory without searching beneath it. All that the atomic theory enabled the chemist to take account of were the laws of combination and decomposition of the forms of matter that are ponderable and of sufficient mass to be weighable on the finest balances, which, after all, are but crude and imperfect instruments for the study of matter, since they are capable only of determining differences between masses of tangible size. It became conceivable that matter in the state of gas or vapour might become so attenuated that repulsion of the molecules would be greater than the attraction; that they would then no longer form aggregates, and in consequence would cease to be weighable. In such a condition they may be imagined to constitute the ether, and in view of this conception there may be recognised four physical conditions of material substances—namely, solid, liquid, gas, and ether.

It is more than twenty years ago since the study of homology in spectra led me to the conviction that the chemical atoms are not the ultimate particles of matter, and that they have a complex constitution.

That the atoms of definite groups of chemically related elements are composed of the same kind of matter in different states of condensation is not a dream or a view of a visionary character, for it is based upon definite observations controlled by exact physical measurements, and is, therefore, in the nature of a theory rather than an hypothesis. Batchinski (1903) regards the atoms as being in a state of vibration, and the periods of vibration of related elements appear to stand in a simple relation to their properties. The mass of an atom is proportional to the square of its period of vibration, and conversely the vibration period of the atom may be calculated from the square root of the atomic weight. These values have been calculated and arranged according to Mendeléef's classification, whereby it is shown that there is a decided tendency to form harmonic series in the vertical columns. The deviations are probably capable of explanation, as the author believes, on the ground that the atom is not to be regarded as a material point, but as a material system. It is well to remember that the precursor of the Periodic Law was Newland's Law of Octaves.

I have always experienced great difficulty in accepting the view that because the spectrum of an element contained a line or lines in it which were coincident with a line or lines in another element it was evidence of the dissociation of the elements into simpler forms of matter. In my opinion, evidence of the compound nature of the elements has never been obtained from the coincidence of a line or lines exclusively belonging to the spectrum of one element with a line or lines in the spectrum exclusively belonging to another element. This view is based upon the following grounds:—First, because the coincidences have generally been shown to be only apparent, and have never been proved to be real; secondly, because the great difficulty of obtaining one kind of matter entirely free from every other kind of matter is so great that where coincident lines occur in the spectra of what have been believed to be elementary substances they have been shown from time to time to be caused by traces of foreign matter, such as by chemists are commonly termed impurities; thirdly, no instance has ever been recorded of any homologous group of lines belonging to one element occuring in the spectrum of another, except and alone where the one has been shown to constitute an impurity in the other; as, for instance, where the triplet of zinc is found in cadmium and the triplet of cadmium in zinc; the three strongest lines in the quintuple group of magnesium in graphite, and so on. The latest elucidation of the cause of coincidences of this kind arises out of a tabulated record from the wave-length measurements of about three thousand lines in the spectra of sixteen elements made by Adeney and myself. The instances where lines appeared to coincide were extremely rare; but there was one remarkable case of a group of lines in the spectrum of copper which appeared to be common to tellurium; also lines in indium, tin, antimony, and bismuth which seemed to have an origin in common with those of tellurium.

It is difficult to separate tellurium from copper, and copper from tellurium, by ordinary chemical processes. Dr. Köthner, of Charlottenburg, has succeeded in obtaining very pure tellurium from the spectrum of which these lines and also several others have been almost entirely eliminated, which shows that they are foreign to the element, and that his specimen of tellurium is probably purer than any previously obtained. For determining the atomic weight of tellurium it is, of course, necessary to obtain it in the greatest possible state of purity; and it may be mentioned that the material which Staudenmaier employed for this purpose was found, from Köthner's photograph of its spectrum, to be a very pure specimen.

The prosecution of researches in connection with the constitution of spectra was initiated by Johnstone Stoney, by Balmer with respect to hydrogen, and continued by Rydberg, Deslandres, Ames, and, above all, by Kayser and Runge, who, by an elaborate and exhaustive investigation of the arc spectra of the elements have given us formulæ by which the wave-lengths of lines in the spectra of different elements in certain definite groups may be calculated from their atomic masses. They also showed the spectra to be constituted of three series of lines, the principal series and two subordinate series, one sharp and the other diffuse. Lately, Ramage has given us a simpler formula, which applies to several groups, and he has co-ordinated the spectra of several of the elements with the squares of their atomic masses, and also their atomic masses with others of their physical properties.

It may here be remarked that the homology of the spark spectra in the magnesium, zinc, and cadmium series was at first called in question by Ames, though he proved the arc spectra of zinc and cadmium to be strictly homologous.

Preston decided the question by demonstrating by means of beautiful photographs that corresponding lines such as the pairs, triplets, and the quadruple groups in the spark spectra of the three metals when under the influence of a very powerful magnetic field underwent the same kind of change; for instance, each quadruple group changed to sextuple, the second and fourth lines in each group becoming double. Lines in spectra which have not the same constitution behave differently. Recently Runge and Paschen have arrived at the same conclusion; and, furthermore, have established homology in the spectra of sodium, copper, and silver; also between aluminium and thallium. Indium is almost certainly homologous with aluminium and thallium, but it was probably not investigated on account of its rarity. Marshall Watts has pointed out that a relationship exists between the lines in the spectra of some elements and the squares of their atomic weights, from which it is possible to calculate the atomic weight of an element if that of another in the same homologous series is known, and the oscillation frequencies of corresponding lines are known. This enables the determination of atomic weights to be controlled with quite as much efficiency and certainty in many instances as by specific heat or vapour-density determinations of the metals.

The first application of the observed homology in spectra was directed towards the question of the atomic mass of beryllium, for which purpose the lines in the ultra-violet spark spectrum of this element were first photographed and measured. The nature of the evidence on the subject adduced at the time was in outline as follows:—

"If, as Nilson and Petterson suggest, the position of beryllium is at the head of a series of triad rare earth metals, the element scandium (at. wt. 44) and yttrium (at. wt. 89) must be members of the same group. If this be the case the spectra of the three elements must have certain characters in common, for the series of which aluminium and indium are the first and third terms yield strictly homologous spectra. As a matter of fact, no two spectra could be more dissimilar than those of beryllium and scandium."

Having compared the photographs and wave-length measurements of a large number of spectra of the elements, I felt justified in making the following remarks:—

"The spectrum of beryllium exhibits no marked analogy with the calcium, the magnesium, or the aluminium spectra, all of which are members of well-defined homologous series. There is nothing similar in it to the boron, silicon, or carbon spectra, nor to those of the scandium, yttrium, or cerium. The spectrum of lithium is most closely analogous to that of beryllium in the number, relative positions, and intensities of the lines. This leads to the conclusion that beryllium is the first member of a dyad series of metals, to which in all probability calcium, strontium, and barium, as a sub-group, are homologous, its atomic mass being 9·2, its place is above magnesium." Subsequently Nilson, and also Humpidge, by chemical evidence and from vapour-density determinations of certain compounds, substantiated the conclusion previously arrived at by Emerson Reynolds, that the atomic mass of beryllium was not 13·8 but 9·2.

The next practical application of the spark spectra was to the analysis of rhabdophane, a mineral found many years ago in Cornwall, and described by Heuland in 1837 as a zinc blende of a peculiar character.

This mineral I found to contain neither zinc nor sulphur, and therefore it is not a blende. It is, in fact, a phosphate of the formula $R_2O_3{\cdot}P_2O_5{\cdot}2H_2O$, in which the oxides of cerium, didymium, lanthanum, and yttrium may wholly or in part replace each other. The didymium absorption spectrum is well seen both by reflection from the surface and transmission through thin sections of the mineral. The spark spectrum of the yttrium chloride obtained from rhabdophane was compared with that observed by Thalén and ascribed to yttrium. Of the fifty-one lines in the spectrum of yttrium thirty-eight were absent from the yttrium obtained from rhabdophane, and it was concluded that the purest yttrium was that which yielded the simplest spectrum. This was the first occasion of the finding of yttrium in any British mineral. Quite recently a confirmation of this view has been obtained by comparing this spectrum with lists of the arc lines of yttrium and ytterbium which have just been published by Kayser (1903).

Penfield analysed a mineral found in the United State which he named scovellite: it proved to be identical in species with rhabdophane.

Flame Spectra at High Temperatures.

What are commonly known in the chemical laboratory as flame spectra are chiefly those of the metals of the alkalies and alkaline earths; also of gallium, indium, and thallium. The researches of Mitscherlich and Lecocq de Boisbaudran first showed that copper, manganese, and gold gave flame spectra.

Lockyer, Gouy, and Marshall Watts also investigated flame spectra.

In 1887 I used iridium wires one millimetre thick, twisted into loops upon which fragments of minerals were heated in the oxygen blowpipe flame. Natural silicates yielded spectra not only of alkalies, but of the alkaline earths, and also distinct manganese spectra. Baryta, strontia, and lime gave spectra when insoluble compounds, such as the sulphates, were thus examined at high temperatures. Iron, cobalt, and nickel gave spectra even when compounds such as the oxides were heated strongly. But iridium, though infusible, is somewhat volatile, and contributes a line spectrum to the flame. In 1890 thin slips of the mineral kyanite, and even pieces of tobacco pipe, were used instead. Experience with this method of working went to show how the flame spectra of oxides of calcium, strontium, and barium could be separated from those of lithium, sodium, potassium, rubidium, and cæsium, as observed in the Bunsen flame. Furthermore, that even the most volatile of these substances could be made to yield a continuous coloration from a single bead of salt for a period exceeding fifteen minutes, and extending to one or two hours, so that measurements of the lines might be made with some degree of certainty.

In order to study the flames emitted from furnaces during metallurgical operations, and particularly from the mouth of Bessemer vessels, it became necessary to ascertain what really were the lines of the elements observed under different conditions at a high temperature, and accordingly systematic methods of study were developed from the previous somewhat tentative experiments.

In all the flame spectra obtained by the oxyhydrogen blowpipe the ultra-violet line spectrum emitted by water vapour which had been discovered by Huggins and by Liveing and Dewar was visible on the photographs by reason of the combustion of the hydrogen in the hydrocarbon, or the hydrogen gas itself, when burnt along with oxygen. The flame spectra are always shorter than those obtained from the arc or from condensed sparks. After an extended examination of spectra produced by the oxyhydrogen blowpipe from solid substances, the knowledge obtained was applied to the examination of the flames coming from the Bessemer vessel during the "blow" during all periods from the commencement to the termination. These observations were made at the London and North-Western Railway Steel Works at Crewe; and at Dowlais, in South Wales. In collaboration with Mr. Ramage, a large number of these complicated spectra were photographed at the North-Eastern Steel Works, where the Thomas-Gilchrist process is carried out. The spectra were fully described and measured, with the result that every one of the lines and bands was accounted for. A new line belonging to potassium was discovered to have peculiar properties. Gallium was proved to be present in the Cleveland ore from Yorkshire, in the finished metal, in clays and in all aluminous minerals, even in corundum. Also, by very accurate determinations of the wave-lengths of its principal lines, gallium was proved to be a constituent of the sun. Moreover, it was found in several meteorites. Pure gallium oxide was separated, by analytical methods, from iron ores and other materials; and the proportion of the metal in the steel rails made by the North-Eastern Steel Company, of Middlesbrough, was determined and found to be one part in thirty thousand. This Yorkshire steel is richer in gallium than any other substance from which it has been extracted; for instance, the Bensburg blende, supposed hitherto to be the richest ore, contains only one part in fifty thousand.

By observations on the spectra, the thermo-chemistry of the Bessemer process of steel manufacture was studied, and the temperatures attained under varying conditions were estimated. The demonstration of the great volatility of most metals, and of many metallic oxides in an undecomposed condition, at the temperature of the oxyhydrogen blowpipe and of the Bessemer flame, was of special interest. The metals chiefly referred to are copper, silver, lead, tin, manganese, chromium, iron, cobalt, nickel, palladium, gold, and iridium. Several of these, such as silver and gold, have lately been distilled *in vacuo* by Krafft.

Banded Flame Spectra.

Well-defined groups of elements yield banded flame spectra which have a similar constitution; thus magnesium, zinc, and cadmium yield bands composed of fine lines, degraded towards the violet, while fluted band spectra of beryllium, aluminium, and indium were found to be degraded towards the red. Thallium also yields a fluted spectrum; gallium gives a line spectrum; lanthanum gives bands degraded towards the red; palladium gives bands in the nature of flutings composed of fine lines; germanium gave very faint indications of bands; rhodium and iridium both lines and bands. It became manifest that elements belonging to the same group in the periodic system of classification exhibited banded spectra which are similarly constituted, and hence similarly constituted molecules of the elements have similar modes of vibration, whether at the lower temperature of the flame or at the higher temperature of the arc or spark. Banded spectra are thus shown to be connected with the periodic law.

A great advantage is to be derived from an investigation of banded spectra from a theoretical point of view, as well as from the application of this method to the analysis of terrestrial matter. While the spectra are easily obtained, they can be applied in a very simple manner to the chemical analysis of minute quantities of material, and may readily be made quantitative.

M. Armand de Gramont has described a method of obtaining spectra of metals and metalloids by means of a spark, and has given the analysis of eighty-six mineral species. The novelty and importance of his work lies in the method of obtaining spectra of such constituent substances as chlorine, bromine and iodine, sulphur, selenium and tellurium; also phosphorus and carbon when in a state of combination, as sulphates, phosphates, carbonates, etc.

There is a possibility of utilising this method for the quantitative determination of carbon, sulphur, and phosphorus in iron and steel during the process of manufacture.

Definition of an Element.

In a discussion on the question of the elementary character of argon in 1895, it was pointed out by me that argon gave a distinct spark spectrum by the action of condensed sparks, and therefore, on this evidence alone, it must be regarded as an element. The fact that it gave two spectra under different conditions was not opposed to, nor did it invalidate, this evidence, because such an element as nitrogen not only emits two spark spectra, but the two spectra can be readily photographed simultaneously from the same spark discharge.

It was proposed by M. de Gramont at the International Congress in Paris in 1900, and agreed, that no new substance should be described as an element until its spark spectrum had been measured and shown to be different from that of every other known form of matter.

This appears to me to have been one of the most important transactions of the Congress. The first application of this rule has resulted in the recognition of radium as a new element; it is characterised by a special spark spectrum of fifteen lines which have been fully studied and measured by Demarçay. It shows no lines of any other element.

Another application of this rule has recently been made by Exner and Haschek with preparations of the oxide of an element obtained by Demarçay, and named europium. It exhibits 1,193 spark lines and 257 arc lines.

I have already mentioned that one feature strikingly shown in the spectra of chemically related elements was the wider separation of the lines in pairs, triplets, or other groups; was in some way related to the atomic mass, since the separation was greater in those elements whose atomic weights were greater. Kayser and Runge, and also Rydberg, have shown that in the series of alkali metals the atomic weights are very nearly proportional to the squares of the differences between the oscillation frequencies of the lines, that is to say, the squares of the intervals between the lines. Runge and Precht have recently shown that in every group of elements that are chemically related the atomic weight is proportional to some power of the distance separating the two lines of the pairs of which the spectrum is constituted. In other words, if the logarithms of the atomic weight and distance between the lines be taken as co-ordinates the corresponding points of a group of elements which are chemically related will lie on a straight line. Applying this law to the determination of the atomic weight of radium they find that the strongest lines of the new element are exactly analogous to the strongest barium lines, and to those of the closely related elements magnesium, calcium, and strontium. The intervals between the two lines of each pair in the principal series, and in the first and second subordinate series, if measured on the scale of oscillation frequencies, are equal for each element, and the same law holds good for the spectrum of radium. From this the value 257·8 was found for the atomic mass of the element. This does not quite accord with the number obtained by Madame Curie, who found it to be 225. It will be interesting to see which number will eventually be proved to be the more correct.

It is now many years since I first pointed out that the absolute wave-lengths of the lines of emission spectra of the elements are physical constants of quite as great importance in theoretical chemistry as the atomic weights; in the light of recent discoveries this statement may be said to be now fully justified.

RADIO-ACTIVE ELEMENTS.

From the study of rays of measurable wave-lengths we have lately sailed under the guidance of M. Henri Becquerel into another region, where it is doubtful whether the rays conform to the undulatory theory. In fact, the rays are believed to be charged particles of matter, charged, that is to say, with electricity. Beyond doubt they are possessed of very extraordinary properties, inasmuch as they are able to penetrate the clothing, celluloid, gutta percha, glass, and various metals. They are, moreover, endowed with a no less remarkable physiological action, producing blisters and ulcerations in the flesh which are difficult to heal. It is an established fact that such effects have been caused by only a few centigrammes of a radium compound contained in a glass tube enclosed in a thin metallic box carried in the pocket.

From this we can quite understand that there is no exaggeration in the statement attributed to the discoverer, Professor Curie, by Mr. W. J. Hanmer, of the American Institute of Electrical Engineers, that he would not care to trust himself in a room with a kilogramme of pure radium, because it would doubtless destroy his eyesight, burn all the skin off his body, and probably kill him.

It remains for me to express regret that without an undue extension of the time devoted to this address it would have been scarcely possible to afford adequate treatment to the absorption spectra of inorganic compounds, particularly those of the rare earths, and such also as afford evidence of the chemical constitution of saline solutions; or of organic compounds closely related to coloured substances and dyes, the investigation of which leads to the elucidation of the origin of colour, and serves to indicate the nature of the chemical reactions by which coloured substances may be evolved from those which are colourless.

Chemistry is popularly known as a science of far-reaching importance to specific arts, industries, and manufactures; but it occupies a peculiar position in this respect, that it is at one and the same time an abstract science, and one with an ever-increasing number of practical applications. To draw a line between the two and say where the one ends and the other begins is impossible, because the theoretical problem of to-day may reappear upon the morrow as the foundation of a valuable invention.

NOTE ON SULPHUR IODIDE, B.P.

BY F. H. ALCOCK.

The mode of preparing this substance, adopted by the B.P., is to heat the proportions of sulphur and iodine in a flask, and subsequently to break the flask and remove therefrom the product. As the flask used is generally of thin glass it often happens that the fragments of glass are so small as to escape notice, which may, unless great care is exercised, find its way into the ointment, which at once makes the process open to objection. It is now suggested that, since the product is readily soluble in carbon bisulphide—it is stated to be one part in four, presumably by weight—this solvent could be used, especially when warmed, for the removal of the product, and thus save the vessel, and, what is far more important, eliminate all chance of the presence of minute particles of glass. In order to test this suggestion, 60 grains of iodine was intimately mixed with 15 grains of sublimed sulphur in a glass mortar; chemical change appeared to result, for the colour of the mixture was light grey. This was transferred to a test-tube, lightly corked, and gently warmed on an iron tray. The mixture rapidly changed to an iodine-like crystalline mass, and the visible loss of iodine was very small indeed; final melting followed, but it was not fluid enough to pour out of the test-tube, the liquid proceeding about two inches up the tube, and was rotated to cover in thin layer this part of the test-tube. Carbon disulphide was added, first ½ fl. oz. was used, which dissolved much and formed a permanganate-coloured solution, and what remained insoluble, owing to the deficiency of the CS_2 to promote solution, assumed a granular appearance, and, with a little dexterity, was removed from the tube to an evaporating dish, without loss, by using 2 fl. drachms more of CS_2. This with glass rod was weighed, and the CS_2 blown off. The dish weighed periodically gave a residue which, after standing over night, did not smell in the least of CS_2, had lost 9 grains, and what remained was in a granular crystalline form, non-adherent to rod and dish, easily manageable, and in a suitable condition for forming the ointment. It responded to official tests. This operation was conducted by several students, who, as is their wont, put the perennial question, "Would they allow us to do that up there?" The writer was not able to answer this question, as is generally the case, but at least the gentlemen hinted at might make the next batch in the above manner and report their experience of the suggestion.

Aromatic Cachous.

Peppermint oil, 30 minims; lemon oil, 20 minims; neroli oil, 20 minims; cinnamon oil, 20 minims; cloves in powder, 40 grains; vanilla, 120 grains; orris root, 120 grains; powdered sugar, 6 drachms; extract of liquorice, 10 drachms; mucilage of acacia, *q.s.* Mix, mass, roll flat, and cut into suitable shapes. Dry at a low temperature.—*Drugg. Circ.*, **46**, 234.

THE STUDENTS' COLUMNS.

THE PHYSICS OF THE WASH-BOTTLE.

States of Matter.

One of the first pieces of apparatus which the student of chemistry finds himself called upon to use in the laboratory —and one for which he usually retains, throughout his career as a student, a measure of affection—is the so-called "wash-bottle." There is no need to describe here the construction of this in its simplest form, but it may not be without value briefly to refer to a few of the many physical phenomena which are exemplified in the wash-bottle and the fluids which it ordinarily contains, particularly with regard to the physical properties of those fluids. The word "fluids" is used advisedly, because the wash-bottle contains another fluid in addition to the water which it may be assumed to hold. The second fluid, however, is one which might probably not be described as such by the unthinking; it is an invisible fluid, or mixture of fluids, filling the space above the water in the bottle. For air and the vapour of water are fluids just as much as water itself.

This leads us to the necessity of having a perfectly clear idea of the difference between solids, liquids and gases, a difference which it is much more difficult to define than may appear to be the case. Still dealing with the wash-bottle, we have in the cork and the glass two good examples of different varieties of solids. Both alike are bodies which offer, in comparison with fluids, very considerable resistance to forces tending to change their shape. And it is on this property that the best definitions of solids and fluids are based. Thus,

> A solid is a body which can offer permanent resistance to forces tending to change its shape.
>
> A fluid is a body which can offer no permanent resistance to forces tending to change its shape.

Fluids, as stated above, may be subdivided into two main classes, and the definitions of a liquid and a gas may be stated as follows:—

> A liquid is a substance which can offer no permanent resistance to forces tending to change its shape, but it offers great resistance to forces tending to diminish its volume.
>
> A gas is a substance which can offer no permanent resistance to forces tending to change its shape, and it also offers little resistance to forces tending to diminish its volume.

It should be remembered that water and other liquids can be diminished in volume to a certain extent by application of great pressure, but, in comparison with the much greater difference caused to the volume of a gas when pressure is applied, liquids may be regarded as being practically incompressible.

It will probably occur to the observant student that in certain cases it is a matter of great difficulty to decide whether a given substance should be classed as a solid or as a fluid. Burgundy pitch, for example, if placed on a flat surface will gradually flow over the whole and assume the shape of that part of any receptacle with which it is in contact. A rod of sealing-wax, again, if supported at the two ends, will in the course of time bend in the middle, the change of shape being produced by no greater force than gravity. Such fluids are termed "viscous fluids," and are sometimes distinguished from plastic solids, such as ordinary beeswax or hard paraffin at normal temperatures. In some cases, as in the case of oil of theobroma, the difference between the temperature of a summer day and a summer evening may be sufficient to remove the substance from the list of fluids and transfer it to the list of solids. For with various substances, of which, ice, water, and steam may be taken as typical, the physical state of a substance which remains chemically the same throughout may depend solely on temperature. The influence of even small changes of temperature on the physical state of a body really renders unnecessary any strictly-marked dividing line between fluids and solids, the distinction being frequently, as will have been seen from the above remarks, of a purely arbitrary character. For example, a series of mixtures of paraffin wax and soft paraffin in different proportions might show so gradual a variation as to defy classification. The important thing is that the student should be in a position to understand the main properties which distinguish broadly between solids and fluids.

The definitions already given include some of the distinctive properties of the two main kinds of fluids, but other characteristics call for remark. Thus, whatever quantity of water be placed in the wash-bottle, that water has all the time a definite density; in other words, speaking a little loosely, a definite volume of the water has all the time a definite weight. Now, suppose that the tubes in the cork are closed and the position of the cork in the neck of the flask is then altered by moving up or down like a piston. The density and the volume of the water remains the same, but the density and volume of the gas above the water will vary quite appreciably. It may be mentioned that there is such a thing as an intermediate state between liquids and gases. To enter into that, however, would be to go beyond the scope of elementary physics, and the consideration of the intermediate or "critical" state may therefore be postponed until the student comes to work for the Major Examination.

Another point must be noticed: The whole space above the water, however large or small, is filled with the mixture of air and water-vapour, and the slightest change of pressure affects the volume and the density of every portion of that mixture of gases. The liquid water, on the other hand, occupies only the lower portion of the bottle, has a free upper surface, and, unlike the gas, does not increase indefinitely in volume when the pressure on its surface is diminished. The fact that the free surface of the water when at rest is horizontal is one with which everyone is familiar, and is indeed a definite physical law. The use of the spirit level is, of course, based partly on this principle.

Another important principle involved in the use of the wash-bottle is the transmissibility of fluid pressure. When an operator blows into the shorter tube, water emerges in a stream from the longer tube, provided of course that the latter dips below the surface of the water. It is easy enough for the casual student to dismiss this experiment with a wave of the hand, and to say that it is due to the increased pressure inside the bottle. Actually a great deal must be known on the subject of fluid pressure before a thorough explanation can be given. One principle, for example, is that an increase of pressure, at any point of a liquid at rest, is transmitted equally to every other point. But this aspect of the question must also be reserved for consideration at a later stage of the student's career. It is only referred to here with the object of showing how much may require explanation in a comparatively simple operation.

The possibilities of the wash-bottle and its contents are by no means exhausted in the above brief notes. It will repay the student to consider for himself, and to study in suitable text-books other properties of solids and fluids, especially the phenomena in connection with the freezing and boiling of water, and the effects thereon of pressure. Suitable books for the purpose are Glazebrook's 'Mechanics and Hydrostatics' Part iii., "Hydrostatics," Ch. 1-3 (Camb. Univ. Press. 8s. 6d.), or Briggs and Bryan's 'Elementary Text-Book of Hydrostatics' (Univ. Corr. Coll. 2s.).

BRADFORD CHEMISTS' ASSOCIATION.

ANNUAL MEETING.

Tuesday, September 22, 1903, the retiring President (Mr. J. A. Mitchell) in the chair.

Annual Report.

The report presented by the Secretary (Mr. D. S. Priestley) stated that fifteen general meetings and six council meetings had been held during the last session, and papers had been read on these occasions. A discussion on one occasion on the subject of "Earlier Closing" had actually resulted in the shortening of business hours in some shops. The opinion was expressed that the West Riding Federation, which had been formed during the last year, was likely in the future to find opportunities of good and useful work. The trading section in connection with the Association was referred to as being now in good working order, and proving of pecuniary benefit to those who had taken advantage of it. The number of articles included in the operations of the section had steadily increased during the year, and the total now stood at forty-eight. The membership of the Association, it was stated, still continued satisfactory, the number at present being seventy-three, whilst a few more were shortly to be submitted for election.

The balance-sheet, which was submitted by the retiring Treasurer (Mr. R. H. Marshall), showed that there was a balance in hand of £2 15s. 5d.

Election of Officers.

The election of officers resulted as follows:—President, Alderman Henry Dunn; Vice-Presidents, Mr. J. A. Mitchell and Mr. Arthur Hanson; Treasurer, Mr. J. T. Metcalfe; Hon. Secretary, Mr. D. S. Priestley; Council, Messrs. L. H. Sutcliffe, H. W. Gregory, R. T. Silson, J. G. Brigham, H. G. Dutton, and H. R. Jackson.

Upon consideration of the approaching election of Divisional Secretaries of the Pharmaceutical Society, it was resolved to recommend the members in this district to vote for the re-election of Messrs. J. A. Mitchell, A. H. Waddington, and R. H. Marshall.

The West Riding Federation.

The Hon. Secretary read a letter which had been received from Mr. R. Broadhead, Hon. Secretary of the West Riding Federation, in which the writer suggested that it should be pointed out to the members of the Association that it was advisable before the general meeting in October that the Council, or a small committee, should thoroughly overhaul the rules of the Federation. At the last meeting of the Federation he had been instructed to have the rules printed; but on going over them he found that they were remarkable examples of the usual vagueness, incompleteness, and ambiguity which characterised pharmaceutical affairs.

Mr. Waddington said that Mr. Broadhead was himself to a great extent responsible for the drafting of the rules, and the delegates from other associations who attended the meeting at which the rules were dealt with, found that the Dewsbury delegates had come with a scheme fully prepared, and that it was most difficult to get any alterations made at all. Now, the delegates from other associations were in the position that they could not read over the rules and help to deal with the points which Mr. Broadhead had raised, for the simple reason that they had not got copies of them, and would not be able precisely to remember what they were.

The Hon. Secretary suggested that the Council of the Federation ought to deal with the matter.

Mr. Waddington moved that that course should be taken, and that the Secretary should suggest that the first step was to get the rules into type, so that each of the gentlemen concerned could have a copy of them.

This resolution was seconded and carried.

The Secretary reported the progress which had been made with the preparation of the syllabus for the ensuing session, and further arrangements were discussed.

PRESTON CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Tuesday, September 22, 1903, at the Moor Park Pharmacy, Preston.

The Compendium of Medicines.

Formulæ for submission to the Pharmaceutical Society were considered, and a number were selected.

In the course of the discussion, the Secretary said everything would have to bear a stamp which was for the relief or cure of an ill; even corn solvent would require a formula.

Mr. Hadfield asked what the position was in regard to homœopathic preparations?

Mr. Arkle replied that they did not require a stamp, as they were not recommended in the ordinary sense.*

Mr. Williamson thought it would be an excellent thing for the whole trade if, so far as proprietary articles were concerned, the chemists would combine.

Protection of Prices.

The Secretary said the suggestion had been thrown out that the Preston Chemists' Association should meet the Preston Grocers' Association and talk matters over with them.

Mr. Arkle was opposed to any proposal of that character. He would not meet them at all. Grocers had no right to sell drugs.

The Secretary said there were certain things belonging to both trades, such, for example, as foods, which the grocers had a perfect right to sell.

Mr. Arkle said the manufacturers of foods were largely to blame for chemists not selling foods. They protected the price not at the retail price, but much below the retail price, while keeping the wholesale price as it was; he mentioned one case in point.

Mr. Hadfield was also of opinion that they should not meet the grocers. Touching other matters, he remarked that the Pharmaceutical Society made a mistake in acknowledging companies in their Bill. He should have ignored their existence altogether and have gone in for plenary powers on the lines advocated by Mr. Marshall Hall, K.C.

After further discussion the meeting was adjourned.

BURNLEY CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Thursday, September 17, 1903, at the Empress Hotel, Burnley, Mr. J. A. Heaton, President, in the chair.

Medicine Stamp Duty.

The President introduced this matter, and said he thought the best policy for the Association to pursue would be to play a waiting game, and take no action for the present. He thought there was no doubt many of the big firms of makers would combine and fight the matter in the Courts. This would be all to the advantage of the retail chemists, and he thought they stood to gain and not lose by waiting. If they went to a big expense now in altering their labels it might be money thrown away. Meanwhile they could follow the Journal and see how matters developed.

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* Homœopathic remedies are just as liable to stamp duty, if sold with a recommendation, as any other compounded medicines.—[Ed. *P.J.*]

Mr. Barlow and Mr. Walker took the same view.

The Secretary intimated that in connection with this matter he had received a letter from the Secretary of the Pharmaceutical Society, stating that a compendium of medicines in general use was to be published, and it was desired that all chemists who had any special formulæ should send them up.

The P.A.T.A.

Mr. Dodsley stated that since the last meeting he had written to various firms asking them to allow their preparations to be placed on the P.A.T.A. list, and he was directed to write to the firms who had not replied.

Winter Session.

Arrangements for the winter session were afterwards discussed, and Tuesday was fixed upon as a suitable evening for papers and social gatherings.

LEGAL INTELLIGENCE.

Sale of Food and Drugs Acts.

Camphorated Oil.

On Thursday, September 17, 1903, at Smethwick, Mr. William Adams, chemist and druggist, of Cape Hill, Smethwick, was summoned before the borough magistrates for selling, on July 17, camphorated oil which was not of the nature and substance demanded.

Mr. Van Tromp explained that the oil was deficient of 62 per cent. of camphor, the essential ingredient. The defendant, he said, was a well-known chemist, and the oil was used a great deal for rheumatism and sprains.

Mr. Adams explained that the offence was due to a mistake. His son had been making camphorated oil, and his wife, in serving the amount asked for, exhausted one bottle of oil and completed the amount out of a bottle of pure olive oil, which the son had not transformed into camphorated oil.

The Bench deemed it to be a technical offence, and imposed a fine of £1 7s. 6d., including costs.

Sweet Oil.

On Thursday, September 17, 1903, at Lambeth Police Court, Charles Green, of Commercial Road, Peckham, S.E., was summoned for having sold mineral oil as sweet oil.

Mr. Kirby, who defended, said the defendant bought the business from the previous owner in March last, and the oil which he sold to the inspector was part of the stock, and was contained in a flask. Defendant and most other people in the trade had always believed that oil received from a wholesale house in a flask was what they might fairly sell as sweet oil, and the defendant sold it in the belief that it was sweet oil.

The Stipendiary fined defendant 10s. and costs.

Jane Provan, of High Street, Peckham, S.E., was also fined 20s. and costs for selling mineral oil as sweet oil.

Sweet Spirit of Nitre.

On Friday, September 18, 1903, at Wakefield, Wm. Whitehead, of Normanton, was summoned for selling sweet spirit of nitre which was not up to the B.P. standard of strength. The drug was certified to contain an excess of water to the extent of 1·04 per cent. The defence was that the strength of the drug had evaporated through the bottle being continually opened. An inclusive fine of 20s. was imposed.

POISONING CASES AND INQUESTS.

The deaths by poisoning during the seven days ended Wednesday, September 23, 1903, numbered eighteen.

Poison.	Accident.	Suicide.
Ammonia	1	—
Carbolic Acid	—	2
Chloroform	3	—
Hydrocyanic Acid	—	1
Laudanum	2	1
Mercury	1	—
Oxalic Acid	—	1
Ptomaines	1	—
Strychnine	—	1
Tincture of Chloroform and Morphine	—	1
Kind not stated	1	2
Total	9	9

Ammonia.—A youth at Coatbridge drank some ammonia by mistake and died.

Carbolic Acid.—A striker in Crewe Works, and an old woman at Brightside, committed suicide by carbolic acid.

Chloroform.—A child at Colchester Infectious Diseases Hospital, and a commercial traveller at Highgate Hill Infirmary died "under chloroform." At Montacute, near Yeovil, a railway packer saturated a cloth with chloroform, which he took to bed; he was found later suffocated.

Hydrocyanic Acid.—At Eaglescliffe a retired shipbroker ended his life by prussic acid.

Laudanum.—A Bristol newsagent swallowed a large quantity of laudanum, cut a gas pipe in his bedroom, and died. A Manchester cotton agent at Kearsley, and a young lady at Kensington also died from laudanum poisoning, but there was no evidence to show whether an overdose of the poison was taken intentionally or not. Six empty poison bottles were found in the bedroom of the young lady, each apparently purchased at different shops, but the name and address of the chemist in each case had been scratched and torn off.

Mercury.—A child at Newark Hospital died, and poisoning was suspected. An analysis of the contents of the stomach indicated mercurial poisoning, but how the child obtained the poison could not be ascertained.

Oxalic Acid.—An Islington pawnbroker committed suicide with oxalic acid.

Ptomaines.—A little girl is supposed to have died at Walthamstow as the result of ptomaine poisoning, consequent on eating a pork pie.

Strychnine.—A bricklayers' labourer, at Foleshill, purchased three-pennyworth of rat poison from a chemist, signing the poison-book; he then went away and swallowed the poison.

Tincture of Chloroform and Morphine.—A naval pensioner at Portsmouth took an overdose of tincture of chloroform and morphine, it is supposed intentionally.

Kind Not Stated.—A Bradford commercial traveller and a woman of the same town have died from the effects of poison. At Middlesbrough an actress has died from the effects of an irritant poison alleged to have been contained in medicine supplied by a herbalist near Leeds.

Attempted Suicides.—Eight cases of attempted suicide are reported, the poisons used being ammonia, carbolic acid, oxalic acid, and vermin killer. There were also two cases in which the nature of the poison was not stated.

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

A Chemist's Will.—Mr. William M'Kechnie, of Pollokshaws, and of Glasgow, chemist and drysalter, who died on June 16 last, has left personal estate valued at £4,460 7s. 1d.

Robbery at a Chemist's.—On Tuesday, September 15, the premises of Mr. A. Akam, chemist and druggist, King Street, Huddersfield, were broken into by thieves during the night. Very little booty was secured.

Memorial to a Chemist.—A white marble tablet has been placed in Wellingborough Wesleyan Church to the memory of the late Mr. O. E. Trezise, chemist and druggist, who was a prominent member of the church, and had held all the lay offices.

Chemical Prize Competition.—The American Grape Acid Association (San Francisco) offers a reward of 25,000 dollars (£5,137) to any person who may devise a process for the utilisation of California grapes to produce tartaric acid at a price which would permit of exportation without loss.

Too Much Stock.—The Yarmouth Board of Guardians has been considering the workhouse drug supply. It was reported that the drugs at the workhouse had been valued at £94 4s. 6½d., and strong objection was taken to such a large stock of drugs being kept, one member expressing the opinion that £20 worth was ample. No action was taken in the matter, however.

Fuller's Earth Found.—It is reported that, while sinking a well in a field adjoining his residence, Mr. E. J. Barton, a Somerset mineralogist, of Binegar, near Bath, came upon a valuable bed of fuller's earth. Excavations have since been made in other parts of the property, with the result that the supply seems inexhaustible. The earth is of an exceptionally fine nature, and free from grit.

Royal Institute of Public Health.—The Harben lectures for 1903 will be given in King's College by Professor Ferdinand Hueppe, M.D., of Prague, at five o'clock on each day, as follows:—Thursday, October 8, on "The Etiology of Infectious Disease from the Standpoint of Natural Science"; Monday, October 12, on "Hygienic Lessons to be Derived from the Serum Treatment"; Thursday, October 15, on "Tuberculosis."

A Museum of Fresh Wild Flowers.—A scheme which should possess considerable educational value, and give a healthy stimulus to field-botany, is reported as having been adopted in the Brighton Museum. Persons are encouraged to bring in fresh bunches of local wild flowers, culled during their walks, to one of the officials, who arranges the specimens each morning in glass vases containing water, and affixes both the botanical and English names.

Chemists and Motoring.—The connection between chemists and druggists and motorists seems at first sight to be somewhat remote, but, according to an evening newspaper, a connection has been found by a suburban chemist, who displays a notice warning all whom it may concern that the glazed cap affected by motorists is likely to cause baldness. He is ready to sell a preparation which, despite the shiny headgear, may induce the capillary growth to remain on the scalp.

Liquorice Juice for the Tobacco Trade.—Sicily produces wild liquorice to the extent of about 1,000 tons annually. This is not, however, sufficient for the requirements of the manufacturers of the juice, who are obliged to import root from Greece and Turkey. During 1902 it was estimated that about 4,000 tons were imported. It generally requires about six tons of root to make one ton of juice. The latter is principally employed in the tobacco trade, but for this the more bitter root from Asia Minor appears to have advantages over the Sicilian variety, which seems to affect the keeping quality of the tobacco.

Vitality of Seeds.—The vitality of seeds has again been remarked on in the lay Press, and some of the familiar "mummy" stories have been once more brought forward with an air of great solemnity. One correspondent suggests that the seeds said to have been discovered still active among the swathing cloth of an Egyptian mummy may have been protected from bacterial attack by the medicaments used in the preservation of the corpse. Another writer recalls the fact that some years ago a Parisian house made experiments with 150 species of kitchen-garden plants, and in forty-four cases germinative power lasted for upwards of ten years.

A Chemist and His Vote.—In the Cowes Revision Court, on Thursday, September 17, Mr. Herbert S. Hewett, chemists' assistant, claimed a vote under the Lodger Franchise. The claimant's father, Mr. Wm. Hewett, chemist, appeared in support of the claim, which was backed by the Liberals.—Mr. Marsh, for the Conservatives, maintained that the claim was bad and informal, because it did not state whether the room was furnished or unfurnished, nor did it state what rent was paid.—The Revising Barrister (Mr. Folkard) said the father of the claimant signed himself "chemist to the King," therefore, it was not the case of an ignorant working-man. He declined to allow the claim to be amended, and disallowed the vote.

Halifax Analyst's Report.—The Halifax Borough Analyst, Mr. Wm. Ackroyd, in his annual report, just issued, says 217 samples were received for analysis during the year, as compared with 183 in the previous year. The samples included:—Lard, 1; mustard, 2; pepper, 1; ginger, 2; malt, 3; camphorated oil, 3. The results of the analysis were that 189 samples were found to be genuine, three doubtful, and nineteen adulterated. The percentage of adulteration (8·75) was abnormally high, one cause of which was a repetition of cases against fraudulent persons. The adulterated samples included three of beer, with from 1/200th to 1/60th of a grain of arsenious oxide per gallon; and one malt containing 1/200th of a grain of arsenious oxide per lb.

Serum for Killing Rats.—According to a daily newspaper, Dr. Danyse, of the Pasteur Institute, has discovered a method of killing rats without danger to other animals. He ascertained that rats are liable to a disease peculiar to themselves, and, having isolated the bacillus, he prepared a decoction and administered bread steeped therein to a number of rats, all of which died in periods varying from five to twelve days. Further experiments were carried out in the Paris sewers, and the results were satisfactory in every case. The rat-killing serum is already in use at the Commercial Exchange in Paris, where quantities of grain are stored, and the Marseilles authorities have given an order for a considerable quantity with a view of materially lessening the number of rats there.

Royal Masonic Institution for Boys.—In connection with the October election for admittance to this institution, the votes and interest of the patrons, presidents, governors, and subscribers are being solicited on behalf of Charles Herbert Slingsby Spencer, aged ten years, son of Charles Spencer, chemist and druggist, who is totally unable to follow any occupation, in consequence of his being afflicted with locomotor ataxy. The case is strongly recommended by the master, wardens, and brethren of the "Hugh Owen" Lodge, No. 2,593; the "Old Concord" Lodge, No. 172; the "St. John's" Lodge, No. 1,306; the "Ranelagh" Lodge, No. 834; the "Hammersmith" Lodge, No. 2,090; also by Bro. John Harrington, 45, Kensington High Street, London, W., by whom proxies will be thankfully received.

Costs of Dissolving Partnership.—At the Brompton County Court (London), on September 25, before Judge Stonor, Messrs. Betts and Co., solicitors, King William Street, E.C., brought an action against Mr. Charles Hillman Gane, described as a chemist, 252, King Street, Hammersmith, W., also against Mr. Edwin Frederick Dewdney, wholesale chemist, 180, Railway Approach, Shepherd's Bush, W. The plaintiffs' claim was for £12 17s., in respect of professional services rendered, mainly in connection with the execution of a deed of dissolution of partnership between the two defendants. Judgment was given for the plaintiffs for the amount claimed, less £5 paid on account. Gane was relieved from payment of £3 7s. in respect of the first few items in the account, and judgment went against the defendants jointly for the balance of the account.

The Medical Profession and Quack Medicines. — A correspondent of the *Lancet* states that there is a growing custom among West End physicians to advise the use of "patent" medicines. They usually go through the farce of writing out what purports to be a prescription on headed note-paper and signed, but on sending to have it dispensed the patient is supplied with a proprietary medicine and not a prescription from the British Pharmacopœia which experience dictated to the mind of the great physician as suitable to the malady. The druggist would charge nothing for suggesting the same article as a good commercial nerve tonic. Should there be no remedy for such solitary two-guinea advice as "Eat an apple before breakfast"? The writer concludes by saying that he has the deepest respect for the honourable professions, and sincerely hopes that the medical profession is not falling upon degenerate days.

Edinburgh Chemists' Golf Club.—The sixth and final round of the hole and hole competition for the "Connell Smith" putter was played on Thursday last, over the Braids, the finalists being Messrs. D. S. Philp and Jas. Stott, and resulted in favour of the latter by 5 up and 3 to go. The autumn holiday competition was played at Dunbar on Monday, the 21st inst., with the following results:—1st prize and Gibson Handicap Medal: Mr. G. F. Anderson, 107 −25 = 82; 2nd: Mr. D. S. Philp, 85 + 1 = 86; 3rd: Mr. W. M. Manson, 99 — 8 = 91. A special prize, presented by Mr. H. D. Alexander for the lowest score for 12 holes, was won by Mr. A. J. Dey, 67 − 9 = 58. The company were entertained to luncheon in the Roxburghe Marine Hotel by the captain, Mr. W. B. Cowie. There was a large turn-out. Mr. Geo. Robertson, having the lowest aggregate (249) for three scores in the Gibson Medal competitions, becomes the holder for the year, and receives a gold pendant. This finishes the competitions for the year.

Preservatives in Milk.—Considerable interest was aroused by a prosecution in Belfast, on Monday, September 14, where a farmer was summoned under the Sale of Food and Drugs Acts for selling milk containing one part of formalin in 10,500 parts. The usual expert evidence was given on both sides as to the injurious or non-injurious properties of that proportion of formalin. The magistrates, however, accepted the views of the experts on the side of the prosecution, and fined the defendant the sum of £5. Another case was heard last week in South London, where a vendor was summoned at the instance of the Southwark Borough Council, for selling milk containing ten grains of boric acid per pint. Counsel for the defendant did not contest the point as to whether or not that quantity of boric acid was injurious, but relied on the contention that the defendant had not added the acid himself, and had used "reasonable diligence" by having submitted to analysis on previous occasions the milk supplied by the same firm of wholesale dealers. The defence was successful.

Grocers and Medicine Stamp Duty.—It seems likely that the various local associations of grocers throughout Great Britain will be giving attention during the coming session to the question of stamp duty on proprietary medicines. The Grocers' Federation has already been approached on the subject from more than one quarter, and we learn from the *Grocer* that the Swansea and District Grocers' Association last week discussed the question. Some of the members do not seem to have had a clear idea of the matter, one speaker being of opinion that the action of the Board of Inland Revenue would render it difficult for a poor person to buy even a pennyworth of castor oil at a grocer's. In a letter which was read at this meeting, from the Secretary of the Grocers' Federation, it was stated that the Federation was co-operating with some of the leading manufacturers in bringing the matter before the Board of Inland Revenue. A correspondent of the *Grocer* complains that the Secretary of the Federation does not seem to have realised the gravity of the situation from the point of view of the grocer, and hints that Mr. Kirby, Solicitor to the Chemists' Defence Association, who has also acted on occasions for the Grocers' Federation, might have kept Mr. Giles informed of the disadvantages caused to grocers by the action of the Board of Inland Revenue.

"Jackson's Febrifuge."—At the adjourned inquest on Wednesday, September 23, at Moston, near Manchester (*vide antea*, p. 409), on the body of a child who died in peculiar circumstances, medical evidence was given to the effect that death was caused by bronchial pneumonia of both lungs, and not by "Jackson's Febrifuge." Mr. Chas. Escourt, city analyst, who had analysed the "medicine," said that it contained the following approximate quantities of the substances named:—

	Grs. Per Fluid Ounce.
Ammonium chloride	4·0
Potassium chloride	2·4
Potassium sulphate	6·2
Sodium sulphate	4·0
Sugar	10·0
Ipecacuanha	2·0
Camphor	1·0
Cloves, ginger, liquorice, and probably rhubarb	9·0

Chloroform, a faint trace.

The representative of the man Jackson said that there were really seventeen ingredients in the mixture. In summing up, the Coroner commented in strong terms on the conduct of Jackson in recommending the stuff, which was of no practical value, as a cure for almost everything, including the most virulent infectious diseases. The jury returned a verdict of "death from natural causes," and further comments were passed on the "febrifuge."

Protection and Chemical Industries.—Mr. Ivan Levinstein has written to the *Manchester Guardian*, controverting some of the statements previously made (see p. 423) by Mr. Alfred Mond, a staunch Free Trader, who had endeavoured to show that Protection would not be beneficial to chemical industry. Mr. Levinstein states that Protection in Germany is the only cause which enables Germany to invade our markets with bleaching powder. By the electrolytic decomposition of salt, the method largely carried out by German manufacturers, caustic alkali and bleaching powder are simultaneously produced; but, comparatively, larger quantities of bleaching powder are obtained than caustic alkali. The world's demand for bleaching powder is relatively stationary, while the demand for caustic alkali is increasing at a rapid rate. The consequence is an involuntary over-production of bleaching powder, which Germany is forced to export. It would, however, not be possible for her manufacturers, at the current price for caustic alkali, to export this surplus bleaching powder at prices ruinous to our manufacturers were it not for her high protective tariffs on caustic alkali as well as on bleaching powder. It is this home-trade profit obtained by Protection, and not newer methods of manufacturing, which permits her to export bleach at a price which our manufacturers, not supported by a protective home market, are unable to accept. In Mr. Levinstein's opinion, there cannot be any doubt that if Germany would remove her tariff on caustic alkali and bleaching powder their invasion of our markets would be speedily stopped and the tables turned.

Grocers' Exhibition.—Despite the extension of the co-operative society movement, and the announcement which appeared in the *Times* some twelve months ago, to the effect that the grocer was disappearing, the eleventh annual exhibition and market in connection with the grocery and provision trades, which has this week occupied the Agricultural Hall, Islington, has been, from many points of view, more successful than any of its predecessors. Quite a number of firms are represented whose wares are retailed alike by the chemist and the grocer, but there appears to be a marked scarcity of packed medicinal specialties displayed this year. Whether it is that the grocer has found these articles bear no larger profit than do tea and sugar, or whether he has been scared by the Inland Revenue authorities' decision with reference to nostrums, is not easy to ascertain, but it certainly appears that fewer firms are exhibiting that class of goods whose sale can in no way be said to be part of the grocer's business. The Crown Perfumery Company, 108, Fore Street, E.C., have, as usual, a handsome display of perfumes and toilet articles, prominence being given to the perfumes and soaps especially packed in handsome caskets for the Christmas trade. The firm's latest productions include "Crown Nadia" soap and perfumes, which are undoubtedly high-class articles. Vinolia Co., Limited, Malden Crescent, N.W, have two handsomely-fitted stands, at which are exhibited samples of all classes of goods manufactured at Stratford and at Malden Crescent. Among these might be mentioned the exceptionally handsome Christmas caskets, including a variety of hand-painted ones, as well as the beautiful cut-glass bottles. The newest productions are Mylissia soap and perfume. Mr. Henry P. Mason, and a number of the firm's representatives, are in charge of these exhibits. T. and H. Smith and Co., 22, City Road, E.C., occupy the same position as in previous years, and culinary flavouring essences and essence of coffee, for which articles the firm is justly famous, are here displayed. Stiles, Limited, 72, Gray's Inn Road, W.C., are again well represented by a very handsome soda water fountain. Liebig's Extract of Meat Co., Limited, 4, Lloyd's Avenue, E.C., whose stall is in charge of Mr. J. W. Corbett, are exhibiting the well-known articles "Lemco" and "Oxo." Cerebos, Limited, 3, Maiden Lane, E.C., are again taking orders for the excellent salt "Cerebos." R. Hyde and Co., Limited, Lilford Road, Camberwell, S.E., have on show various kinds of bird food specialties. J. Symington and Co., Beaverbank Works, Edinburgh, are exhibiting, amongst other specialties, an article particularly suitable for sale by chemists, namely, essence of dandelion coffee. Armour and Company, 46a, Holborn Viaduct, E.C., have a handsome display, comprising a selection of high-class American toilet soaps, as well as a medicinal series of soaps, including sulphur, carbolic acid, and other antiseptics. The Erasmic Co., Limited, 117, Oxford Street, W., have a varied selection of toilet soaps and perfumes. G. S. Mumford and Sons, Farringdon Road, E.C., show, among other articles, flaked oats. Young's Patent Hygienic Bin Company are taking orders for hygienic bins, made of galvanised steel, without internal corners or crevices. H. N. Morris and Co., Gorton Brook Chemical Works, Manchester, are showing "Risco," a new disinfectant, which does not stain, and slowly volatilises on exposure to the air. Newball and Mason, Nottingham, have a substantial and businesslike exhibit of their various specialties, of which "Mason's extract of herbs" is, perhaps, the best known to chemists. T. S. Jackson and Sons, 186, Old Kent Road, S.E., manufacturers of varnishes and colours, are well represented. Among the other firms exhibiting the following might be mentioned:—Bovril, Limited; Virol, Limited; Stephen Smith and Co., Limited; Asbestine Safety Light Co., Limited; Vegox, Limited; "Rosbach"; Salt Royal Co., Limited; Thos. O'Brien, G. H. Gledhill and Sons, Limited; Marmite Food Extract Co., Limited; and Beaufoy and Company.

SCHOOL AND COLLEGE NEWS.

Central School of Pharmacy.—At the last demonstration which Mr. Sage gave at South Kensington Natural History Museum the students were particularly interested in the radium exhibit. Specimens of pitchblende and radium bromide are shown, and the marvellous physical effects of radium were seen by means of the spinthariscope and a barium platinocyanide screen. The exhibit is just inside the entrance-hall.

School of Pharmacy.—The inauguration of the Session, on Thursday next, October 1, will possess an especial interest. Not only will Dr. Swan, of "Ediswan" lamp fame, deliver an address, but the formal ceremonies in connection with the Martindale memorial and medal have been arranged to take place. In the evening, as has already been announced in the *Pharmaceutical Journal*, an informal smoking concert will be held at the Horseshoe Hotel, Tottenham Court Road, at 8 p.m. A considerable number of "Square" students of the last few sessions have promised to be present, and if the new students, as is hoped, also attend, a successful evening is assured.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. T. H. W. Idris, J.P., as President of the British Pharmaceutical Conference, has accepted the invitation of the Society of Pharmacy of Paris to be present at the celebration of the centenary of that Society on October 17.

Mr. Edward Evans, jun., Chairman of the Executive Committee of the National Liberal Federation, has been interviewed by a representative of the *Liverpool Daily Post* on the present political situation. Mr. Evans described himself as an uncompromising Free Trader, and stated that he expected that the general election was nearer at hand than most people thought. On Wednesday evening Mr. Evans was the guest of the evening at a dinner given by the Junior Reform Club.

Mr. D. H. Oxen, chemist, Bridge Street, Newcastle-under-Lyme, was unfortunate on September 17, in respect of a fire which occurred on his premises. Several fires, supposed to be the work of incendiaries, occurred in the town about the same time. The damage to Mr. Oxen's premises was, happily, not serious.

Mr. T. M. Kerruish, a pharmaceutical chemist, is about to sail for South Africa, under the auspices of the Wesleyan Missionary Society. He has passed through a period of three years' training at Richmond College, and in addition to the ordinary work of a missionary, he will undertake medical duties for which he has qualified. He was one of the sixty missionaries who took leave of their friends last week at a great valedictory meeting in Exeter Hall. The Rev. T. M. Kerruish, who is the son of the Coroner for the Isle of Man, takes with him the good wishes of his many pharmaceutical acquaintances.

TRADE NOTES.

Evans Sons Lescher and Webb, Limited, 60, Bartholomew Close, London, E.C., have just issued the new edition of their export price-list. This has been reset from cover to cover, and exhaustively revised, and with the price-list is included the fifth edition of the catalogue of Hawley's counter adjuncts. There is no need to comment on these well-known volumes, which are familiar to chemists in all parts of the world, and in which are comprised particulars of every article a pharmacist is likely to require.

Potter's Malt Egg.—A very excellent preparation, and one which should find a ready sale—especially during the winter season—is Potter's malt-egg, a concentrated extract of malt, with which is incorporated the yolk of eggs. As may be imagined from its composition, Malt-Egg is an easily digested and highly nutritious food substance, especially suitable for children and invalids. This article is packed in wide-mouth, capped bottles, bearing an attractive label, and readers would do well to apply to Messrs. Potter and Clarke, 60, Artillery Lane, London, E.C., for fuller particulars concerning it.

Stilwell's Oil of Peppermint, for which Mr. Henry Wheeler, 9, Great Tower Street, London, E.C., is the sole agent for Great Britain and Ireland, is an absolutely genuine peppermint oil of the very highest grade. It contains (according to Parry's analysis) 60 per cent. of menthol, which may be regarded as the highest figure usually attained by the best American oils, and is of very sweet odour and flavour. Its solubility is considerably greater than that of the average unrectified American oils. The following figures, taken from Mr. Parry's report, show the general characters of the oil :—Specific gravity at 15°, 0·9068; optical rotation (100 Mm.) − 28° 30′; refractive index at 20°, 1·4618; total menthol, 60 per cent. The oil is soluble in three volumes of 70 per cent. alcohol, with the slightest opalescence. We have no hesitation in recommending it to chemists and to manufacturers as an article of the finest quality. The oil can be obtained in wholesale quantities from the usual dealers and by retailers through the wholesale houses.

Booklets as Advertisements.—Particulars of one of the most instructive competitions in the way of picture puzzles are set forth in a little booklet just issued by Messrs. Wright, Layman, and Umney, Limited, 48, Southwark Street, London, S.E., under the title of "Once Upon a Time"; or, "Historical Pictures Without Words." The title gives a sufficient indication of the nature of the competition, but for fuller particulars as to retailers' own advertisements appearing on the back, etc., readers should apply to the firm, for it is quite evident that the scheme is one which will draw customers to the chemist. It should not be necessary, at this time of day, to remind readers that Wright's Coal Tar specialties are sold at protected prices, nor is there any need to point out the advantages to the retailer of such a policy. At the same time it may be well to state here that Wright's Coal Tar Soap has been advertised for forty years, and that it is probably the only one advertised. In view of these facts, it is only natural to suppose that the demand for coal tar soap is, to a very large extent, due to those who have kept the article before the public during so many years. Readers are again advised to write for particulars concerning the competition.

BANKRUPTCY INTELLIGENCE.

An Unconditional Discharge.

At the Preston County Court, on Tuesday, September 22, James Philip Keeley, chemist, Station Terrace, and 433, Lytham Road, South Shore, Blackpool, applied to his Honour Judge Coventry for his discharge from bankruptcy. Debtor had been managing a chemist's shop at Blackpool for his father, who carries on business as a builder at Blackpool and Blackburn. The bankrupt had a branch post-office at his shop, and in September, 1901, a robbery was committed, and £42, the moneys of the Postmaster-General, stolen. The Guarantee Society paid the money, and afterwards sued Keeley, against whom judgment was given, which, with costs, amounted to £58 6s. 1d., to which he attributed his failure. His Honour said he had no hesitation in stating that the bankruptcy was the result of a state of things over which Keeley had no control, and, therefore, he could have his unconditional discharge forthwith.

Re Walter Charles Langbourne, Chemist and Druggist, Hull.

The first meeting of the creditors in the bankruptcy of Walter Charles Langbourne, chemist and druggist, of 285, Hedon Road, 12, Gordon Street, and 23, Prince's Road, Hull, was held before Mr. C. H. King, the Deputy Official Receiver, on September 22. The Deputy Official Receiver asked the debtor as to how he came to estimate the value of the stock in the three shops at £3. Debtor said he had not been buying any stock for some time, and consequently it had run down. He had been doing with as little as possible. He had tried to sell a shop for at least eight months. He had practically no credit, and for about the last six months he had not had plenty of stock, and therefore had only been able to get as little as he could for cash. In about three years he had lost over £600. It had been a gradual process of losing, never having had any profit, so that he had been unsuccessful from the commencement. The Deputy Official Receiver, in closing the meeting, said the shop in Gordon Street, which had been sold by private treaty valuation, realised £35, and of the other two sold by auction the Hedon Road shop realised about £22, and the Prince's Road shop about £6 odd. The rents of both had to be paid, so that he was afraid there was not much left for the creditors.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

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General Markets.

London, Thursday, September 24, 1903.

Compared with the condition of the Stock Exchange and the general state of trade, the markets in Drugs and Chemicals may be said to be in a good position, but the business transacted during the week has been by no means voluminous. Fluctuations have, however, been fairly numerous. Contrary to anticipation, the Bank rate has not been raised. The principal feature of the week has been the daily advance in the prices of the various brands of American Peppermint Oils. As was stated last week, the cause of this, to a great extent, has been that the crop this year was much smaller than was anticipated; whilst, on the other hand, this article has been the subject of a considerable amount of speculation. It will be remembered that it was at about this time last year that Peppermint Oil was also in an interesting condition. Owing to shortage of crop and the effects of speculation, it went up, by leaps and bounds, to a high price, and then fell almost as suddenly, as a result of the failture of one speculator, whose stock was in consequence thrown on the market. The Japan Oil, whilst being slightly dearer, has not advanced in the same degree as the American brands. Menthol is slightly steadier, and higher prices have been paid this week than those obtained at the last auctions. It seems rather curious that the two products of *Mentha piperita* should assume different attitudes; the explanation may be that the price of menthol has had to be regulated to meet the wishes of buyers. Another essential oil which has recently received attention is Oil of Cloves, which is again dearer, owing to the advance in the price of Cloves; the latter are dearer on account of a short crop, whilst a lot of bear sellers have been caught. Quinine is again slightly dearer, as a result of the increased value of bark, and Ergot of Rye is booming. There is no reliable information concerning the crop of the latter article forthcoming from Spain. These are the most interesting articles of the week. Opium and its alkaloids are in practically the same position. Cod Liver Oil is still firm at the abnormal rates, and Castor Oil is dearer.

ALUM.—Lump, £5 12s. 6d.; powder, £6 2s. 6d.

ACID CITRIC.—1s. 1d. per lb.

ACID TARTARIC.—English, on the spot, 1s. 1d. to 1s. 1½d.

ARROWROOT.—At the sales on Wednesday St. Vincent was in good supply and fair demand at easier rates. Nearly 500 barrels sold, at 1¾d. to 2⅛d. for fair to good manufacturing. 12 half-barrels Bermuda sold at 1s.

BISMUTH CARBONATE.—8s. 1d. per lb.; subnitrate, 7s. 4d.

BORAX.—Crystals, 13s. 6d. to 14s. 6d. per cwt., according to quantity; powder 15s. 6d. to 16s. 6d.

BROMIDES—Are unaltered.

CANTHARIDES.—Russian are dearer; 3s. is asked for old; the new are, according to report, exhausted.

CAPSICUMS.—Natal character sold at steady rates on Wednesday at the spice sales, bold bright red off-stalk at 45s.

CARBOLIC ACID—Steady, and business good. Crystal, 39° to 40° C., 5½d. Detached crystals, 39° to 40° C., 6¾d. Crude, 60° F., 1s. 6½d. per gallon. Liquid (95 to 98 per cent.) of pale straw colour, 1s. 2d. per gallon.

CASCARA SAGRADA—Is quiet, but the position is sound. The prices are 90s. spot and 95s. to come forward.

CASTOR OIL—Is dearer, and for Belgian firsts for Sept.-June delivery £20 10s. is now quoted, and for seconds £18 15s.

CHAMOMILES.—A rather harder tendency is noticed; the crop is smaller than last year. For the poorer qualities 35s. is quoted, and up to 50s. is asked for the finer.

CINNAMON.—8 packages sold at the spice sales, ordinary quills at 7½d., and quills at 6d.

CLOVES.—At Wednesday's auction 10 cases Penang sold privately, but no price was mentioned. Zanzibar: 35 packages sold, fair at 5¼d.

COCOANUT OIL.—Ceylon spot, £25 10s.; Cochin spot, £31.

COD LIVER OIL—Is very firm. An offer of Norwegian at 450s. was made this week, but subsequently withdrawn, and 475s. is now quoted. For Newfoundland 440s. is asked.

CODEINE—Unchanged at 10s. per ounce for the pure alkaloid.

CREAM OF TARTAR.—98 per cent. foreign powder 88s.

ERGOT OF RYE—Is booming; spot stocks appear to be cleared. Arrivals are expected next week, but these are already sold. Hamburg is also practically cleared out. No reliable information concerning the new crop is forthcoming from Spain. 1s. 6d. has been paid, and 1s. 8d. is now asked.

GINGER.—There was little demand for Cochin at Wednesday's spice sales.

GLYCERIN.—£3 8s. per cwt. for ½-ton lots.

HYDRASTIS ROOT—Is dearer at 3s. 3d.

IODIDES, IODINE, AND IODOFORM—Are unchanged.

ISINGLASS.—The sales were held on Tuesday. Slightly more than 700 packages were catalogued, which is a moderate supply. The demand was fairly good, and about half the offerings found buyers. Para: Lump, good palish at 3s. 1d., fair heavy yellow at 2s. 11d., fair reddish at 2s. 6d. to 2s. 9d. West Indian: Lump, good palish at 2s. 10d., fair to good reddish at 2s. 3d. to 2s. 7d. Bombay: Leaf, Penang character, good heavy yellowish at 4s. 3d.; Kurrachee leaf, fair to good yellowish at 3s. to 3s. 3d., fair yellow mixed reddish at 2s. 9d. to 2s. 11d. Penang: Long leaf, fair yellow and reddish at 4s. 1d., medium palish part thin at 2s. 11d. to 3s. 2d.; round leaf, good heavy palish at 4s. 7d., fair palish at 4s. 3d. to 4s. 4d., fair to good reddish at 3s. 10d. to 4s. Saigon: Long leaf, good to fine pale at 6s. 2d. to 6s. 9d., fair pale at 5s. 10d., and fair reddish at 5s. 2d., reddish part dark at 3s. 7d. to 3s. 11d. Russian: Saliensky, fine pale thin leaf at 6s. 9d. The next auctions will be held on October 20.

JAPAN PEPPERMINT OIL—Has not advanced in anything like the same proportion, but 6s. 6d. is the price quoted.

MENTHOL—Is steadier, both on the spot and for forward deliveries. 18s. 6d. is the spot price, and to arrive December 15s. c.i.f. is asked.

MERCURIALS.—Calomel, 2s. 8d.; corrosive sublimate, 2s. 4d.; red precipitate, 2s. 11d.; white precipitate, 2s. 11½d.; mercuric sulphate, 2s. 4d. per lb.

MORPHINE—Unchanged at 4s. 6d. to 4s. 8d. for the hydrochloride.

NUTMEGS—Realised better prices at Wednesday's sales.

OIL OF CLOVES.—The price has again been advanced, and 3s. has been paid.

OIL OF STAR ANISEED.—The advanced price of 4s. 3d. to 4s. 4d. is still maintained.

OLIVE OIL.—Mogador, £33.

OPIUM.—Persian is firmer, and a quantity has been sold at 10s. 6d.; 11s. is now quoted. Druggists' has been sold at 9s. 6d.

OXALIC ACID—2⅝d. to 2⅞d., delivered free London.

PALM OIL.—Lagos on the spot is quoted at £28 15s.

PEPPER.—Singapore is quiet and unchanged; spot price for fair is 6¼d. White Pepper: Quotations are unaltered.

PEPPERMINT OIL.—American is dearer, and some fairly large sales have been transacted during the week. The following are the prices now quoted:—H.G.H., 15s. 6d.; J.B.H., pure, 12s.; ditto, first premium, 12s. 6d.; Stilwell, 12s. 3d.; Stalman, 12s.

PIMENTO.—Fair is quoted at 4d.

QUICKSILVER—Unaltered at £8 7s. 6d.

QUININE.—Makers' price for the favourite German brands remains unchanged at 1s. 1d. per oz. for the sulphate. For December delivery 1s. 0½d. has been paid in the second-hand market.

SARSAPARILLA.—Mexican is reported exceedingly scarce and dearer at 5⅜d. to 6d.

SENEGA.—The nominal spot quotation is 3s. 3d.

SHELLAC.—The market remains quiet, but steady; prices remain unchanged.

SODIUM BICARBONATE.—£7 5s. per ton, landed. Howards', 45s. per cwt.

SUGAR OF MILK—Is scarce; moreover there is very little demand. 54s. is the latest quotation.

SULPHATE OF AMMONIA.—£12 12s. 6d., Beckton terms.

TURPENTINE.—The market is weak. American spot 43s.

PATENTS AND TRADE MARKS.*

New Patent Applications.

PROCESS FOR DEODORISING TAR AND MINERAL OILS.—J. Wetter (a communication from Rutsgerwerk, Aktiengesellschaft, 134, Kurfurstenstrasse, Berlin). Relates to a process for obtaining odourless oil, which will be at the same time more viscous and heavier, and less volatile and inflammable, suitable for impregnating wood, etc., for preserving it from decomposition. The process consists in adding an aldehyde or a ketone, *e.g.*, formaldehyde or acetone, to which is preferably added a minute quantity of acid or alkali, *e.g.*, hydrochloric acid, or sodium hydrate. The mixture is then heated and steam passed through it for a considerable time.

DRINKING GLASS WITH THERMOMETER.—H. G. Heinrich, Schonlinde, Bohemia. The thermometer is fixed or placed in a suitable opening or tube inside the glass, the scale of the thermometer being turned outwards. It may be fixed in the tube by cement, or may merely be plugged in. The transverse section of the tube may be such as to prevent the thermometer turning in it. There is an opening at the bottom of the tube to facilitate contact of the liquid with the thermometer bulb.

IMPROVEMENTS IN SPITTOONS.—M. Allen, 134, Islington, Liverpool. Relates to portable spittoons, which may be made of gutta-percha, india-rubber, delf, metal, or other substance, with a mouth having a trumpet-shaped rim. A second opening is fitted, having a screw stopper or other stopper for the discharge of the contents. The bottom is preferably made flat. In shape it may simulate a spirit flask, opera glass-case, telescope, or any other article, and, if desired, may be fitted with straps for suspending it from the person.

IMPROVEMENTS RELATING TO RONTGEN RAYS AND LIKE APPARATUS.—H. W. Cox, of the firm of Harry W. Cox, Limited. 9, 10, and 11, Cursitor Street, London, W.C. A compact chest, or receptacle, for storing and transporting Röntgen-ray and like apparatus, which can also be used as a support. It consists of three superposed chambers or receptacles. The lower may be open at the back and front, and may be used for the storage batteries. The other two drawers may be used for storing the rest of the apparatus. The front of the top drawer turns down and forms a convenient platform for the apparatus. At one end is formed a flush door, which, when opened, permits the bottom to slide out and form a tray for a contact breaker.

IMPROVEMENTS IN PANCHROMATIC DRY PLATES.—A. Mieth, Ph.D., 42 Kantstrasse; and A. Traube, Ph.D., 25 Runkestrasse, both in Charlottenburg, near Berlin. In sensitising photographic plates for orange light, it has been usual to employ cyanine. The disadvantage of that dye is that it is insoluble in water, although soluble in alcohol. By this invention a new class of dyes is used, containing the two bases quinoline and quinaldine, which are remarkable for their absorption spectra. Cyanine possesses one absorption band, whereas these dyes possess two, one in green and the other in the orange. By their use a dry plate can be obtained, whose sensitiveness extends from the extreme violet to the line 670 in the red.

Note.—Opposition to the grant of any of the above patents must be lodged at the Patent Office, on or before November 2, 1903.

New Trade Mark Applications.

"**BANCROB**," for antiseptic and sanitary substances or preparations included in Class 2, by P. M. Francis and Co., 1a, Rick Street, Nottingham. 256,324.

"**HANSEN'S MEVAN SALVE**," with device of heart over crossed anchor and cross ("Mevan" and combination of devices claimed as essential particulars), for a salve included in Class 2, by Charles Sophus Tharwald Hansen, 5, Cedars Mews, Cedars Road, Clapham, S.W. 256,436.

"**RED ROVER**," for chemical substances used for agricultural, horticultural, veterinary and sanitary purposes, by John Knight and Sons, Limited, Silvertown Soap Works, Victoria Docks, Essex. 256,641.

"**EMPYROFORM**" ("Empyro" disclaimed) for chemical substances prepared for use in medicine and pharmacy, by Chemische Fabrik auf Actien (vorm. E. Schering), 170, Mullerstrasse, Berlin. 254,917.

"**APPETOL**," for tonic medicines for human use, by the Valley Chemical Co., 39, Foster Street, Danbury, Conn., U.S.A. 255,219.

"**PRUNOL**," for expectorant medicines for human use, by the Lotos Chemical Co., 39, Foster Street, Danbury, Conn., U.S.A. 255,221.

"**TRIGEMIN**," for chemical substances prepared for use in medicine and pharmacy, by Farbwerke vorm. Meister Lucius and Bruning, Hoechst a/Main, Germany. 255,068.

"**CIRTAP**," for pills for human use, medicated soap for human use, by William Patrick and Frank Patrick, trading as A. Patrick, 34, Harehill's Avenue, Chapeltown Road, Leeds. 256,104.

MARETIN ("Mare" disclaimed), for a pharmaceutical product (for human use), included in Class 3, by Farbenfabriken vormals Friedrich Bayer and Company, 27, Koenigstrasse, Elberfield, Germany. 256,263.

"**ZEPTO**," for an antiseptic pencil for use in removing tartar from the teeth, being a medicated article included in Class 3, by Thomas Christy and Co., 4, 10, and 12, Old Swan Lane, Upper Thames Street, London, E.C. 256,343.

"**SPEROZMA**" ("Spero" disclaimed), for a medicinal preparation for human use, by the firm trading as Louis Hope, care of Messrs. Soames and Thompson, 12, Coleman Street, E.C. 256,443.

"**VIMBROCATION**" for all goods included in Class 3, by John Edwin Garratt, 124, Southwark Street, S.E. 256,565.

"**CALOMELOL**" ("Calomel" disclaimed), for chemical substances for use in pharmacy, by Chemische Fabrik von Heyden Aktien-Gesellschaft, 57, Leipsigerstrasse, Radebeul, near Dresden, Germany. 256,731.

"**LIVERSOL**" ("Livers" disclaimed), for a medicinal preparation for human use, by W. H. Scott and W. M. Turner, trading as W. H. Scott and Co., 4, Gallowgate, Newcastle-on-Tyne. 256,722.

"**PALLADIUM**," for an embrocation for human use, by A. E. Edwards, 4, Portman Road, Boscombe, Bournemouth, Hants. 256,751.

"**HAZELINE**" **SNOW**, for a pharmaceutical preparation ("Hazel" disclaimed), by H. S. Wellcome, trading as Burroughs, Wellcome, and Co., Snow Hill Buildings, E.C. 256,789.

PUROLA" ("Purol" disclaimed), for toilet soaps included in Class 48, by Southall Bros. and Barclay, Limited, 19, 20, and 21, Lower Priory, Birmingham. 256,746.

Note.—Opposition to any of the above trade marks must be lodged at the Patent Office, on or before October 23, 1903.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and 'Patent Notes for Inventors' free on application.

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

The Pharmacology of the Suprarenal Gland.

I must apologise to your correspondent for the delay in noticing his criticism on my note regarding the suprarenal gland. He considers that I did not duly acknowledge the source of some of my references concerning the work which had been done on the subject. I thought that I had given ample praise to the American makers for their industry in this department, and merely refrained from more specific mention lest it should savour of an advertisement for a certain firm. The "trade pamphlet" nowadays often consists of a succinct digest of all that has been said or done on a certain subject, and therefore it is impossible to ignore it in any *résumé* of such work. If from the proceedings of the British Pharmaceutical Conference were eliminated what has appeared in trade pamphlets, the residue might be original, but it would be of little interest or value. To collect, combine, amplify and animate what has appeared elsewhere on the subjects of which one proposes to elucidate some special point is, I submit, useful, but if the prevailing opinion is otherwise, it is a simple matter to omit such references from the 'Year-Book of Pharmacy.'

Dublin, September 17, 1903. J. C. McWalter.

Medicine Stamp Duty.

The notice in last week's issue of the *Pharmaceutical Journal*, headed "Perverted Ingenuity," appears as if it were to be an extinguisher of all further complaints on the vexed question of the "Medicine Stamp Duty," and possibly written by one who has not felt where the shoe pinches, like many a chemist throughout Great Britain. We read frequently of "the present position" of the trade, but it is rather the constant transformation scenes, as reflected from Somerset House, that trouble us most. It does seem a unique application of an Act of Parliament that, like a camera obscura, it can be turned in so many directions, bringing within its sphere such variety of moods and tenses, phrases or facts, till it has become perfectly bewildering—and all this by the Board of Inland Revenue, composed of irresponsible and unknown personages, who are supposed to possess the power of affirming, modifying, and applying an Act with an elasticity so different from other British laws, so that the business of a fully qualified chemist has become of recent years oppressed beyond measure. It would be interesting if we had a complete copy of the Act published in our Journal, so that we might read it for ourselves, and possibly have information asked for by some of our members of Parliament regarding it. The other question arising out of our present position is : Can a condition which has existed long enough unchallenged to have come under the "Law of Prescription" be upset by the above Board? Undoubtedly, we have reached a period when the "Medicine Stamp Duty" Act should be reconstructed on clear and definite lines. Then there would be no occasion for holding over us a threat of unexhausted powers. We often read and hear about "Justice to Ireland," but why is there no such law there; and if it can be done without in Ireland, why not in Great Britain also? Till then moderation should mark the action of any Board under Government, or we may be forced to do with the medicine stamp as was done with the newspaper stamp, within the memory of many living. That became oppressive, and it was simply set aside by printing newspapers without a stamp, not to sell, but to be given away, to anyone who paid one penny for a straw. The cry was, "Who'll buy my straw for a penny, and I'll give ye a newspaper 'for nothing.'" I see no difficulty in chemists printing and publishing a small book, giving an account of their wares, and charging one shilling for it; then give the buyer his box of antibilious pills "for nothing." To what better purpose could our Council devote its treasured thousands than, by a bold, masterly stroke, coming to the aid of the members of our Society at this juncture? Let them step out beyond former limits and get the highest legal advice how to act on this subject, then formulate such action as will lead to a better condition than what is and has been far too long.

Edinburgh, September 21, 1903. James Mackenzie.

The Pharmaceutical Society's Subscriptions.

Letters have appeared in the correspondence columns of the *Pharmaceutical Journal* in respect of the subscriptions to the Society, and in which complaint is made that when joining the Society after the year is old, the full annual subscription is demanded. Whilst sympathising with those who are in this predicament, I would suggest that those who become members late in the year should be charged a reduced fee, but accompanied with the following year's subscription. Thus, say a gentleman wishes to join in June, then let him pay only 10s. 6d. for the half-year, but also send in a guinea for the following year, thus guaranteeing to continue a member for at least a year following the termination of his half-year's subscription. He would not lose anything this way, and the Society would probably gain many who hesitate at the idea of losing the value of half a guinea.

London, September 18, 1903. C. H. Fentiman.

The Proposed Guild of Assistants.

I would earnestly commend Mr. Glass's letter in this week's issue to the notice of chemists generally, and think that the outdoor system might be profitably discussed by the local associations scattered up and down the kingdom. Although Mr. Pickering has my sympathy, it is hardly to be expected that assistants will bind themselves, to receive nothing in return. I have a fairly extensive acquaintance with qualified assistants, and am fairly convinced that they do not succumb to the stores for the sake of the extra salary; it is the outdoor system that attracts. It is also a mistake to expect to find the lame ducks of pharmacy behind the stores' counter. Mr. Boot's assistant has had good experience in West-End pharmacy, I'll warrant, and would still be one of the elect but for the indoor system. I sincerely hope that this matter will be taken up seriously. If chemists really wish to hamper the companies, they had better give this matter their earnest consideration; it is the only way by which they can possibly hope to check unqualified trading. I am quite aware that this letter may bring forth arguments as to the utter futility of the scheme, the necessity of dancing constant attendance on the British public, medical profession, etc, etc. But I appeal to the broader-minded portion of the pharmaceutical community to give the outdoor system a trial, and once adopted they will never discontinue it; the few extra shillings per week that they will have to pay out will be amply repaid by better labour. I am not prejudiced; I believe pharmacists as a body are gentlemen, and behave as such towards their assistants, but the times are altering, and chemists, if they wish to hold their own, should "move with the times."

London, September 20, 1903. E. C. Adams.

Actinic Bottles.

Mr. Baldock's letter on the misuse of the phrase "actinic glass" raises one or two interesting points. While I agree with him in taking exception to the term "actinic green glass," I am unable to endorse Mr. Baldock's contention that "non-actinic" is preferable. Surely neither adjective can strictly be applied to glass, the quality being an attribute of rays only. If, however, that point of view be regarded as pedantic, and something less than strict accuracy be permitted, I would urge that there is, in trade custom, sufficient sanction for the use of the phrase in the sense in which Messrs. Maws and other firms employ it—that is, that glass which absorbs the actinic rays should be called "actinic glass."

London, September 23, 1903. W. Roberts.

A Dispensing Difficulty.

I think we have heard more than enough upon the subject of doctors dispensing, carelessness in doctors' dispensaries, etc. The borderland of the medical profession and the chemist's business of necessity overlap. If some doctors dispense, do not nearly all chemists prescribe? Surely this borderland is ground to avoid, not to be constantly executing a war dance upon! Supposing that there are more accidents in doctors' dispensaries than in chemists' shops, it is very unbecoming for the chemist to call attention to it. The public and their legislators are quite alert enough to scent a source of danger, and anything an interested party says provokes naturally a well-deserved sneer, and does the cause more harm than good. I cannot help thinking that too frequent allusion to this subject tends to destroy good feeling between chemists and their best patrons, for, notwithstanding the silly, ineffective craving of a few chemists for a "professional status," pharmacy is still—and always will be in this country—a trade subservient to its medical and non-medical customers. What wisdom is there, then, in its quarrelling with the former of these.

Brighton, September 22, 1903. "Cynicus" (224/4).

A Rumour Denied.

We have been consulted by our clients, Messrs. John Phillips and Sons, of York Road, City Road, E.C., wholesale sponge merchants, with reference to certain statements which have been circulated in the trade as to their having discontinued their business. These statements, we are instructed, have been made by competitors, and have not the slightest foundation. Our clients are, of course, reluctant to litigate, but if such statements be repeated they will be compelled to institute proceedings against the persons who are responsible. We shall be obliged if you will insert this in your next issue.

London, September 23, 1903. Harris, Chetham and Co.

MARRIAGES.

Pratt—Dance.—On September 21, at St. Mary's Church, Tenby, by the Rev. J. J. Davies, R. R. Pratt, M.P.S., chemist, Canterbury Road, Kilburn, to Louise J. Dance, daughter of Mr. Abel Dance, The Crofts, Tenby, S. Wales.

Snow—Rigg.—On September 17, at Brixton Hill Wesleyan Church, by the Rev. J. H. Rigg, D.D. (uncle of the bride), assisted by the Rev. J. Martyn Lobb, Leonard Hardy Snow, chemist and druggist, Cheadle, Staffs., to Julia F. C. Rigg.

PHOTOGRAPHIC NOTES.

BY A PHARMACIST-PHOTOGRAPHER.

Coxin.

I have recently received from Messrs. W. Butcher and Sons particulars of a preparation, for which they are the English agents, which has been introduced under the name of "Coxin." This appears to consist of a solution of a dye of a non-actinic colour, in which exposed dry plates may be immersed for a few minutes, and then are so far protected by the staining that they can be developed in ordinary white light, thus doing away with the necessity for a dark-room. This method of developing seems to have become very popular in Germany, where it originated, and the sale of "Coxin" is reported to have attained considerable proportions there. From the instructions for use sent out with the solution it would appear that great care is necessary to avoid any fogging of the plate during the manipulations; in fact, I should much doubt the advisability of using it with any other than ordinary dry plates. If isochromatised plates be used I should certainly anticipate failure. Of course, the plate must be efficiently protected from actinic light until it has been well soaked in the "Coxin," and must therefore be transferred from the dark slide or camera either in the dark or in the dark-room. This may be done with care under a light-tight focussing cloth; special changing bags are also supplied for the purpose. The dishes employed for the "Coxin" solution and the developer should be dark in colour—those made of papier-maché are recommended. The plate should remain in the dye bath, which must be at least an inch deep in the dish, for two minutes; it should also be protected from light during its transference from this to the developer, and during development it may not be lifted from the dish in order to judge of the progress of development, which must be estimated either by the time process, or by looking at the plate as it lies in the developing solution. There will doubtless be a considerable demand for "Coxin," as, with the exercise of care and intelligence, it must prove a great convenience to those who are unprovided with a suitable or commodious dark-room; but I am inclined to think the method is attended with too much risk to commend it to more experienced photographers, especially when engaged in the production of negatives likely to prove of value. A special appliance for the development of roll films with the aid of "Coxin" is supplied.

Unol.

From a circular recently received from Messrs. C. Zimmerman and Co., I find that Rodinol is now being supplied in solid form, under the above name, conveniently packed in glass tubes, each being sufficient for 3½ fluid ounces of developer. I have found Rodinol an excellent developer in the production of the triple negatives for trichromatic work; but if not used up in a comparatively short time, the concentrated solution, after being opened, has a tendency to darken by absorption of oxygen, so that its developing power must become in some degree impaired. This imperfection, I am glad to find, will be overcome by the new method of packing.

Gaslight Papers.

'The Barnet Photographic Record' for September contains an instructive article for amateurs on "Gaslight Papers" and a few notes on the production of lantern slides.

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Spray Fluid (W. W.—95/30).—Dissolve potassium sulphide, 1 oz., in two gallons of water, and use immediately.

Vandyke Brown (W. E. M.—96/4).—It is a pigment containing iron, and is usually prepared by calcining yellow ochres.

Coxin (R. E. G.—95/24.)—You will find the information you require in the Photographic Notes published in this week's *P.J.*

Tincture of Myrrh and Borax (W. W.—95/28).—Tincture of myrrh, 8 fl. oz.; tincture of krameria, 1 fl. oz.; eau de Cologne, 1 fl. oz.; glycerin of borax, 2 fl. oz.

Rain Water (A. F. C.—95/34).—The addition of a small quantity of an aqueous solution of potassium permanganate will probably have the desired effect.

Ozonic Ether (A. D. W.—96/9).—It is a solution of hydrogen peroxide (30 vols.) in ether mixed with alcohol. We do not know what ozonised tinctures are.

Liniment (W. H.—96/6).—You should be able to produce something resembling it by mixing small quantities of the oils of eucalyptus and origanum with ordinary turpentine.

Payment of Witnesses (M. A. F.—95/32).—The amount payable depends upon the circumstances of the case. A pharmacist should always claim to be regarded as a professional man.

Viavi (D. R. R.—96/14).—See the *P.J.* of May 25, 1901. The business has been exposed repeatedly in the pages of *Truth*, and you should dissuade your friend from wasting more money, if possible.

Cheap White Liniment (W. W.—95/29).—Oil of turpentine, 3 fl. oz.; eggs, 2; vinegar, *q.s.* to make 1 pint. Mix the turpentine with the whites and yolks of the eggs, then add the vinegar gradually and shake well.

Prescription for Hay Fever (W. E. M.—96/5).—We are not familiar with the prescription, but should imagine the whole of the ingredients are specified therein. The price charged should be in accordance with your usual practice.

Compendium (C. R. S.—223/28).—It is impossible to answer your questions at present. Meanwhile, your formulæ are being included in the *P.J.* formulary, the first instalment of which appears in this week's Inset.

Medicated Wine (J. C. H.).—(1) It must contain at least one grain of quinine sulphate in each fluid ounce, and be no longer fit to be used as a beverage. (2) The name "Gripe Water" will incur liability; "Infants' Carminative" will not.

Trinitrin Tablets (G. C.—96/11).—There does not appear to be any sufficient reason why you should refuse to supply them without the production of a medical order. It is a simple matter to give a word of caution to the customer at the time of sale.

Disclosure on Label (J. H.—96/13).—The Board of Inland Revenue requires that such information shall be given on the label as will identify the particular formula, but it is a question whether a more general indication would not suffice, in strict law.

Optical Examination (F. K.—96/12).—It is impossible for us to say whether it is worth your while to study for the examination. You will find much information on the subject in the *P.J.* of March 28 last, Optical Supplement. We are unable to recommend the book you mention.

Andrew Jergens Co. (W. S. G.—95/14).—A correspondent, whom we thank, writes to say that the address you require is 48, Great Sutton Street, Goswell Road, E.C. Another correspondent says that the agents for the firm's goods are the American Toilet Co., 56 and 57, Singer Street, Tabernacle Street, London, E.C.

Children's Powders (S. P.—96/2).—(1) If you affix stamps to the packages, you can recommend the powders as freely as you like. They must be affixed by the proprietor, compounder, or first vendor before the powders are sold or delivered out of custody or possession for sale, either wholesale or retail. (2) It will be sufficient to quote, after the name of the article, the name of the book, or the initial letter or letters thereof, with a reference number.

Information Wanted.

Bottles for Sterilised Milk (B. L. B.—223/31).—Where obtainable wholesale?

DEATHS.

Cooper.—On September 14, Dr. Robert Thomas Cooper, of Wimpole Street, London, W. Aged 59. Dr. Cooper was the author of many works and articles bearing on homœopathic therapeutics, and on diseases of the ear. He was also the author of a work dealing with cancer, and had devoted much attention to a study of the disease. His knowledge of plant-therapeutics is stated to have been unique, one of his many interests being forestry.

Lloyd.—On September 10, John Walters Lloyd, Chemist and Druggist, Swansea. Aged 60. Mr. Lloyd had been in business in Oxford Street, Swansea, for many years, and was one of the oldest and most highly respected tradesmen in the town. He was a churchwarden of the St. Mary's Parish Church, and a member of the Indefatigable Lodge of Freemasons No. 237, Swansea.

Proctor.—On September 22, at Melrose House, Westbury-on-Trym, near Bristol, Barnard Simpson Proctor, Pharmaceutical Chemist, F.I.C. (see p. 451). Aged 74.

Calendar for the Week (Sept. 27—Oct. 3, 1903).

Days of		Events of the Week.	Sun	
M	W		Rises	Sets.
27	**S**	***Sixteenth Sunday after Trinity.***	5.54	5.48
26	M	☽ First Quarter, 1.9 p.m. Hartlepools and District Chemists' Association, at 8.30 p.m.	5.55	5.47
29	Tu	Michaelmas Day.	5.57	5.45
30	W	Methylated Spirit Licence expires	5.58	5.42
1	Th	Pharmaceutical Society of Great Britain, 17, Bloomsbury Square, London, at 3 p.m. Inaugural Sessional Address; Presentation of the Hanbury Gold Medal; Unveiling the "Martindale" Memorial. Great Yarmouth Pharmaceutical Association, at 8 p.m.	6.0	5.40
2	F		6.2	5.38
3	S	Benevolent Fund Subscriptions should be paid this month.	6.3	5.35

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Bell, Burrell, Clarke, Corfe, Crook, Doe, Drury, Eady, Elstob, Farr, Fielding, Finlayson, Foster, Gibson, Gurrin, Hallaway, Hardman, Harrison, Herbert, Hindle, Horsfield, Idris, Jenkins, Jolliffe, Keen, Kirby, Lewis, Loveridge, Maben, Metcalfe, Metherell, Morris, Neal, Palmer, Pattinson, Pigot, Pratt, Proctor, Rowlands, Sage, Sampson, Scott, Snow, Stedman, Stones Timmins, Umney, Walsham, Watson, Williams, Winstanley.

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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, October 1, 1903.

A further Instalment of Recipes is published in the Journal Inset this week.

American Wholesale Druggists have met the manufacturers at a joint convention. It was stated that the annual sales of proprietary medicines in the United States amounts to over fifty million dollars.

Only Five Candidates—of whom four were successful—presented themselves for the recent Major Examination held in London. The questions set at the examination are printed in this week's Journal.

Particulars of the various Local Associations throughout the country are given in this issue. The number of these associations has increased from about seventy to eighty during the past twelve months.

Meetings of Chemists have been held at Plymouth, Exeter, West Hartlepool, and Greenock. Interesting discussions took place at each of these centres. The chemists of Falkirk have also met together this week.

In the Course of Some "Reflections on Free Trade," Mr. Thomas Tyrer deplores the difficulties caused by the taxation of alcohol for manufacturing purposes. Mr. Tyrer will have more to say on Free Trade at a subsequent date.

The Barnsley and District Chemists' Association has passed a resolution expressing thanks to the Pharmaceutical Council for deciding to publish a Compendium of Medicines. The members also discussed the general aspects of the medicine-stamp difficulty.

The Secretary of the Grocers' Federation, who was this week interviewed by a Journal representative, is of opinion that if the Board of Inland Revenue insists on payment of duty upon certain medicines when sold by grocers, an attempt will be made to obtain fresh legislation.

Vol. 71. No. 3389. (4th Series, Vol. 17. No. 1736.)

In His Address to the Students of the School of Pharmacy, Dr. Joseph W. Swan paid a high tribute to the Pharmaceutical Society when he said that the educational progress of pharmacy had been a happy exception to the rule of our general educational want of progress.

The Chief Events at the re-opening of the School of Pharmacy were Dr. Swan's address; the presentation of the Hanbury medal to Comte de Montholon, an Attaché of the French Embassy, who was present on behalf of M. Eugène Collin; the unveiling of the Martindale bust, and the presentation to the Council of the die for the Martindale medal.

The General Purposes Committee of the London Chemists' Association met on Wednesday afternoon and, among other business, accepted with regret the resignation of Mr. R. H. Jones, who has held the office of Hon. Sec. with conspicuous ability since the formation of the Association. As a mark of esteem Mr. Jones was elected a vice-president of the Association. Mr. R. B. Betty was elected Secretary.

Business on Mincing Lane shows little or no improvement. Both American and Japan peppermint oil have continued to advance; Menthol is also dearer. Some fairly large sales of Quinine have been made at a fraction below the figure of last week. Fuller and later information concerning the general markets and to-day's drug auctions will be found in the market article.

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THE PHARMACEUTICAL JOURNAL FORMULARY.

If the chorus of approval which has greeted the publication of the first section of the 'Pharmaceutical Journal Formulary' be any measure of the need which has been felt for such a work, the completed book ought to prove an extremely valuable aid to chemists and druggists and a useful addition to the pharmaceutical library. Since the issue of last week's Journal large numbers of formulæ for compounded medicines described by ailment-names have been received by every post, and there is good reason to believe that the completed collection will be the most comprehensive and important of its kind ever published. To prevent possible misunderstanding the Editor takes this opportunity of again disclaiming any responsibility for the recipes published, all that he has done being to register them as a convenience to chemists and druggists. Criticisms and suggestions on various points have been received, some correspondents taking exception to the fact that the formulæ are not printed in Latin, while others have expressed preference for the use upon labels of some other word than "Recipes" as a means of indicating where the formulæ of the preparations are published. With regard to the question of the language employed, it must suffice to state that it received the fullest consideration, and that the decision to take the formulæ of the British Pharmacopœia as models was largely influenced by the feeling that it is better to employ good English than spurious Latin. The argument that the use of the vernacular may tend to the disadvantage of chemists and druggists, by rendering the formulæ intelligible to lay readers, has but little force, in view of the little likelihood of such persons obtaining access to the work. Moreover, chemists have it in their power to overcome any such disadvantage, by exercising a proper discretion when, if ever, customers ask them to dispense medicines from formulæ published in the book.

The other point to which exception has been taken by correspondents has seemed more worthy of serious attention, especially in view of the fact that the Board of Inland Revenue, after devoting special consideration to the subject, has expressed a doubt as to the sufficiency and expediency of quoting after the name of a preparation the word "Recipes" only or its initial letter, with the registered number of the particular formula. The Board is prepared to regard the 'Pharmaceutical Journal Formulary' as a well-known book of reference, and to accept publication therein of a recipe for a known, admitted, and approved remedy as a satisfactory method of disclosure; in view, however, of the fact that the use of a single word or its initial letter may lend itself to evasion of the Medicine Stamp Duty Acts, the Board has suggested that labels for ailment-named remedies—the formulæ of which are published in the book now in course of publication—should bear the words "Pharmaceutical Journal Recipes." It would be unreasonable to disagree with the Board's suggestion, since suitable contractions of the words mentioned, or even the initial letters, "P.J.R." may be used in conjunction with the registered number and the name of the article. Accordingly it is now suggested that if fresh labels are being ordered for any particular preparation registered in the 'P.J. Formulary,' the simplest plan will be to print the name, etc., as follows:—

INFLUENZA MIXTURE.
(P.J.R. 119.)
JOHN SMITH,
Chemist,
Blanktown.

ANTIBILIOUS PILLS
(P.J.R. 35.)
JOHN SMITH,
Chemist,
BLANKTOWN.

An alternative method of disclosure will be to make use a small label such as one of the following:—

RECIPE No.......
Pharm. Journ. Formulary

RECIPE
No.......
Pharm. J. Form.

R.
No
P.J.F.

RECIPE
No.......
Pharmaceutical
Journal Formulary

The use of one of these labels, in addition to the ordinary label, will meet the requirements of the Board of Inland Revenue and, in most cases, save the necessity of destroying labels already in use. Another plan suggested is to employ a suitable indiarubber stamp to print the necessary words or letters upon existing labels, and then add the registered number in writing. In conclusion, readers are warned that publication in the 'P.J. Formulary' of recipes for remedies popularly known by the names of the original prescribers or introducers—such as "Dr. Gregory's Pills" or "Tonic Syrup (Easton)"—will not be regarded by the Board of Inland Revenue as removing all claim to Medicine Stamp Duty, if those names appear upon the labels for the preparations. As in the case of "Godfrey's Cordial," the preparations may be supplied when asked for under their popular names, but the use of labels bearing those names may render the medicines liable to duty. At the same time we are in a position to state that the Board now has under consideration an arrangement whereby chemists and druggists will probably be enabled, under certain conditions, to sell such preparations without incurring liability to stamp duty, provided the articles have not been rendered liable by their introducers.

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OF ORGANISATION.

It is not unreasonable to suppose that, if Bacon were alive to-day, he would pen an additional essay "Of Pharmacy" or "Of Pharmacists." Possibly the great essayist's experience of things legal, political, social, and medical might have enabled him to do justice to a state of affairs such as that existing in pharmaceutical politics to-day. But while it is neither easy nor profitable to speculate on the view which this or that philosopher of the past would have taken on the questions of company pharmacy or of the protection of titles, of one thing it is possible to speak confidently. It is very certain that most students of economics in every age would agree that for the members of a trade or profession to form local and national organisations for the advancement of their calling is one of the best steps possible to achieve that end. In politics, more than in anything else, perhaps, unity is strength. It is due in the main to a happy realisation of the everlasting truth of that axiom that pharmacy has become one of the best organised callings in Great Britain. Partly, perhaps, it is an instance of prospering in adversity; but, whatever the cause, one fact stands out. Through the Pharmaceutical Society, with its membership of close on six thousand, through the local associations, now nearly eighty in number, and through the Federation of those associations, pharmacists are now well prepared for political struggles.

Political power is not, however, the be-all and end-all, and most of the associations mentioned at page 502 *et seq.* of this week's Journal have realised the fact. The encouragement of study among the younger men has formed part of the programme of more than one such body in the past, and the members of the Plymouth, Devonport and Stonehouse Association in particular must be gratified at the success which has attended their efforts in this direction (see p. 488). Additions to scientific pharmacy, improved conditions of trade, and pleasant social gatherings, have all to be placed to the debit side of the account which the pharmacist keeps with his local association. Not only so, but the mere fact of discussion itself has advantages. More than one chemist has learnt through his chemists' association to speak in public and been encouraged to take a part in municipal or political life. The mere taking part in a discussion leads men to study the subjects discussed, and thus find, maybe, that they have long been accepting as matters of fact what are really only expressions of opinion. We have lately seen—and that curiously enough among the successors of the Tory party of other days—a revolt against accepting without inquiry the yoke of fixed custom which has grown up from the doctrines of Cobden. An interesting contribution to the discussion of this subject, by Mr. Thomas Tyrer, will be found in this week's issue, at page 485. In pharmaceutical circles, however, nothing which can be discussed is sacrosanct; the yoke of fixed custom, when irksome, is borne under active protest, which is by no means without use in lightening the weight. Discussion, again, begets tolerance, and "speaking maketh a ready man." The chemist of to-day is none the worse as a man of business for possessing the attributes of tolerance and readiness.

As to the lines on which discussion is likely to proceed during the winter session, it is safe to assume that the medicine stamp duty will form the chief topic of consideration. Mr. J. F. Tocher's scheme of territorial representation is likely to figure on many agenda papers, while the P.A.T.A. may be expected to remain before the members of local associations as much as ever. Criticism of the Council of the Pharmaceutical Society will doubtless be indulged in by some of those who are of necessity without knowledge of all the circumstances which influence the decisions of that body. The reproach that the Council conducts its proceedings with an excess of secrecy is now rarely heard, though it is sometimes necessary that the Council, when conducting delicate negotiations, should withhold its cards from the public gaze, and chemists in general would do well to recognise the fact. With that condition, no possible harm can be done by members of local associations meeting together, stating their opinions, and loyally attempting to assist the Society. While considering the arrangements for the Compendium to be issued with the authority of the Council, much valuable help, which is gratefully acknowledged, has been given by secretaries of local associations, who in their turn have on many occasions received advice and assistance from headquarters. Practical reciprocity of this description must have a good effect, and augurs excellently well for the future of pharmacy.

PHARMACEUTICAL TRAINING FOR MEDICAL MEN.

If every medical practitioner had a sound and practical knowledge of pharmacy, the dispensing chemist would be relieved of no little responsibility and trouble. Nor would the benefit be confined to the dispenser, for the patient might expect more palatable medicine and more efficient treatment than he sometimes receives under existing conditions. There is not, however, any reason to think that the position of the pharmacist would be lowered contemporaneously with the decreased necessity of guarding patients from the dangers of ignorant eccentricities in prescribing, and indeed any such result would be more than compensated for by the simultaneous reduction in the number of prescriptions for the packed nostrums so dear to the heart of many practitioners to-day. For some time the organ of the British Medical Association has been urging the necessity of the education of the medical student in pharmacy and prescribing, but so far as can be judged from the inaction of those who direct medical education in this country, our respected contemporary seems to have been preaching to deaf ears. If, however, there be any satisfaction to the *British Medical Journal* in the knowledge that it has the support and sympathy of those who utter the same cry in the neighbouring wilderness, it is welcome thereto. It has even been found that some of the recipes submitted for inclusion in the *P.J.* Formulary indicate that the pharmacy of the pharmacist is neither as scientific, "elegant," nor intelligent as it should be. The fatuousness of many modern prescriptions needs no lengthy diatribe to ensure appreciation by the majority of pharmacists, but as the views of medical writers on the subject have an interest of their own for chemists and druggists, no apology need be given for quoting a part of the latest utterance of the medical organ above referred to:—"The existing system of medical education is sadly defective in the training it supplies on the important matter of drug administration. A short course of practical pharmacy forms, it is true, part of the curriculum, but in how many schools is this class conducted with anything like the thoroughness that characterises tuition in any other subject in which an examination must be passed before a qualification or degree can be obtained? A mere smattering of knowledge is the most that can be gained, under the present regulations, in the pharmacy class, and when the wards and out-patient rooms are reached, the routine plan of hospital formulæ is all that remains for the student to depend upon for the mastery of a subject which, in his future dealings with the sick, demands more practical knowledge than any of the other ''ologies' which have engaged his attention during the five years of his training."

A BOOK OF HERBS.

Medicine-men are wont in these days to plume themselves on the advances in pharmaceutical knowledge which have taken place since the time when Tusser and John Gerarde wrote of husbandry and herbs. In the main, doubtless, the feeling of self-satisfaction is justified, and humanity as a whole is certainly benefited by the absence from the British Pharmacopœia of 1898 of the many and strange concoctions, animal as well as vegetable, which found a place in its prototypes of the eighteenth century. Something of the picturesque has doubtless been lost, and with it, probably, little of more substantial value, by the disuse of such herbs as Herb-Patience and Angelica, of Langdebeefe and Good King Henry. Yet with all this it may still be that some herbs, in the medicinal virtue of which our forefathers trusted, may have fallen on stony ground without a thorough investigation, in the light of modern knowledge and with the aid of modern methods, into their possible active constituents.

These reflections have been prompted to some extent by the perusal of 'The Book of Herbs' (John Lane, 2s. 6d.), a newly-published work from the fluent pen of Lady Rosalind Northcote, written for the general public and the gardener. 'The Book of Herbs' has a particular interest to pharmacists as the legitimate successors to the honest herbalists of former days. Not the least interesting are the very numerous quotations from poets and poetasters of most countries and all ages. Spenser and Tennyson, William Langland (the author of 'Piers the Plowman'), and Mr. W. B. Yeats are a few of those whose muse has been requisitioned to add to the attractiveness of a production which reflects very high credit on the artistic sense alike of publisher and authoress. Lady Rosalind Northcote has thoroughly searched the whole field of English literature bearing on herbal remedies, and has produced as a result a book which, while interesting to the general reader, contains not a little information of real value to the owner of a physic-garden. A number of interesting details are given of the medicinal, culinary, and ornamental uses, ancient and modern, of the principal British herbs, while notes on the growing of such plants are also included. Two amusing chapters trace the connection of Herbs and Magic, and of Herbs and Beasts respectively.

Approached from a purely scientific standpoint, Lady Rosalind Northcote's work is not above criticism. In addition to certain omissions which the pharmacognosist might lament, the language—as in the occasional use of the words "seeds" and "fruits" without discrimination—is not throughout unexceptionable. But the scientific standpoint is not, as it seems to us, the standpoint proper to a survey of a book of this kind. Recently a writer in one of the monthly reviews complained that Thackeray's men and women were not fair average samples of the classes whom he claimed to represent. True enough; but Thackeray, being not a historian but a satirist, picked out rightly enough the less pleasing and more contemptible types. So, the scientist who keenly scans the pages of 'The Book of Herbs' may be reminded that absolute scientific precision is not the chief purpose of the writer. The illustrations to the book, all beautifully produced, include some "Old Stills at Mr. Hooper's, Covent Garden," well known as one of the oldest pharmacies in London, and a number of "Plantations at Messrs. Stafford Allen and Sons, Ampthill."

THE GROCERS' GRIEVANCE.

In the name of the "grocery trade" an agitation is on foot against the action of the administrators of the Medicine Stamp Duty Acts, and it is well to know with whom one has to deal in the matter. The question is whether the grocers really have a grievance. If by the term grocer one means those tradesmen who for generations back have claimed the right—and properly so—to rank as substantial middle-class citizens, and numbers of whom have become ornaments to their municipalities, one can answer, No, the grocers have no grievance. If, on the other hand, one recognises those herds of miscellaneous hucksters—the term is not used disrespectfully—whose shops are emporia for little bits of everything; if these hitherto unclassified dealers, who until now have not been recognised either as fish, flesh, fowl, or good red herring among tradesmen, are to rank as grocers, then the grocers have a grievance. It is certain it is not the grocers, properly so-called, and it is doubtful whether even the petty hucksters are at the root of the agitation. As a matter of fact, it is hardly doubtful—for it is almost certain that the real agitators are a few manufacturers, who supply a miscellany of penny remedies (save the mark!) to small traders. The card with the little pill-boxes gummed on to it is familiar to many, and it is the manufacturers of these abominations who claim that the retailers, through whom they foist their wares upon the public, should be on a level with the qualified chemist. The grocer proper knows not of such things, and yet it is in his name that the Board of Inland Revenue is being asked to ignore the provisions of an Act of Parliament. In making this assertion it is not desired to question the statement made to a Journal interviewer by the Secretary of the Grocers' Federation, but surely Mr. Giles has mistaken the voice of Jacob for that of Esau, since it is the manufacturer who is raising the hue and cry. The public inconvenience has been dwelt upon by Mr. Giles, who foresees the poor benighted villager in 1904 tramping six miles through the sludge and the snow to purchase his pennyworth of cough-drops. A tragic picture indeed! But what are these so-called "cough-drops," hawked about the streets of the large towns, and sold by the village hucksters? And this question—which it is, perhaps, best not to answer, for in most cases these "drops" are nothing more nor less than a fraud on the public—leads to consideration of other traders who have recently made a pilgrimage to Somerset House. The confectioners have from time immemorial been in the habit of selling, under the euphemistic title of "cough drops," various kinds of harmless sweetmeats flavoured with aniseed. The effect of these concoctions on the cough is practically *nil;* but a great danger lurks in their distribution, for the public, accustomed to swallow these abominations until their stomachs can stand no more, get the idea that they can partake of the genuine cough lozenge, obtained at the chemist's, to the same unlimited extent. The possible consequences of this should be obvious, and, apart from stamp duty considerations, the sale of these fraudulent confections should be prohibited if possible. It is strange how deliriously anxious about the public convenience some traders become when they think their pocket is going to be touched. If they are really solicitous for the public welfare, their proper course is clear; let them not wait until the end of the year—let them destroy their rubbish at once.

THE OPENING OF THE SESSION.

The unavoidable and regretted absence of M. Eugène Collin, Hanbury Medallist, robbed the proceedings at Bloomsbury Square on Thursday afternoon of some of the interest which would otherwise have been taken in the ceremony. The Pharmaceutical Society was honoured, however, by the presence of an attaché from the French Embassy, who attended to receive the medal on behalf of his distinguished compatriot. Dr. Swan's address provided material for consideration, and was somewhat shorter than most of the inaugural addresses of previous sessions. Though it is now a very long time since Dr. Swan was directly connected with pharmacy, his interest in the calling has evidently been maintained throughout. Particular value attached to Dr. Swan's remarks on the existing state of general education in Great Britain, while his advice to students was thoroughly sound. The proceedings in the lecture-theatre were further shortened by reason of the new arrangement whereby the School of Pharmacy prizes are presented at a special meeting at the end of the Session. As will be seen from the report in another column, Thursday's meeting concluded with the formal ceremony of unveiling, in the Examination Hall, the memorial bust of that distinguished ex-President of the Pharmaceutical Society—William Martindale. Illustrations of the bust, and also of the die for the Martindale Memorial Medal, are reproduced in this issue of the Journal.

REMINISCENCES AND REFLECTIONS.*

BY JOSEPH WILSON SWAN, M.A., D.SC., F.R.S.

Introductory.

I owe the pleasure of meeting you here to-day, on the occasion of the opening of a new session of the School, to the fact that I am an ancient member of the craft, and to the presumption, well founded, that though no longer in close touch with it, I am in as hearty sympathy as ever with all that makes for its efficiency and its welfare.

It is not a quite unalloyed pleasure for me to look back to the days of my first contact with pharmacy, yet, in the circumstances in which I now find myself, confronted with so many reminders, it is almost impossible to help falling into a reminiscent vein, and to refrain from contrasting the condition of things in relation to the study of pharmacy then and now, and it is equally difficult to pass over the wide interval as if it were a blank.

Sixty Years Ago.

Times have vastly changed since I first "smelt powder"—powder, I mean, of aloes, of gamboge, of scammony, and other nauseous drugs in process of pulverisation and sifting. You will fix the date I refer to when I tell you that I had been snuffing up, inhaling, and swallowing considerable quantities of these useful, but unpleasant, substances for eight months before the Pharmaceutical Society obtained its Charter.

Sixty years ago there was little or nothing of external stimulus to draw the chemist's apprentice to scientific study or educational improvement of any kind. The routine duties I had to perform in connection with the business I was apprenticed to learn (nominally that of a chemist), were far removed from the region of science. It was uphill work to reach that refined atmosphere, but my experience of the difficulties in the way of learning in a scientific manner what was euphemistically described in my indenture as an "art and mystery" was that of thousands who entered the ranks of pharmacy at that time.

Obstacles to Progress.

There were no facilities such as you possess for learning what is necessary to be learnt to fit you for an efficient discharge of the duties of an onerous business. In the absence of guidance, spontaneous attempts to learn were apt to take a wrong direction, and in any case were beset with every sort of hindrance. If, for example, it happened that the apprentice's curiosity was aroused, as mine was, to discover the properties, physiological and other, of nitrous oxide, and he attempted to make experimental observations on the subject, he was met on the threshold of his inquiry by difficulties the modern student would neither encounter nor imagine. There was first the difficulty of material for generating the gas, and then there was the further difficulty of apparatus. Nitrate of ammonia was not a chemical commonly sold by the chemist of those days, neither was the most elementary form of gas apparatus obtainable in a country town. In my own case the first hindrance was removed by an incursion into the field of chemical manipulation and the carrying out for the first time, and in make-shift vessels, of a chemical process involving decomposition, evaporation, and crystallisation. The second obstacle was surmounted by that helpful child of necessity—invention. It brought me into appreciative acquaintance with the merits of the Florence oil flask as an excellent substitute for the more orthodox retort, and also with the virtues of a red hot poker as a means of transforming a Winchester quart bottle into a serviceable gas receiver.

The Pharmaceutical Society and Its Journal.

The founding of the Pharmaceutical Society made a great difference. I well remember the first issue of the *Pharmaceutical Journal*, and how welcome was the appearance of each new number. I dare say some of you may know that I have had a rather long acquaintance with the manufacture of pyroxylin, but none of you would guess that I learnt my first lesson in making it from the *Pharmaceutical Journal*. The number containing an account of Schönbein's discovery reached me at Sunderland one day in the forties, and I am sure the day after did not pass before I put the accuracy of the account of the process of making gun-cotton to the test of experiment. In those days scientific literature was scarce, and valued, as the diamond is, in proportion to its rarity. Happily, there is now plenty of intellectual nourishment of that kind. I had almost said enough and to spare, but I cannot say that, for I am conscious that, as in common diet, what is far from good for one may be wholesome enough for others. Then, you could count the scientific journals on your fingers. Now, the scientific and the semi-scientific journals together are such a bewildering mass that you cannot possibly read them all. Careful selection is necessary if any time is to be left for general reading, and general reading is a not unessential thing.

General Education.

The difference between the time of which I speak and the present time in the matter, not only of pharmaceutical education, but also in regard to general education, is great. At the time of the founding of the School of Pharmacy a large percentage of the population of the three kingdoms could not read. Now, the state of things has so far improved that the proportion of the totally illiterate is comparatively small, and a select few, the worthiest of the children and grandchildren of the formerly illiterate class, can, and do occasionally, gain entrance to the universities, and are given an opportunity for the exercise of their abilities, for their own benefit and for the enrichment of the intellectual life-blood of the nation.

There is, no doubt, a considerable change for the better, but it did not come till long after it was an urgent necessity, and it has not yet gone nearly far enough. We see one of the evil consequences of our educational deficiencies in the much less rapid progress we, as a nation, have made, comparatively with our industrial rivals, in those branches of industry more especially which are the outcome of the scientific discoveries of recent times, and which largely depend for their evolution and successful practical application on original research and on the intelligent appreciation, by the capitalist and commercial class, of the resources of science and the advantages of high scientific training and scientific work as auxiliary forces in promoting industrial development and progress.

We are still desperately in need of more thorough general education and of the means of larger and better organised exploration of new fields of knowledge. While we are slowly learning by the painful process of ruinous loss the lesson of our want in this respect, our competitors abroad have long been reaping the benefits of their earlier recognition of the value of knowledge and of the means of acquiring knowledge as a basis of industrial prosperity.

The School of Pharmacy.

Concurrently with the other work of the Pharmaceutical Society, the School of Pharmacy has been one of the largest contributors towards the improvement of pharmaceutical education and the elevation of British pharmacy to the rank of a scientific profession. It has been one of the most potent forces in the creation and maintenance of that higher status to which the educated pharmacist is everywhere entitled.

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* Address delivered at the opening of the session of the School of Pharmacy, 17, Bloomsbury Square, London, on Thursday, October 1, 1903.

The sixty years that fill the interval between the founding of the School of Pharmacy and the present time have yielded harvests of unexampled richness from all the fields of science and industry. They are the most memorable years in the whole range of our country's history; they have produced more of those changes which will leave deep and enduring marks on human progress than any equal period since the world began. Within this wonderful epoch we have seen, as the results of British initiative—of British invention and enterprise (applied before the influence of education on industrial progress became as paramount as it is now), the evolution of those means of rapid inter-communication and transport by land and sea that have brought the ends of the earth together, and at the same time we have seen those immense industrial growths which are the outcome of increased commerce and of new and larger uses of steam and electricity.

These spacious years have given us astounding accessions of chemical and physical knowledge. Professor Palmer Wynne, in his address last year, pointed out some of the advances that more particularly interest you as pharmacists—the great development of organic chemistry and the successful production of many valuable synthetic compounds. Among its most widely beneficial gifts in touch with pharmacy must be remembered the introduction and scientific evolution of antiseptic surgery and the application of new knowledge (gained chiefly by the aid of the microscope) to sanitation and to the prevention and cure of disease.

Contrasts.

But I am not going to attempt to give you an inventory of all the wealth of scientific knowledge garnered in those prolific years. I wish merely to broadly indicate and remind you of the wide difference between the present state of things and the former as it affects your position as students, and to point out the advantages you possess over the less fortunate apprentice of sixty years ago.

The hero of Locksley Hall, forecasting some of those changes we have seen, exclaims, "Let the great world spin for ever, down the ringing grooves of change." It is rhapsody, but it gives a true impression of one of the most striking features of our time, its rush and whirl, its tremendous activity. The world spins no faster than it always has spun, yet the general acceleration of speed everywhere seen sustains the illusion that the world and every thing is going faster and faster. It is undeniable that by means of the many helps to rapid motion and rapid action science has provided we can now generally crowd a much larger quantity of mechanical work within the compass of the day than was possible at the time the School of Pharmacy was founded. Scientific teaching, such as you will here have the benefit of in this School, tends to economise time by the use of scientific methods. On renewing my acquaintance with the laboratories I am glad to see improvements, chief among them the institution of a Research Department, and considerable extension of the working space. I congratulate you on the advantage you possess in the great ability of the teachers who will guide your studies, and on all the circumstances, so far as I know them, that attend the opening of this new session.

Opportunities for Distinction.

You are highly privileged. You have here an excellent opportunity for acquiring that basis of knowledge necessary for a pharmaceutical career, and you will, if you are so disposed, and if you take the necessary trouble, and have the requisite ability and determination, have opportunities for distinction beyond what is implied in the phrase "a pharmaceutical career." You will have ample scope for the exercise of any talent you may possess for doing original research work. You will, I hope, remember the good work that has been done by former students in the research laboratory, and I trust you will emulate their example, and that from among you some bright particular stars may shine out and win the supreme honour of making discovery of new knowledge and of adding fresh lustre to the name of the School of Pharmacy.

I hope that all the students have had as good a general education as the Minor Examination demands as a preliminary, but I must confess I feel that the proof given in the case of those who have passed a sufficient preliminary examination at the outset is a great satisfaction. In these times of migratory movement and foreign competition, the knowledge of at least one modern language, besides Latin and the mother-tongue, is almost a necessity, and a competent acquaintance with arithmetic, algebra, and Euclid is necessary in an even higher degree. The question naturally presents itself (and doubtless it has been well considered) whether it would not be a good thing to make examination and proof of good preliminary training an essential passport to the School.

The Pharmacist an All-round Man.

I congratulate you all on the choice you have made of pharmacy as your life-work. I do not know any form of industry that embodies so many various interests. The well-educated pharmacist (and it seems as if we were in a fair way soon to have no other than the well-educated pharmacist) must be a man of science, and he must also be a man of business; he must possess a wide range both of special and general knowledge. The educated pharmacist is one of society's most useful and necessary members—an all-round man, who can do a great many things and do them all well.

No doubt the principal object with most of you, in becoming students of the School, is to fit yourselves for the ordeal of the Minor or Major Examinations of the Pharmaceutical Society, with a view to a livelihood, and, to that end, the attainment of the status which the Minor Examination confers, or to the acquisition of the higher rank attaching to the Major Examination and the higher title which is its reward—a rank and title that, considering the amount and variety of special and general knowledge you must possess to attain it, is one of which anyone may well be proud.

A Marching Corps.

But I feel sure that this is not your only motive. I am sure that you are not unmindful of the incidental advantages that attend this necessary preparation; the advantage, among other things, of increase of your general knowledge, and of the formation of habits of order and method in study and experiment, acquisitions which you will find of the greatest use in after life. Here, you are placed in circumstances which make learning comparatively easy. The atmosphere is the atmosphere of study, you are in a marching corps, and you must keep step; the contact-action principle comes into play; the total effect is that you are helped in the assimilation of knowledge, and in the formation of good habits of work.

It is not to be denied that even in the best circumstances the routine grind of study is often in conflict with natural and healthy impulses towards other uses of time and thought, and that it requires a not inconsiderable amount of restraint and self-denial to do full justice to the main business you have set yourselves to accomplish. I strongly sympathise with you in the inevitable struggle you will often have to make in choosing the line of duty rather than the line of pleasure.

Too Much Pleasure.

That keen observer of human nature, Mr. Rudyard Kipling, has, roughly—I might almost say, harshly—summarised our national defects. He says, in his own strong way, and I believe he says truly, that in many vital matters we are too easy-going and careless, and in less essential things a little over-ardent—that we hardly take life seriously enough, but treat it over-much as if it were a matter of pure pleasure and amusement. It is said that we take our pleasure sadly; I fear there is some truth in that, but it is certainly truer that we take sadly too much pleasure. It is not to be denied that by nature, or habit, our youth are not as keen lovers of study as of sport. I was told by a great teacher, well acquainted both with the character of the English student and the Japanese, that he had to drive his English, but restrain his Japanese. I ought to add that the gentleman I quote had no experience of the students of this school; had he known you he might possibly have modified that rather depreciatory statement.

I said that in the School you were in an atmosphere of study. But when you are not in the School you are probably often subject to influences that tend to draw you away from study. I do not counsel such austerity as would deprive you of any and every pleasure; but, knowing how strong and how many are the temptations to the profitless expenditure of time, and that the London student is not, as a rule, prone to excessive devotion to study, or excessive aversion to amusement, I do not feel that the danger is great of any serious harm in the direction of excessive abstinence. By all means take athletic exercise, as much as is necessary for your health, and do not deny yourself pleasure or amusement in moderation, but do not let indulgence interfere with work.

Your special duty as students is study. Be earnest, be whole-hearted in your work—find your pleasure in it. If you look at it in the right way you will have no difficulty in discovering that your work, or some section of your work, contains within itself the elements of refined pleasure, the means of recreative enjoyment and delightful pastime.

Nature Study.

The particular studies that you are now either entering on, or in the midst of, are of a kind to give exercise to all your previous knowledge, and to develop some faculties not much cultivated in ordinary elementary education, more especially the faculty of observation—such observation, I mean, as your lessons in botany and chemistry will give occasion for, and which, whatever the immediate use you may make of the knowledge they impart, will prove an intellectual possession of inestimable and life-long advantage. They will give you interests and pleasures that wealth cannot give—a wider outlook and more intimate acquaintance with Nature, that best of all acquaintances, the most inexhaustible in variety and charm, the most reticent and inscrutable, and yet the best worth questioning and communing with.

Hobbies.

Sir William Ramsay, in speaking here three years ago, strongly advised that the young student should have a hobby. I am sure the advice is good. I am reminded of distinguished pharmaceutists who were men with a hobby. I have known some of them; I will mention one, to show how easy it is to find pleasure within the compass of the student's work. It was my good fortune to know Henry Brady, whose hobby was microscopic research, in a branch of natural history. This hobby did not divert him unduly from pharmacy, for he was a most eminent and successful pharmacist; it rather contributed to his business success, and it enabled him to make valuable additions to our knowledge of some of the more hidden, but not less interesting and important facts of Nature. It gave him high rank as a man of science, and it was also, I am quite sure, a source of infinite delight, and an unfailing solace in failing strength. And I am painfully reminded by the death of Barnard Proctor of another great pharmacist with a hobby. He was my life-long friend. Like Brady, he also was an ardent naturalist as well as a pharmacist. Both were deeply imbued with love of Nature, and such knowledge of her ways as can only be gained by the closest observance. Proctor's work on practical pharmacy is a monument to his technical knowledge and ingenuity.

The Traditions of the School.

The School of Pharmacy is now an old institution; it has helped to lay the foundation of many a prosperous career. It has had associated with it men who have become famous in science. It has traditions of work well done. Uphold these traditions. Remember how especially precious is the time on which you are entering, and that the use you make of it will largely colour all your future life. The passing moment is your opportunity. Take full toll of the best it can be made to yield. Remember, too, that you are more than students of the School of Pharmacy—more than prospective members of an honourable calling—that you are elements in a great community that, measured by the greatness of its achievements—by the force it has exerted in bringing about those social and industrial changes that we identify with civilisation, is the greatest in the world. Make yourselves worthy of this heritage.

In bidding you good-bye, I wish you all a happy session, and afterwards a prosperous life-journey. May you each one pass out of the student rank with honour, and as you assume positions of responsibility and command, may good fortune and happiness always keep you company.

RESEARCH WORK FOR YOUNG PHARMACISTS.

Caffeine and its Salts.

A readily soluble and stable simple salt of the alkaloid caffeine being still a desideratum, the attention of research workers is directed to the problem. Although it is mainly prescribed in the dry condition, yet its citrate is frequently ordered in mixture form, and when this is done, the dispensing of it in a satisfactory condition is sometimes a matter of difficulty, owing to its dissociation in the presence of water. This may be overcome by the utilisation of the so-called double salts, such as caffeine sodium salicylate, but these do not seem to be much prescribed by physicians. Whether this is due to a difference in therapeutic action or merely because they are not held in remembrance need not be discussed here; suffice it that the physician, when he wishes to prescribe caffeine in mixture form, generally selects the official citrate. Several other salts of caffeine have been described by chemical investigators, but so far none of them, with the exception of the hydrobromide, have come into general use, and an examination of these, from a pharmaceutical point of view, will therefore be of considerable value. The official method of preparing caffeine citrate, although giving a uniform mixture of caffeine and citric acid, cannot be designated a satisfactory one, and as it stands is not worth a place in the Pharmacopœia. That it forms a "clear syrupy solution with three parts of water" has been disproved by Power and others, and its instant dissociation in the presence of water has been shown by the former investigator. This fact, coupled with the admission that the citrate compound is in no way superior to the alkaloid in therapeutic action, makes its official position somewhat of an anomaly. The solubility of the alkaloid in water being only 1 in 80 (B.P.), is undoubtedly an impediment to its being more frequently prescribed in mixture form, unless advantage be taken of its increased solubility in a mixture of alcohol and water.

Several years ago a considerable amount of work on caffeine and its salts was done by Tauret, Schmidt, and others, but many of the results arrived at were of a contradictory nature, hence the whole subject of caffeine and its salts is a fitting one for investigation. Preliminary to a sketch of the work to be done, it will be advisable to give a brief *résumé* of the various conclusions which those investigators arrived at as a result of their experiments. Tauret and others having asserted that caffeine does not form definite salts with organic acids, Schmidt affirmed that if certain precautions be taken definite salts can be made. Thus, with regard to the acetate, he pointed out that, although when a hot 47 per cent. acetic acid is treated with caffeine and set aside to crystalise, caffeine itself, and not the acetate, separates out, the latter salt may be obtained in a definite form corresponding to the formula $C_8H_{10}N_4O_2(C_2H_4O_2)_2$, when the requisite quantities of caffeine and glacial acetic acid are warmed together, and the solution crystallised over caustic lime. By dissolving the proper quantity of caffeine in ten parts of hot alcohol and then adding two parts of strong sulphuric acid, he obtained a crystalline caffeine sulphate having the formula $C_8H_{10}N_4O_2H_2SO_4$, which, on exposure to the air, absorbed one molecule of water. He also found that occasionally this hydrous sulphate occurs along with the anhydrous sulphate. The nitrate, acetate, and proprionate, each containing two molecules of acid, were also found to be anhydrous. These could be prepared without much difficulty, but the formate, butyrate, and valerianate, each containing one molecule of acid, could be isolated only with difficulty, since even on drying they underwent decomposition.

In reply to the above conclusions of Schmidt, Tauret again denied that caffeine forms definite salts with organic acids, and maintained that the acid is in no degree neutralised, though its presence increases the solubility in water of the caffeine. He further stated that caffeine forms salts with the mineral acids, but these are in no manner superior to the caffeine itself. It will be observed that no individual mention is made of either the phosphate, tartrate, lactate, borate, cinnamate, hypophosphite, malate, salicylate, iodide, or nitrite. All of these, in addition to those already mentioned, ought therefore to be experimented with. Perhaps it may be advisable before going into the details of these experiments to state the points to be kept in view during the investigation. These are:—

(1) The composition of the compounds.

(2) Their behaviour in the presence of solvents.

(3) Their comparative utility in practical pharmacy.

In the preparation of alkaloidal salts several methods are available, but owing to the ready dissociation of known caffeine salts, various modifications may be necessary.

The customary method of saturating a solution of the acid with the alkaloid or of adding a sufficiency of acid to a known quantity of alkaloid dissolved or suspended in a liquid may not be available in the case of each of the above salts. Both of these methods should, however, be tried before others are attempted. Workers will find *résumés* of Schmidt and Tauret's experiments in *P.J.* [3], **22**, 986, and [4], **1**, 261, and these should be carefully studied. A sample of a salt having been prepared, in the crystalline form if possible, the next step will be to determine its composition. To do this the crystals must be carefully freed from any adherent moisture by means of bibulous paper and by placing them in a dry and warm (not hot) place. A weighed quantity is then heated on a water-bath until it ceases to lose weight. In the case of a weak compound of caffeine with a volatile acid this might cause partial dissociation, and accordingly such a possibility ought not to be forgotten. On the other hand, it ought not to be assumed that all the water of crystallisation will be driven off at the temperature of a water-bath. Having ascertained the percentage loss, if any, at water-bath temperature, the same portion of the compound should be further heated on a sand-bath or an air-bath at a temperature of 110° for a period, and the weight again taken. Should there be no decrease in weight it may be taken that the whole of the water of crystallisation has been driven off. The next step will be to determine the proportion of caffeine to the respective acid. In the case of the hydrobromide salt the following method answers fairly well:—A weighed quantity (say 1 Gm.) is dissolved in 40 C.c. of water and solution of potassium hydroxide added until the solution is distinctly alkaline to litmus paper. The liquid is then placed in a separator and the caffeine washed out with successive portions of chloroform. After measuring the chloroformic solution, it is placed in a tared basin, evaporated to dryness, and the residue dried on a water-bath until it ceases to lose weight. A slight deduction will have to be made from the residue weight on account of a small quantity of the potassium salt being dissolved by the chloroform. Determine this by shaking an excess of the potassium salt with a 10 per cent. solution of caffeine in chloroform, until the latter is saturated, and then evaporating a measured quantity on a tared glass. The solubility having been determined, it will be an easy matter ascertaining the approximate quantity which would have been dissolved by the chloroform used in estimating the caffeine salt. Having now obtained the weights for alkaloid and water of crystallisation, if any, the difference between the total of these two and the quantity of salt taken will represent the weight of acid in combination. In the case of salts completely dissociated in the presence of water the weight of the acid may be checked by titration with standard alkali. It should be noticed that the formulæ given by Schmidt and Tauret indicate caffeine as being either a mon-, di- or tri-acid base, according to circumstance. This matter should therefore receive careful attention on the part of the investigator, each formula given being subjected to verification. In an investigation like this it is impossible to indicate every step to be taken without actually doing the work, because subsequent experiments depend upon the results obtained from the previous. Students will therefore have to be satisfied in the meantime with a general indication of the line they are expected to follow. Advice on subsequent steps may be had on application to the Editor. After having determined the composition of the salt, attention should be directed to its behaviour in the presence of liquids. Of course, a good deal of information on this point may be gleaned in the work done whilst preparing the salt, and the following typical caffeine mixtures will be sufficient to test it from the practical pharmacy side.

(1)	℞	Caffein. cit.	gr. 80.
		Liq. strychniæ	♏ 64.
		Tr. strophanthi	♏ 80.
		Spt. chlorof...........	ʒiii.
		Aq. camph. ....ad	℥ii.
(2)	℞	Tinct. gelsemii.	ʒi.
		Caffein. cit.	ʒi.
		Syr. aurantii	℥i.
		Aq. ....ad	℥iii.
(3)	℞	Caffein. cit.	ʒi.
		Spt. ammon. arom.....	℥ss.
		Aq. ....ad	℥iii.
(4)	℞	Potas. acetatis	ʒii.
		Potas. citratis	ʒii.
		Caffein. cit.	ʒi.
		Dec. scoparii ......ad	℥vi.
(5)	℞	Tr. digitalis...........	ʒi.
		Caffein. cit.	ʒss.
		Glycerin.	ʒvi.
		Aq. ....ad	℥iss.
(6)	℞	Potas. bromid.	ʒii.
		Caffein. cit.	ʒi.
		Syrupi	℥i.
		Infus. digitalis......ad	℥vi.

In each of these the caffeine citrate may be dissolved without much difficulty provided a certain course be followed; in the case of those containing alcohol by mixing it (the alcohol), with two or three times its volume of the water, and dissolving the caffeine citrate in this mixture, whilst in those containing alkali salts the caffeine salt should be dissolved separately, and the solution mixed with that of the former. If the three salts in (4) be mixed together and the decoction added a white precipitate is thrown down which refuses to dissolve, but no difficulty is met with if the caffeine citrate be dissolved in 4 oz. of the decoction and the potassium salts in the remainder.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Characters of Pure Ether.

After an exhaustive examination of the tests for ether, the details of which are published in a lengthy paper not suitable for abstraction, W. Wobbe comes to the conclusion that pure ether for inhalation should comply with the following requirements:—(1) Specific gravity, 0·718-0·720 at 15° C. (2) Boiling point not under 34° C. nor over 35° C. (3) It should be without effect on Nessler's reagent (20 C.c. of ether shaken with 5 C.c. of the reagent; a test for aldehyde, alcohol, hydrogen peroxide). (4) 20 C.c. shaken in a stoppered cylinder with 5 C.c. of alkaline solution of silver nitrate should cause no change in the solution. (5) 20 C.c. shaken with 5 C.c. of a freshly prepared solution of potassium ferricyanide and ferric chloride and placed in the dark should not colour the aqueous liquid green or blue. (6) 20 C.c. shaken with 5 C.c. of potassium iodide and phenolphthalein solution should not produce a red coloration. (The reagent is made by mixing equal volumes of a 50 per cent. solution of potassium iodide and 1 per cent. solution of phenolphthalein; it indicates hydrogen peroxide, which liberates potassium hydroxide from the potassium iodide.) (7) 20 C.c. allowed to evaporate spontaneously should leave no residue or odour. (8) The same quantity evaporated with five drops of water should leave a residue that neither reddens litmus paper nor bleaches it. (9) The vapour of pure ether should be alkaline to litmus paper.—*Apoth. Zeit.*, **18**, 458.

Determination of Arsenic in Beer.

W. Thompson has described a method of approximately determining minute quantities of arsenic in foods and liquids. He states that the most delicate method of detecting and determining minute quantities of arsenic is by a modification of the Marsh-Berzelius process, in which the arsenic passes always as a gas in combination with hydrogen. The modification he suggests is the cooling of the tube on which the "mirror" was deposited, and heating the portion immediately before it as intensely as possible. This process gives a very distinct arsenic "mirror" (deposit) down to the 2,000th part of a grain per gallon of beer when working with less than a sherry glassful. By this chemical test, therefore, the presence of arsenic can be detected in that quantity of beer if one grain of arsenic trioxide were dissolved in four thousand gallons, which would require 111 ordinary brewers' barrels of thirty-six gallons each to contain it. The Joint Committee of the Society of Chemical Industry and of the Society of Public Analysts has recommended, among other things, that in estimating arsenic by the Marsh-Berzelius method the tube near the draw-out portion of the apparatus which was heated should previously be wrapped in copper wire gauze. This Thompson finds a disadvantage, larger "mirrors" being obtained from the same quantity of arsenic if the glass tube be heated directly, and the draw-out portion of the tube cooled. Arsenic is deposited either as a bright brown metallic "mirror" or as a black deposit. The deposit in the metallic form affords the best means of determination, but arsenical deposits are liable to fade if exposed to light, an effect which he believes to be due to the absorption of the metal in the hydrogen with which the tube is filled. This results from the influence of light. Thompson adds that the electrolytic process recommended to analysts by the Board of Trade does not suffice to detect quantities of less than 1-500th of a grain, while the zinc process, with the Marsh-Berzelius method, detects quantities up to 1-2,000th part. By electrolysis the greater the quantity of glucose in the beer the less chance there is of detecting arsenic.—*Proc. Brit. Assoc.*, 1903.

Poison of Sea Snakes.

In a further communication, read before the Royal Society, Dr. Leonard Rogers continues the record of his observations on the poison of sea snakes. From a series of experiments on rabbits, cats and frogs, he finds that, in lethal doses, Enhydrina poison has no direct depressing action on the heart. The marked rise of blood pressure which is observed is secondary to failure of respiration, producing venosity of the blood. Dr. Rogers has demonstrated that the primary action of the poison is the production of a respiratory paralysis by a direct action on the respiratory centre, this being very quickly followed by paralysis of the end plates of the phrenic nerves. This phenomenon may occur at a time when the sciatic nerves show no end-plate paralysis. It is observed that the poison has a very marked action in paralysing the end plates of motor nerves, but does not perceptibly affect the conducting powers of the nerve trunks themselves. In this respect it resembles cobra venom and curare. The action of Enhydrina venom on the reflex functions of the spinal cord is slight, and altogether secondary in importance to its influence on respiration.—*B.M.J.*, **2,229**, 676.

Some Properties of Urea.

W. Ramsden finds that pure urea has some remarkable properties. Saturated solutions of it prevent the coagulation of all proteids by heat; they swell up and dissolve in saturated aqueous solution of urea. Dry gelatin is dissolved at ordinary temperatures, forming a 40 per cent. solution; coagulable albumins, in the cold, are converted into bodies possessing all the properties of alkali and acid-albumin according as the solution of urea used was either acid or alkaline. Urea accelerates the digestion of fibrin by pepsin, up to 10 per cent.; in larger quantities it retards the digestive action. A dead frog, placed in saturated urea solution, became translucent and fell to pieces in a few hours. The ligaments, tendons, and connective tissue were converted into a clear, soft jelly. The muscles, if shaken briskly in water, fall completely into individual muscular fibres, which retain their structure and make admirable histological specimens. The hæmoglobin of the blood is converted into a body resembling alkaline hæmatine. The skin brushes away on the slightest touch. Nervous tissue becomes semi-transparent, and the nerves easily rupture. No putrefaction ever takes place in saturated urea solutions. This action of urea solution makes it a valuable histological reagent; tissues can be preserved in it indefinitely, and after a short immersion in water may afterwards be stained in the usual way.—*Journ. State Med.*, **9**, 297, from *Proc. Physiolog. Soc.*

Purity of Linseed Oil.

B. Sjollema recommends the index of refraction as a good indication of the purity of linseed oil. It was determined by Zeiss's refractometer and with sodium light, the refractometer number varying from 87·0 to 91·5. The presence of a large proportion of free fat acid depresses the reading considerably, 10 per cent. producing a depression of 1·5; if, therefore, a very low refractometer number is found the quantity of free fat acid present must be determined. Oxidation causes a rise, and the oil therefore extracted by ether from the cake, and dried at 100° C. for two hours, gave incorrect readings. Mineral oils and resin oils have higher refractive indices than linseed oil, but almost all vegetable and animal fats have lower, so that it is not difficult to produce a mixture having approximately the same refractometer number, and hence unsaponifiable oil should be examined for. Next to the refraction-index the iodine number gives, according to Sjollema, the most reliable indication of purity.—*Zeitschr. für Nahrungs. u. Genussm.*, **6**, 631.

Colouring Substances and the Digestive Power of Pepsin.

A. J. Winogradow has made a number of experiments upon the action of various tar-colouring substances on the digestion of albumen by pepsin. Out of twenty-five examined, none were quite indifferent, but the following exerted a very marked prejudicial effect when present only in the proportion of a few tenths or hundredths of 1 per cent., the digestion being almost completely stopped:—Safranin, ponceau RR., azofuchsin G., orange II., cœrulein S., phloxin R.B.N., iodeosin, chrysaniline, magdala red, azoflavin, benzopurpurin, and cerise.—*Zeitschr. für Nahrungs. u. Genussm.*, **6**, 589.

Saponins of Guaiacum.

The constituents of guaiacum wood have already been the subject of research, and the presence of saponins has been recorded. W. Friboes has investigated these more closely, and finds that the wood and bark of stem, twigs and root of the guaiacum tree contain two substances belonging to the class of saponins, viz., guaiacsaponic acid and guaiacsaponin. The former is not toxic, and excites but little action upon the blood corpuscles, but has a stupefying action upon fish, even when only 0·05 per cent. is present. Guaiacsaponin is similarly devoid of toxic properties. The leaves of the guaiacum tree also contain two saponins, which are similar to, but not identical with, those from the stem and root. These results are interesting, and throw light upon the use of guaiacum wood in syphilis, in which it probably acts as a diuretic. On account of their non-poisonous nature these saponins could be applied to various technical uses.—*Pharm. Zeit.*, **48**, 626.

Distinguishing the Eucaines.

G. Eigel recommends the following method of distinguishing solutions of the hydrochlorides of cocaine, α-eucaine and β-eucaine. 10 C.c. of a 0·1 per cent. solution of α-eucaine hydrochloride gives a white precipitate with one drop of ammonia; solutions of cocaine hydrochloride and β-cocaine hydrochloride of the same strength give no precipitate. One drop of a 1 per cent. solution of α-eucaine hydrochloride with one drop of a 10 per cent. solution of potassium iodide deposits, in a few minutes, large crystals of α-eucaine hydriodide; solutions of cocaine hydrochloride and β-eucaine hydrochloride of the same strength give no precipitate. One drop of a 1 per cent. solution of α-eucaine hydrochloride or cocaine hydrochloride gives a white precipitate with a drop of a 5 per cent. solution of mercuric chloride. β-eucaine gives no precipitate.—*Apot. Zeit.*, **18**, 603.

Another Glucoside in Rhubarb.

E. Gilson has discovered a new glucoside, ponticin, in two commercial varieties of rhubarb, viz., those known as *Rheum rhaponticum* and Austrian rhubarb. He regards both these commercial varieties as being derived from the same plant, a hybrid between *R. rhaponticum* and *R. undulatum*, the rhizomes and larger roots being sold as Austrian rhubarb, the smaller under the name of "rheum rhaponticum." He was unable to find ponticin in English rhubarb (? from *R. officinale*) or in Shensi rhubarb. It can be extracted from the drug by acetone, although, curiously, when crystallised it is insoluble in that menstruum. It has been obtained in white crystals having the formula, $C_2H_4O_9$ and is insoluble in water, ethyl alcohol, methyl alcohol, cold acetic acid, ether, chloroform and petroleum spirit; caustic alkalies dissolve it with facility. By boiling with 5 per cent. sulphuric acid it is hydrolysed into dextrose, and a new substance, pontigenin; the latter is also crystalline, but soluble in ethyl alcohol, methyl alcohol, and ether.—*Apot. Zeit.*, **18**, 603.

Slow Combustion of Methane and Ethane.

William A. Bone, in a paper read before the British Association, said he thought that the idea of "preferential combustion," whether of hydrogen or of carbon, was closely allied to the old doctrine of "elective affinity," and that it was hardly to be reconciled with modern conceptions of the nature and conditions of chemical change in a homogeneous system. Furthermore, it might be pointed out that the evidence usually adduced in support of the contention that carbon burned preferentially to hydrogen was wholly derived from experiments on the oxidation of hydrocarbons at very high temperatures. Under these conditions, it was practically impossible, by any means at their command at present, to distinguish the character of the primary oxidation in the case of a hydrocarbon, for, since the velocities of all the reactions concerned were enormously great, the final state of equilibrium was almost instantaneously established. The experiments on the slow combustion of methane and ethane had been carried out at temperatures far below the ignition-points of the gases—that was to say, at temperatures where the oxidation velocities were sufficiently small to allow of their being easily measured.

Tannin in Kino.

Fr. Lühn publishes the results of an examination of genuine Malabar kino obtained from the Imperial Institute. The percentages of tannin indicated by various methods are not without interest; they are as follow (calculated upon the kino dried at 105° C.):—

(1) Agitation with hide powder	94·49 per cent.
(2) Precipitation with warm subacetate of lead	81·28 per cent. 81·38 per cent. 78·90 per cent.
(3) Precipitation with cold subacetate of lead	76·17 per cent.
(4) Titration with iodo-potassium iodide (F. Jean; *Chem. Centralb.*, 1900, 1,298)	73·29 per cent. 73·82 per cent.
(5) Precipitation with cupric acetate (Eder)	39·83 per cent.

—*Pharm. Zeit.*, **48**, 593.

Sterilisation of Water by Ozone.

The experiments of Calmette, of Lille, and of the Ozone Syndicate, London, have demonstrated that ozone can be practically applied in the sterilisation of drinking water. That ozone is a powerful germicide and destroyer of organic matter has long been known, but the practical difficulty in the way of its use has been the cost of its production. Recently Koch, Ohlenmuller, and Prall have elaborated a system which bids fair to be of practical utility, and an installation has been adopted by the city of Wiesbaden. A descriptive article on the "Ozone Waterworks of Wiesbaden," with illustrations of the ozonisers, the sterilising towers (inside view), and the transformers for the production of high-tension electricity, appeared in the *Illustrated Zeitung* (Leipzig and Berlin) for October 9, 1902.

Constituents of Barringtonia Speciosa.

The seeds of *Barringtonia speciosa*, Gaertn., a large tree growing on the Indo-Malayan coasts, have been analysed by W. P. H. Mareeuw. The seeds, dried at 105° C., were found to contain 2·9 per cent. of fixed oil, 0·540 per cent. of gallic acid, 1·082 per cent. of barringtogenitin, and 3·271 per cent. of barringtonin. Barringtogenitin was obtained in minute colourless crystals melting at 131° C. It has the formula $C_{15}H_{21}(OH)_3$, and is not glucosidal. Barringtonin, on the other hand, is a glucoside belonging to the saponin group. It is colourless and amorphous; mineral acids hydrolyse it, yielding a sugar that was not identified and a new substance, barringtogenin. Barringtonin has the formula $C_{18}H_{28}O_{10}$, and is a cardiac poison.—*Schweiz. Woch.*, **41**, 423.

THE STUDENTS' COLUMNS.

VEGETABLE MATERIA MEDICA.—II.

Classification.

Various methods have been proposed and adopted for the classification of vegetable drugs; the following are the most important, and may therefore be briefly noticed:—

Classification according to Physiological Action.—While such a classification may be very suitable from a medical point of view, since the physician and medical student direct their attention chiefly to the physiological action of drugs, it is obviously unsuited for the pharmacognosist, who is probably but imperfectly acquainted with physiology, and to whom the physiological action of the drug is a matter of secondary importance.

Classification according to the Natural Orders to which the Plants yielding the Drugs belong.—This method has the advantage of being based upon an elaborate system already in existence in which every known plant has its assigned place. It has been largely adopted, especially up to within the last twenty-five years; but cannot be strictly called a classification of drugs, as neither the characters nor the properties of these receive any consideration whatever. It labours under the disadvantage of often separating drugs that are closely allied in their nature, but happen to be derived from plants belonging to widely separated natural orders—such, for instance, as the various gums—and it often brings into juxtaposition drugs that have little in common with one another except that they are yielded by plants belonging to the same or to closely allied natural orders.

Classification according to the Morphological Nature or the Chemical Constituents of the Drug.—By this arrangement leaves, flowers, fruits, resins, gums, etc., form separate sections, and are considered together. Drugs, therefore, that are allied to one another are placed in juxtaposition. On the other hand, drugs of various morphological nature, but derived from the same or allied plants, and possessing similar active constituents and properties, may be widely separated—as, for instance, belladonna leaves, belladonna root, henbane seed, and scopola rhizome. This is perhaps a disadvantage of the system, but it is not of great moment, since there are but few instances in which such a separation is made. The preference is therefore now generally given to a classification based upon the morphology or chemical constituents of the drug.

The student may with advantage deal first with the leaves. These organs are more or less familiar to him, and he will be able to examine and describe them without serious difficulty.

Leaves.

Leaves are best collected when the plant is in vigorous growth. Though there are but few analyses of leaves collected at varying stages in the development of the plant, yet the tendency is to show that as the autumn approaches they become less active. They are dried by exposing them in thin layers in a warm airy place; for transportation they are either packed loosely in cases or sacks, or are pressed by hydraulic pressure into compact bales. Sometimes they undergo a sorting-over to remove accidental impurity before they are packed.

In the entire, or nearly entire, state they may generally be identified by such characters as are perceptible to the unaided senses, especially the unaided eye; whereas in the state of coarse or fine powder the unaided eye is almost powerless to distinguish them. In the majority of cases such magnification as can be obtained with an ordinary hand lens is sufficient, and this the student should provide and use. Nevertheless, it occasionally happens that the microscope can with advantage be used to confirm a decision arrived at by other means.

With the view of ensuring the complete examination of a leaf, the student should be careful to pay attention to the following points, viz., *size, outline, margin, venation, petiole, hairs, glands, texture, colour, odour,* and *taste.*

Size.—While the size of a leaf is obviously subject to considerable variation according to its development, nevertheless the fact that leaf-drugs consist principally of mature leaves tends to restrict this variation considerably. The size is determined by the actual measurement of a number of individuals and the average is generally quoted.

Outline.—The outline or shape of a leaf is also subject to variation within certain limits, but is generally a good and fairly constant character. The student should consult a manual of descriptive botany, and compare the outline of his leaf with the typical examples there given.

Margin.—The character of the margin must be carefully observed, as it is a constant and reliable feature; the apex and the base of the leaf should in this respect be attentively examined and the manual of descriptive botany again consulted.

Venation.—The number of lateral veins, their prominence or otherwise, the manner in which they branch or unite with others as they approach the margin, and the angle they make with the midrib as they leave it must be noted. The latter character varies a little with any variation in the proportionate breadth of the leaf, the broader the leaf in proportion to its length the larger being this angle; hence, leaves of average proportions should be selected.

Petiole.—The presence or absence of a petiole should be observed.

Hairs.—Many leaves are more or less densely clothed with hairs when they are very young, but lose them as they approach maturity; many, on the other hand, retain them throughout their whole life. Not only the presence of hairs, but their nature, also, should be recorded. Both surfaces should be examined with the lens, particularly the veins on the under surface.

Oil Glands and Oil Cells.—These sometimes occur supported on pedicels, sometimes embedded in the substance (mesophyll) of the leaf. They appear as translucent points when the leaf is held up against a strong light and examined with a lens. A little care must be exercised, for some leaves are so opaque that they do not allow of the oil cells being seen, and it may happen that the pellucid points visible are not oil glands, but some other form of transparent receptacle (mucilage).

Texture.—A very constant character.

Colour.—This should also be noted.

Odour is often characteristic. It is sometimes due to the oil contained in the oil glands or oil cells, and cannot be perceived until these are crushed (by rubbing between the fingers).

Taste is also often characteristic.

The student should examine each leaf bearing these points in mind, keeping preferably a list of them before him, against each of which he can write down his observations. He should then not fail to make an outline sketch of natural size, and indicate the directions of the veins. In addition, he should obtain from his text-book the following particulars:—Botanical source (with natural order), habitat, chief active constituents, and general therapeutic action. The habitat of each should be marked upon a blank atlas, or, better, upon an outline sketch of the chief continents, on a fairly large scale.

Cherry-laurel Leaves.

These are easily obtained, as the shrub is to be found in almost every garden. The student should have his list at his side, and record his observations as follows:—

Size.—A leaf of average size measures about 12 Cm. in length by 5 Cm. in width.

Outline, almost obovate, tapering at the apex and narrowing at the base.

Margin.—Sharp teeth are present on the margin. They are at some distance from one another near the base, but are closer together as the apex is approached.

Venation.—There are about eight lateral veins, which make an angle of 50° or 60° with the midrib. As they approach the margin they curve round towards the apex. The midrib is very prominent on the under surface.

Petiole.—Attached to the base is a short, stout petiole.

Hairs.—None; the surface is glabrous.

Glands.—There are no oil cells or glands in the leaf, but on the under surface, on each side of the midrib near the base of the leaf, are one or two glistening (sugar) glands.

Texture, leathery.

Colour, dark glossy green above, paler and less glossy below.

Odour.—The entire leaves are practically free from odour, but if a leaf, especially a very young leaf, be crushed between the finger and thumb, a distinct odour of bitter almonds will become perceptible.

Taste.—Very young leaves taste also like bitter almonds when chewed; older leaves have a bitter taste.

The leaves contain laurocerasin, a body which has been obtained in a crystalline form, and which, under the influence of certain agents, decomposes, yielding as products dextrose, benzaldehyde (oil of bitter almonds), and hydrocyanic acid. The agent that causes the decomposition is, in this instance, an enzyme ferment, emulsin. In the intact leaf this is stored in a layer of cells surrounding the veins, whilst the laurocerasin is stored in the parenchyma, and these two substances cannot come into contact until the cells containing them are broken and their contents discharged, nor will the decomposition take place unless water is present. Hence, in making cherry-laurel water, the only preparation for which the leaves are used, the Pharmacopœia directs them to be crushed and placed in a retort with water previous to distillation. By this means they yield about 0·1 per cent. of hydrocyanic acid.

The botanical name of the shrub is *Prunus laurocerasus*, and it belongs to the natural order Rosaceæ. Although not a native of this country, it is very commonly cultivated, and the herbalists and druggists derive their supplies largely from the cuttings of cherry-laurel hedges. The physiological action of the leaves, like that of hydrocyanic acid, is sedative.

Books for Study.

Green's 'Botany,' Vol. I., pp. 51 to 80. Greenish's 'Materia Medica,' Sec. I.

A DELICATE BIOLOGICAL TEST FOR ARSENIC.

BY A. E. BELL, F.I.C.

It has been observed that certain vegetable moulds, notably the *Penicillium brevicaule*, possess the power of disengaging the well-known odour of garlic when grown upon substances containing even a minute trace of arsenic.

This phenomenon can be advantageously applied in the examination for minute traces of arsenic, which may escape detection by the usual chemical tests. For example, in some recent experiments with *Penicillium brevicaule* arsenic was detected in a sample of malt, which when examined by (1) Reinsch's, (2) Gutzeit's test gave no indication of the presence of arsenic.

The method adopted in applying the test was as follows:—A sound potato was selected and boiled; it was then cut into several slices, placed in an ordinary Petri dish, and a small quantity of the crushed malt sprinkled over the surface of the slices. This was then sterilised at 110° C. for half an hour to destroy any accidental air organisms.

On cooling, ½ C.c. of previously sterilised water containing spores of *Penicillium brevicaule* was poured over each slice. The whole was then kept at a temperature of 37° C. for twenty-four hours, when, on opening the dish, the odour of garlic was distinctly noticeable.

This method, when suitably modified, can be applied in detecting minute traces of arsenic in wall-paper, wine, beer, gas and certain drugs.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

MAJOR EXAMINATION QUESTIONS (LONDON).

October, 1903.

PRACTICAL CHEMISTRY.

Time allowed, Six Hours.

1. The substance A is commercial ferrous arsenate. Determine in it the percentage of iron, and ascertain what proportion of iron is in the ferrous state.

2. Make a careful examination of the substance B, giving a full account of its reactions, and state what kind of substance you consider B to be.

CHEMISTRY.

Time allowed, Three Hours.

Six questions only are to be attempted; and of these, at least two must be taken from Part II.

PART I.

1. Explain by equations the action of heat on the following salts of ammonium:—The sulphate, phosphate, nitrate, chromate, cyanate. Explain also the action of heat on the following compounds of lead:—The oxides, acetate, nitrate, oxalate.

2. Ten Gm. of sodium bicarbonate are decomposed by tartaric acid in a vessel of 500 C.c. capacity filled with air at 760 Mm. pressure. Calculate as nearly as the data allow the final pressure that would be produced. What other data are required for an exact calculation?

3. What impurities would you expect to find in the following substances as ordinarily prepared:—Hydrogen sulphide, metallic copper, bromine, hydrogen fluoride, manganese peroxide? Explain how you would prepare these substances in as pure a state as possible.

4. Devise some method that does not involve the use of ammonia for detecting lead, silver and mercurous salts, when present together in a solution.

5. With what other elements would you classify each of the following:—Cobalt, boron, tin? Give reasons for your answer.

PART II.

6. Explain the meaning of the following terms as applied in organic chemistry, and give examples of their use:—Hydrolysis, condensation, metamerism, nitration.

7. What is the chemical character of crude petroleum? What different commercial products are separated from crude petroleum, and what are their chief characteristics? What is meant by the "flash-point" of an oil, and how is it determined?

8. Give an account of the preparation, properties and uses of formaldehyde. How do you explain the power of forming addition compounds which is exhibited by aldehydes? Give examples.

9. Describe the experimental evidence which justifies the accepted constitutional formulæ of common lactic acid and salicylic acid.

PHYSICS.

Time allowed, Three Hours.

Only six questions to be attempted.

1. If you wished to form an enlarged image of an object with a lens of six inches focus, what distances would the object and screen have to be from the lens if the amplification desired were four diameters?

2. Give an explanation of the formation of a cloud of vapour when the pressure is suddenly lowered inside a vessel containing moist air.

3. Explain the meaning of the term specific heat. If 100 Gm. of oil of specific heat 0·5, and at a temperature of 20° C., were mixed with 500 Gm. of water at 10° C., what would be the temperature of the mixture?

4. What do you understand by "difference of potential" as applied, for example, to the terminals of a battery? If the terminals of a battery of E. M. F. 4 volts, and resistance 2 ohms, be connected by a wire having a resistance of 6 ohms, to what extent will their difference of potential be altered?

5. Give examples of chemical change induced by the action of light, and in each case give an approximate idea of the range of wave lengths or position in the spectrum of the light which is capable of promoting the change.

6. Give a general account of the modern method of producing liquid air, and explain the application of the principle of free expansion in this method.

7. What would be the effect on the vapour pressures of two liquids put together—(*a*) if they are completely immiscible; (*b*) if they mix perfectly? Give reasons for your answer.

8. Describe the construction and explain the action of an influence machine, such as Wimshurst's.

PRACTICAL MATERIA MEDICA.

Time allowed, One Hour and a Half.

1. Write descriptions of the drugs provided, following the style of the Pharmacopœial monographs.

2. Make histological preparations to display the structure of the drug provided; note any cell contents that are present, and draw attention to features of diagnostic value. Leave not more than two preparations for inspection.

MATERIA MEDICA.

Time allowed, One Hour.

Two questions only to be answered.

1. Describe the mode of formation, collection, chemical nature, and general properties of Acacia and Tragacanth, and mention any commercial varieties or adulterants with which you are familiar. What considerations would guide you in selecting these drugs (either whole or in powder) for pharmaceutical use ?

2. Describe and illustrate by means of diagrammatic sketches the following leaves:—Digitalis, Conium, Aconite, Coca, Jaborandi, and Cherry Laurel.

Draw special attention to diagnostic features. Name the active principles present in each and give a detailed process by which any of them could be obtained in a state of purity.

3. What do you know of the following drugs:—Chrysarobin, Wool Fat, Elaterium, Myrrh, Lupulin, Pepsin, and Scammony Resin ? What tests would you apply in order to determine their freedom from adulteration ?

BOTANY (Theoretical).

Time allowed, Two Hours.

Not more than four questions are to be attempted.

1. Compare the process of fertilisation in Fucus, Vaucheria, and Spirogyra.

2. Distinguish between collateral, bicollateral, concentric and radial vascular bundles, and describe how cambium cells give rise to (*a*) sieve tubes, (*b*) tracheids, (*c*) vessels.

3. Describe and account for the differences which may be observed between a plant grown (*a*) continuously in the dark, (*b*) continuously in the light, (*c*) under normal conditions of alternation of light and darkness.

4. Certain countries show marked alternations of wet and dry seasons. How do plants which live in such countries adapt themselves to these extreme conditions of climate?

5. Give a general account of the Compositæ, and indicate the varieties of inflorescence met with in the Order.

PRACTICAL BOTANY.

Time allowed, One Hour and a Half.

1. Prepare one section to illustrate the structure of A. Leave your preparation, together with a descriptive drawing.

2. Identify the various bodies found in B.

3. Identify and briefly describe D and E.

MAJOR EXAMINATION RESULTS (LONDON).

Candidates examined	5
„ failed	1
„ passed	4

The following candidates were successful:—

Hadley, Mary W.; Birmingham
Harper, George; South Lambeth
Marris, George Wesley; Lambeth
Pitchford, Wm. Thos.; Kennington

NEW REMEDIES.

Kolischer's Solution for Dressing Tuberculous Ulcers.—Calcium phosphate, 5; distilled water, 50; mix and gradually add sufficient dilute phosphoric acid to produce complete solution; filter, finally add to the filtrate phosphoric acid, 6. The lesions are thoroughly irrigated with this solution, and covered, in the interval, with gauze saturated with the same. The treatment may be required for several months.—*Bull. Gén. de Thérap.*, **146**, 272.

Subcutine.—Under this name anesthesane para-sulpho-carbolate has been put forward. It forms a white crystalline powder soluble in cold water 1 : 100, in tepid water 1 : 40. It keeps well in solution. It is said not to produce irritation when used in place of anæsthesine, which does so.—*Journ. Pharm. d'Anvers*, **59**, 334.

PERSONAL VIEWS ON CURRENT TOPICS.

Some Reflections on "Free Trade."—(1).

BY THOMAS TYRER, F.I.C., F.C.S.

The Taxation of Foodstuffs.

"Free Trade" is only a "Utopian" idea—supposed by some sanguine people to be approaching. A little reflection will probably result in apprehension of the facts that Free Trade has never really existed, and the nearest approach to it has been "Free Imports," which is a very different thing. Even in, and after Cobden's time, foodstuffs were not by any means free from taxation; tea, coffee, rice, currants, etc., were taxed for Revenue purposes only. Yet Bright was always, and rightly, clamouring for what became a catch-phrase, "A Free Breakfast Table." We have not yet attained to that, and, if certain recent proposals gain the ear of the public, we never shall. To tax such foods as corn, wheat, and other cereals capable of being grown in Great Britain or its colonies (or, to put it shortly, *within* the Empire), and compensate for such taxation, by removing or lowering taxes existing on tea and such like, is curiously illogical. If these latter are defensible, then retain and even add to the list. If a tax on corn is defensible on any ground, then a tax on foodstuffs all round is equally so. A little reflection upon the chemical constitution of farinaceous, amylaceous, and similar materials used, not only for food, but very largely in arts and manufactures, will lead to the conclusion that differentiation leads to greater fiscal difficulty than at present exists. How much of such materials go to manufactures, and, if logically taxed, by so much enhances the cost of production? It has long been urged, as in the case of sugar, that the advantages have all been with the users of bounty-cheapened sugars from abroad. Why should we complain or disturb any existing foreign arrangement by which their peoples are taxed more or less directly for our benefit? The answer is not quite so obvious as is usually asserted. It is indisputably good, that an excess of any foodstuff should be consumed because it is, first, pleasant, secondly, dirt-cheap? Is it good that British capital should be depreciated almost at one fell swoop by "bounties" and "gifts" to consumers? British capital and labour, direct as well as in its multifarious ramifications, such as machinery, building, are all involved in the question. As all know, annual depreciation of plant, etc., is a wise provision for meeting the inevitable by a gradual process instead of a sudden stroke. But by the unnatural and unscientific method of bounties to foreign producers, whose standing and actuarial charges are thereby reduced, British productions, by capitalist and labour, not alone of sugar, are handicapped. The panacea for this and some other evils is Free Trade *all round*. Under that, so far as manufactures are concerned, there would be a "fair field and no favour" to the extent of the human element as distinguished from the effects of geographical, educational, and internal or national conditions of competing peoples.

The "Freedom" of the Foreigner.

Under any conditions for Free Trade there can never be equality, and the largest hope is for "equalisation" as the nearest approach thereto. Around the base of one of the domes of the International Exhibition of 1862 in London, was emblazoned words to this effect: "Each climate needs what other climes produce." Has this wholesome truism passed out of mind? Is not its obvious moral being accentuated year by year? Is this not the essence of Free Trade? Yet, so long as human nature is what it is, advantages or seeming advantages will be seized upon by competitors. This consideration appears to have been lost sight of in our beloved country more than in any other; hence, our governors, unstimulated by the intelligent and far-seeing amongst us, have, forgetful of the great principle of equalisation of conditions or privileges or laws, remained indifferent and even dormant. Abroad, especially among our Teutonic neighbours, activity to preserve and extend national, racial, and political advantages and resources has been prominent. Naturally studious and logical as well as philosophical, they relinquished at once their tight grip on the old and undeniably useful classical educational methods; elasticity and adaptability (comparatively unknown even now in our educational methods) became the rule. No means were left untried to meet modern exigencies and conditions, and not the least factor in forwarding them was the open-handed generosity of the British manufacturer. Anyone, the more a foreigner the better, was permitted to visit and to have explained to him our manufactures, machinery, and processes. No one dreamed of harmful results, nor even from their admission in our factories, as assistants in various ways, of foreign youths or young scientific men. All this was very well, and very "free" under equal terms and conditions. What were we doing all this time? Were our capitalists "scrapping" the effete, the useless or the inferior? Were their sons apprehending the signs of the times and the new conditions? Did they go abroad even, to acquire languages as yet not properly taught at home, much more to learn methods of minuteness and painstaking? Did they—do they now, in face of the most serious facts of commercial history, relinquish an iota of zeal for amusement, emotional or physical? It is the fashion to decry our educational methods; it is too true to declare that there is none or little method or organisation (co-ordination, it is politely termed) in them, but there are opportunities and to spare, cheap beyond desire or dessert, for seriously-disposed aspirants for efficiency. Advertisements of them are flaunted on every railway-platform, hoarding, municipal and otherwise, and just now every newspaper invites the possessor of a halfpenny to pause for one brief moment for the consideration of the sources for the acquisition of knowledge. Opportunities galore! cheapness galore! And by whom? By Ph.D.'s of the later fifties and D.Sc.'s of the later twenties. The while our Imperial Government overlooks its duties and its opportunities. Yet, were education methods completed and co-ordinated, the results would be, in great measure, stultified by the simple fact that our patent laws are really of greater benefit to our determined opponents than to ourselves.

Free Trade within the Empire.

The latest improvement as to compulsory licences for patents taken out by foreigners is a poor and cumbersome concession to modern and just efficiency. Even our children, Canada and Australia, see the folly of unlimited freedom for the foreigner (defining in that connection the Britisher as a foreigner), and have made early compulsory working of patents a *sine quâ non.* Other comparisons illustrate the unnatural condition of "equalisation" (not quality), but our point is that Free Trade is as yet an idea, and it must be universal, even to allow of the natural ebb and flow of terrestrial conditions. Failing it, Reciprocity—or, by the new, ugly political name, Retaliation—is perhaps the only method, humanly speaking, by which some approach to equalisation may be obtained. One's study of the increasing volume of sense (and nonsense) on the fiscal question lately published, leads one to the conclusion that there must be an instrument of bargain so that free-er trade all round may result. The nearest approach to the ideal, so far as one sees now, is Free Trade within the Empire, *within every part of it.* Its "bigness" might produce so "big" an argument in favour of the ideal that universal Free Trade might speedily follow. But, really, where is the evidence of the desire for the ideal within the Empire? All we have heard of is "Preference" and an all-round determination to hold on to tariffs for Revenue purposes, and, candidly, for the protection of existing or developing manufactures and the encouragement of new ones, which is precisely the policy of our continental rivals. Logically, therefore, in principle, things will not be essentially improved by the proposed methods. Has it occurred to many what will happen under a merely modified protective system (for that is all that would result on the now proposed lines) when Canada and Australia can send its manufactures here? when South Africa makes other and inevitable developments? Will not the "dumping" be then from *within* as it is from *without?* Is it not logical to assume that we in Great Britain will be little better off unless Free Trade within the Empire exists, and better still, but still more remote, when "Universal" Free Trade exists? Much has been said and written as to the balance (against us) of trade—the excess of imports. As yet one has not observed a complete or even satisfactory explanation of this ever-widening balance. Figures are said "to prove anything." This is true of the way similar figures are viewed in this fiscal question. There is the fact of diminishing production and consequent displacement of labour. On this latter point it is clear that there must be a complete change in the attitude of labour, individually and collectively, towards production. Its attitude must, primarily, be one of obedience and discipline; moral and mental restraint individually; collectively, indomitable energy and steady industry, and an apprehension of the progressive character of all applied and scientific technology. Thus will the capitalist be encouraged in enterprise and compelled to do adequate justice in his relations with the producer. Freedom of contract between men is a corollary of Free Trade or Free-er Trade or Reciprocity, or even of Retaliation, since no one can retaliate by inferior means or with inferior or obsolete tools. People are apt to forget the agrarian question. We, as well as the Germans, have an agrarian question party. Yet, where are the scientific farmers, stock raisers, fruit-growers, bee-keepers, flower gardeners, arboriculturists? Are ours doing a tithe of what can be done?

The Duty of the State.

These considerations lead to that quasi-socialistic question of the relation of the State to commerce. The State should be the father (or fairy godmother, if you will) of its people. It can only be so by having sympathetic, widely-educated, and business men as governors. Can this be said of any Government of recent years, or even of the permanent officials of the most honest and unimpeachable civil service in the world? Their training is on the graduated lines of precedent—that curse of modern progress and adaptability. Only the outbursts of popular outcry affect its calm, or the aggrieved howl of vested and oppressed interests, or, happily, maybe, the determined inspiration of some Minister, will effect any change. And that complete! Oh, no! compromise, concession, bargain! Note, for instance, the land question in its relation to the development of the railway system, making the very prospect of acquisition by the State for the equalisation of freights, etc., to the continental level an impossibility; the conservation of our natural resources, such as coal, for the national advantage; the freeing of our canals and waterways from monopolistic control; the important and impending question of an approaching duty-free alcohol for manufacturing purposes only (not prescribing purposes, nor those wherein the alcohol remains potable, however disguised medicinally or pharmaceutically). This has been rightly stopped in Germany. On some grounds the differential duty of five per proof gallon is defensible, but it is not defensible in the mouths of the distillers as an argument for dear British alcohol. By every principle of

Free Trade and free competition let the British distiller, with the resources of the world, in the shape of untaxed (or rebated) amylaceous materials, be allowed to produce the most, and the best, from the best plant by the best scientific methods, and with the least possible control and restriction for Revenue and moral purposes by the Executive, as in Germany and France. There is usually an exception to every rule, and, as regards alcohol, there must be control as regards popular consumption; but for technical consumption there should be the least possible restrictions and the greatest facilities! 'Tis done, therefore can be done.

The Ideal Free Trade.

To-day, it is said, there is over-production of alcohol by British distillers. So much the greater reason for increasing its freer use within the Empire! What an absurdity that the British distiller does not make pure absolute alcohol, nor is a manufacturer allowed to do so. The taxation of the means of living and of any raw materials for manufactures is broadly inadmissible in principle. The taxation of manufactured or semi-manufactured imported goods is a debatable question, debatable so long as our artisans are untrained and inflexible; debatable so long as our employers, managers, and technical assistants are inefficiently equipped with knowledge; and debatable so long as our laws in various directions actually create preference for the foreigner. Correct, modify, or eliminate these, and the necessary conditions for equalisation may exist, and the inevitable consequences of more equal competition and less need for either Reciprocity or Retaliation results, and a measurable approach to the ideal of Free Trade is made possible. Free Trade has never existed, does not now exist. Fair Trade or Reciprocity is admissible or probable so long as conditions are radically unequal, as at present. Therefore, Free Trade Within the Empire is the only solution of present difficulties, and then only as a step towards Universal Free Trade. "The earth is the Lord's and the fulness thereof" is the motto over the façade of the Royal Exchange, and it means, translated into terms of modern needs, "Free Trade," real and not one-sided.

GROCERS AND THE MEDICINE STAMP DIFFICULTY.

A CHAT WITH MR. GILES.

From the fourth storey of one of the buildings in the busy thoroughfare, Eastcheap, the interests of over 13,000 grocers are watched and guarded. It is here that are situated the offices of the Federation of Grocers' Associations, and it was to these offices that a representative of *The Pharmaceutical Journal* paid a recent visit, with the object of learning the views of the Secretary on one of the great questions of the moment. Mr. Giles, it goes without saying, understands exactly the present position of grocers with regard to the Medicine Stamp Acts, and realises the difficulties unqualified retailers have to face. It is well for these latter that they have such a man as he to look after their privileges; and it might be better for chemists had the Federation a less energetic Secretary. Mr. Giles is an old journalist, and he therefore knew how to assist an interviewer; his views can be best expressed in his own words. The answer to the first obvious question was as follows:—

"If the Board of Inland Revenue adheres to its decision and enforces the payment of duty on compounded medicines recommended for the cure of ailments, it will be a very serious matter for the grocers, more especially for the smaller traders in provincial towns and villages. But, of course, it is the manufacturers who will be most seriously affected, and as you will understand, they are doing their best to overcome the difficulty."

"You say, if the Board adheres to its decision. Have you any reason to suppose it will not?" was the question which suggested itself.

"Well, I can say this much," returned Mr. Giles; "no Government department deals more fairly with traders than does the Board of Inland Revenue. The fact that authorities have deferred all action in the matter until the New Year not only shows their fairness, but I feel sure this interval has been granted in order that

These Difficult Questions

may be threshed out between the retailer and the manufacturers. You must remember that the first thing a Government department considers is the convenience of the public and not the welfare of any particular class."

"But the Board of Inland Revenue does not make the law, it only administers it."

"Quite so; but the question the Inland Revenue has to decide is how far the decision in the Farmer *v.* Glyn-Jones' case carries them in insisting that the chemist shall have certain privileges which are denied to the grocer; and if the authorities consider it necessary to enforce to such an extent the provisions of an Act passed in the reign of King George III.—nearly a century ago, it will be for the Government to decide how far this is in the public interest."

"You mean, then, in such a case you would endeavour to procure fresh legislation?" queried the Journal representative.

"Naturally," returned Mr. Giles; "but I do not for a moment think such a step will be necessary. I cannot disclose to you what action we are taking in the matter, but you may depend on it the interests of the grocer are being well looked after."

Despite his hope that new legislation would not be necessary, the Secretary of the Grocers' Federation seemed to place

Unusual Confidence

in the Government as the great court of appeal where public grievances were bound to be rectified. Moreover, he appeared to consider that the more "unreasonable the privileges granted to chemists became" (the words are his) the more certain it was that the Government would step in and rectify by Act of Parliament "these little anomalies which had crept into legislative measures" (these words are also his).

"Now there was the Piper case," proceeded the grocers' champion.

"The Piper case," interrupted the interviewer; "but surely Mr. Giles, the grocers have forgotten all about the Piper case; why all that happened eleven years ago!"

"Oh, no," resumed Mr. Giles, "they have not forgotten it nor have they forgiven the Pharmaceutical Society, which made them spend a lot of money—"Mind you," he hastened to add parenthetically, "I have a great respect for the Pharmaceutical Society, and it doubtless acted in the interests of its own members—but we considered it an unreasonable decision, and it was not the grocer but the public who suffered the most in consequence of it."

It will be remembered that by the High Court decision in question, it was held that the exemption in the Pharmacy Act referring to patent medicines only applied to remedies actually patented; thus proprietary articles, commonly known as patent medicines, were not included in the exemption.

"The effect of this can be easily realised," continued the Secretary, after this brief reminder; "there are hundreds of villages where no chemist exists, and the villagers are obliged to travel four or six miles in order to get a bottle of a proprietary medicine which happens to contain an infinitesimal dose of a scheduled poison."

"But what in the world," queried the perplexed interviewer, "has all this to do with the Medicine Stamp Acts"?

"Why, can't you see the connection?" explained the patient Mr. Giles, "if this other hundred-year-old 'exemption' is going to be restricted to chemists, these same villagers will have to travel the same four or six miles to get a pennyworth of cough drops; why no Government would tolerate such an anomaly."

And (the interview ended) as our representative once more descended into the busy streets of Eastcheap, so concerned was he about the poor benighted villagers, and so fully persuaded was he that the next election would be fought on this question, that the legend on newspaper placards—the Cabinet Crisis—seemed already to read "The Cough Drop Crisis."

PLYMOUTH, DEVONPORT, STONEHOUSE AND DISTRICT CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Thursday, September 24, 1903, at 7, Whimple Street, Plymouth, the President, Mr. J. Davy Turney, in the chair.

Presentation to the Senior Bell Scholar.

The Chairman said it was well known that the Association had always taken the greatest interest in the junior members, and for some years classes had been held in pharmaceutical subjects. Latterly it had been found impracticable to continue the work, but it was most gratifying that one member, Mr. J. M. Treneer, had gained the Senior Bell Scholarship. It was the first time since the Association had been formed that anyone in Plymouth had gained this distinction. It was not, however, the first time that an apprentice trained in Plymouth had won a Bell Scholarship, for Mr. F. Short had some time ago obtained this prize, but that was before the local Association had existed. He now had the greatest pleasure, on behalf of the Association, in congratulating Mr. Treneer, and in handing him a cheque for £10, the reward offered some years ago to any member winning the scholarship. Mr. Turney added that Mr. Treneer had received his training in pharmacy in Plymouth, having served his apprenticeship to Messrs. R. and F. Roper, and attended the classes formed by Messrs. Reade and Johnson.

Mr. Roper referred to the exemplary way in which Mr. Treneer had always performed his duties.

Mr. Treneer said he deeply appreciated their reward apart from the monetary value. It was the first time such a prize had been offered by a local association, and he thought it would be an inducement to students if the example were followed by other societies. He attributed his success to Mr. Roper, who had advised him to enter for the competition, and had given him opportunities for carrying out the work.

Divisional Secretary.

Mr. Roper said his year of office had now expired. His view was that the appointment should be an annual one, and that every member should in turn pass through the office of Divisional Secretary.

Mr. Kelly, Mr. Maitland, and Mr. Cocks thought that the appointment should be held for at least two years, but Mr. Roper said he wished to create a precedent, and would call a meeting of all the members of the Pharmaceutical Society in the division, when another name would be submitted.

Vote of Sympathy.

Mr. Park proposed, and Mr. Hunt seconded, that a letter be sent expressing sympathy with Mr. J. Maurice in his recent illness. This was unanimously agreed to.

Grant from the Benevolent Fund.

Mr. Park mentioned a case where the Benevolent Fund had been of material assistance to the widow of a local chemist, but there was one phase he should like to bring before the members, and that was with regard to the children. Had the man only been a subscriber to the Benevolent Fund, the Pharmaceutical Society would have been able to grant assistance from the Orphan Fund.

Other Business.

It was stated that the annual dinner would probably take place in November.

The Secretary read a letter from Dr. Frank Bushnell, stating that he would deliver a course of lectures on Bacteriology at the Technical Schools, and inviting chemists to attend. Appreciation of such classes was expressed, but the feeling of the meeting was that a more convenient hour than had been arranged would ensure a better attendance.

BARNSLEY AND DISTRICT CHEMISTS' ASSOCIATION.

FIRST MEETING OF THE SESSION.

Thursday, September 24, 1903, at the Royal Hotel, Barnsley, the President, Mr. J. B. Ellisson, in the chair.

The West Riding Federation.

A communication was read from Mr. R. Broadhead, Hon. Secretary of the Federation of West Riding Chemists' Associations, in which the writer suggested that the rules of the Federation should be thoroughly overhauled by the Council or a small committee.

Mr. Billington suggested that the Hon. Sec. be instructed to write Mr. Broadhead suggesting that the rules be printed in their present form and copies sent to members of the Council before the next meeting.

Mr. W. Rigby said so far the greater part of the time of the Federation meetings had been taken up in the discussion of the rules. In his opinion far too much quibbling had taken place over small details in connection with them—as to whether this or that word would or would not sound better. If the members of the Federation had been furnished with a printed copy of the rules, as drafted by the Council, at the meeting called to confirm them, much trouble and waste of time would have been averted.

Eventually Mr. Billington's suggestion was adopted.

The Compendium of Medicines.

A circular was read from the Pharmaceutical Society in reference to the Compendium of Medicines now in course of compilation, and it was agreed to leave the sending of formulæ to the individual members of the Association.

Mr. J. P. Norwood proposed, and Mr. G. A. Pickering seconded, the following resolution, which was adopted:—

> That this meeting of the B. and D.C.A. express their hearty thanks to the Pharmaceutical Society for their activity in compiling a Compendium of Medicines, for the use of chemists and druggists, in conformity with the new medicine stamp regulations.

Divisional Secretaries.

A circular from the Pharmaceutical Society was read in reference to the election of Divisional Secretaries. Mr. W. Rigby for Barnsley and Mr. J. P. Norwood for Hallamshire were unanimously recommended for re-election.

Sale of Drugs by Unqualified Dealers.

Mr. J. P. Norwood stated there was a law in force whereby persons other than chemists and druggists, physicians and apothecaries were precluded from selling medicines such as tincture of rhubarb, sweet nitre, or other spirituous preparations.

The President thought if this was the case some action should be taken in the matter, and he moved a resolution instructing delegates to the next Federation meeting to bring the question forward.

Mr. J. P. Norwood seconded the resolution, which was adopted.

Several members spoke upon the medicine stamp regulations, but the general feeling was that it would be wise to maintain a passive attitude for the present, the new regulations being looked upon as an advantage to chemists.

Appointments.

Messrs. H. B. Billington and W. Rigby were re-elected to represent the Association on the Council of the Federation of West Riding Chemists' Associations. Messrs. J. W. Moorhouse and E. Nash were elected as delegates to the next meeting of the Federation.

EXETER ASSOCIATION OF CHEMISTS AND DRUGGISTS.

ORDINARY MEETING.

Tuesday, September 28, 1903, at the residence of the President (Mr. F. W. Vinden).

The Late Mr. Stocker.

The President moved a vote of condolence to the widow and family of the late Mr. George Stocker.

Mr. Rowsell seconded the resolution, which was agreed to.

Mr. F. Sloman, who has succeeded Mr. Stocker in business, was elected a member of the Association.

Other Business.

An interesting discussion took place on the proceedings of the Bristol Conference, and the value of these conferences to the members of the profession in general. The question of the administration of the Medicine Stamp Acts was also discussed, and the opinion was expressed that the law would benefit the chemists very much if chemists not only tried to carry it out, but endeavoured to prevent anybody but chemists from selling articles affected by the Acts.

NORTH-EAST LANCASHIRE CHEMISTS' ASSOCIATION

SPECIAL GENERAL MEETING.

Monday, September 28, 1903, at the White Bull Hotel, Blackburn, Mr. Councillor Critchley in the chair. In the absence of Mr. Pickworth (who has retired from the secretaryship through illness), Mr. Jos. Hindle, Secretary *pro tem.*, read correspondence which had accumulated

Educational.

A long conversation took place on the action of the Technical School Committee in refusing to grant any facilities for teaching of materia medica, Latin, and pharmacy, unless the Association would provide teacher, specimens, and materials free of all cost to the school, but at the same time the Technical School Committee must take all fees paid by the students. It was resolved that a letter be sent to the Secondary Education Committee strongly protesting against their action.

Divisional Secretary.

A report from the Divisional Secretary (Mr. Gifford) was then read, which gave an interesting account of the work of the Pharmaceutical Society in the district, and urged members to keep more in touch with the Society through the Divisional Secretary. The members of the Association were recommended again to nominate Mr. Gifford for Divisional Secretary.

Pharmacy Legislation.

The rest of the evening was spent in an informal conversation on the Pharmacy Bill, and it was generally thought that the Bill, as introduced into Parliament last session, will have no chance of becoming law, and even if it did the benefits to individual pharmacists would scarcely be appreciable. It was thought far preferable to abandon the Bill, and introduce another into Parliament, simply restricting the title of "chemist and druggist" to the individual only, abandoning the Widow's Clause of the 1868 Bill if necessary.

Arrangements were made for the annual meeting on October 14, and a sub-committee, consisting of Messrs. Holt, Gifford, and Hindle, appointed to arrange the business for that meeting.

LONDON CHEMISTS' ASSOCIATION.

GENERAL PURPOSES COMMITTEE.

Wednesday, September 30, 1903, at the Holborn Viaduct Hotel, Mr. F. W. Truman, Chairman of the South London Branch, in the chair.

Mr. R. B. Betty read the minutes of the previous meeting.

Resignation of the Secretary.

The Chairman read a letter from Mr. R. H. Jones, Hon. Secretary of the Association, tendering his resignation, private matters making it impossible for him to continue to hold office.

Several members expressed their deep regret that the Association was about to lose the services of so valuable an officer as Mr. Jones had been.

The resignation of Mr. Jones was accepted with regret, and it was decided that a letter of thanks be sent to him acknowledging the enormous amount of work that he has done on behalf of the Association.

Vote of Condolence.

On the motion of Mr. Pentney, a vote of condolence with Mr. Albert Cooper, Chairman of the Committee, whose wife died recently, was passed.

The B.P.C. and the Federation.

Mr. W. Watson Will, as one of the delegates to the British Pharmaceutical Conference at Bristol, and subsequent Federation meeting there, reported that the meetings passed off very successfully. There was one point, however, which required attention, viz., that the time allowed for discussion of papers read before the Federation was very inadequate. He thought there ought to be at least two days for the Federation meetings.

Mr. Betty also reported, and stated that at the next meeting of the Association he should propose that the Federation should hold two general meetings annually—one on the morning after the Conference, and another on the afternoon of the annual meeting of the Pharmaceutical Society.

Election of Officers.

The following officers were then elected:—President, T. H. W. Idris; Vice-Presidents, W. S. Glyn-Jones and R. H. Jones; Chairman of the General Purposes Committee, Albert Cooper; Vice-Chairman, J. C. Umney; Hon. Treasurer, G. P. Pond; Hon. Secretary, R. B. Betty, 1, Park Street, Camden Town, N.W.

Mr. Betty, in acknowledging the honour done him, suggested that, as the work of the Secretary was very great, it would be advisable to appoint a paid canvasser for the Association.

It was decided that the matter be brought up at the next meeting.

Election of an Honorary Member.

On the motion of Mr. Betty, Mr. S. R. Atkins, President of the Pharmaceutical Society, was elected an hon. member of the Association.

The Proposed Compendium of Medicines.

The Secretary read a letter from Mr. Bremridge, Secretary of the Pharmaceutical Society, concerning the proposed

Compendium of Medicines, and after some discussion it was left to individual members of the Association to send up any formulæ they think proper.

The Next General Meeting.

It was decided to hold the next general meeting on the second Wednesday in November, at the Holborn Viaduct Hotel, at 3.30 p.m., and Mr. **Pond** gave notice that he should bring forward the subject of "Federation."

A vote of thanks to Mr. Truman for his services in the chair concluded the business of the meeting.

MEETING OF CHEMISTS AT GREENOCK.

Wednesday, September 23, 1903, in the Temperance Institute, Greenock, Mr. A. **M'Naught** in the chair.

Appointments.

On the principle that local chemists should give some assistance in the selection of local representatives for the Pharmaceutical Society and other organised bodies, it was unanimously agreed to recommend the following gentlemen for appointment to office:—(1) Pharmaceutical Society Divisional Secretary, Mr. A. M'Naught; (2) P.A.T.A. Local Secretary, Mr. J. M'K. Farquhar; (3) Glasgow and West of Scotland Chemists' Trade Association Council, Mr. J. Anderson Russell.

A committee was appointed to deal with the question of "local prices," and another to watch over the interests of chemists in view of an approaching parliamentary election. It was considered the aim of the latter should be to gain from candidates sympathetic recognition of the claims of chemists to the practice of pharmacy, and a pledge of support to these claims in a genuine Pharmacy Bill.

Early Closing.

On the subject of chemists' closing hours, it was the unanimous opinion that an effort should be made to secure a uniform and reasonably early hour for closing, and a committee was entrusted to see what could be accomplished in that direction.

FALKIRK AND DISTRICT CHEMISTS.

DINNER AT FALKIRK.

Thursday, September 24, 1903, in the Crown Hotel, Falkirk, Mr. **James Baxter**, Grangemouth, in the chair. Mr. Robert Sinclair, Falkirk, officiated as croupier.

The **Chairman** referred to the phenomenal growth of Falkirk, and said he remembered the time when the demands of the district were supplied by three chemists. Now there were nearly a score in and around Falkirk. He commented with gratification upon the presence of several medical gentlemen that evening. That was their first social gathering, and he hoped it would be the first of a long series of annual meetings.

The Medical Profession and the Drug Trade

was proposed by Mr. W. T. **Varley**, and acknowledged by Dr. **Stewart**, Falkirk, and Mr. **Thos. Lyon**, Falkirk, Divisional Secretary of the Pharmaceutical Society.

An interesting feature of the proceedings was the presentation of prizes to Dr Smith, Falkirk, and Mr. Jas. MacNiven, Grahamston, winners of the bowling competition instituted this year. The donor, Mr. **Greig**, in handing over the prizes, said that the competition had arisen out of a conversation he had had with an energetic member of the drug trade, Mr. J. W. Bennie, Polmont. Mr. Bennie had acted as Hon. Secretary of the competition, and it was also due to his tact and skill that they were met that evening in a social capacity.

Other toasts included "The Donor," by Mr. R. **Gordon Drummond**, Falkirk; "Bowling Clubs of the District," by Dr. **Smith**, reply Mr. **Varley**; "Our Guests," by Mr. **Robert Sinclair**, reply Dr. **Brown**, Camelon; and "The Hon. Secretary," by Mr. **James MacNiven**. The toast list was varied by vocal and instrumental music.

HARTLEPOOLS AND DISTRICT CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Monday, September 28, 1903, at 26, Church Street, West Hartlepool, Alderman **Thos. Clarkson**, J.P., in the chair. A letter was considered from the Secretary of the Pharmaceutical Society, in reference to the compendium of formulæ. After a short discussion, it was left to individual members to act as they thought best.

The Sale of Poisons.

A discussion next took place in reference to the supplying of any lotions, liniments, or other preparations of a poisonous nature, and to bring about entire uniformity amongst the members of the Association; it was resolved, "That no outward applications containing a scheduled poison be supplied in other than distinct poison bottles"; and "That nothing whatever be supplied in beer or mineral water bottles."

Scales and Weights.

Mr. G. A. **Watt** referred to the stamping of dispensing and general scales and weights, and proposed the following resolution:—

> That the Secretary write to Messrs. W. and S. Avery, Limited, as to terms upon which they would inspect and adjust all scales and weights belonging to all members of the Association at least twice a year, including both general and dispensing scales, etc.

This was seconded by Mr. G. S. **Gibson**, and carried unanimously.

Divisional Secretary.

The **Chairman** next mentioned that he had received a letter from the Pharmaceutical Society, relative to the election of Divisional Secretary.

The **Secretary** (Mr. A. Timmins) said that the present Divisional Secretary, Alderman J. Horsley, Hartlepool, did not wish to continue in the office.

Mr. G. A. **Watt** proposed, and Mr. G. S. **Gibson** seconded, "That all members of the Society nominate Alderman Thomas Clarkson, West Hartlepool, for the office of Divisional Secretary." Carried unanimously.

Trade Questions.

Proprietary articles and protected prices was the next item on the agenda, and, after a brief discussion, the Secretary was requested to write to several manufacturers, urging upon them the importance of protecting prices.

The Secretary was asked to obtain all the information he could on the subject of Co-operative Buying and bring it before a future meeting for discussion.

It was proposed that a smoking concert in connection with the Association should be held on Wednesday, November 11, and arrangements for same were left to the Secretary.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

RE-OPENING OF THE SCHOOL OF PHARMACY.

On Thursday, October 1, 1903, the inaugural proceedings in connection with the re-opening of the School of Pharmacy took place in the Lecture Theatre at 17, Bloomsbury Square, London, the President, Mr. S. R. Atkins, J.P., in the chair. There was a good attendance of members, students, and visitors.

The President, in opening the proceedings, mentioned that Mr. Bremridge, much to his own regret, and the regret of those present, was, through indisposition, unable to leave his room. Mr. Walter Hills was also unable to be present, Mr. Robinson had an engagement elsewhere, while Mr. N. H. Martin, of Newcastle-on-Tyne, wrote an enthusiastic letter, in which he wished to be remembered to his distinguished townsman. Mr. Storrar, Mr. Maben, and others had also written expressing regret at being unable to be present.

Professor Greenish, Dean of the School, who was called upon by the President, reminded the meeting that the formal report of the School was presented at a meeting of the Society, held at the close of the session 1902-3, and he was glad to be able to say that the report was a very favourable one. Since that time there had been, of course, the vacation, which he distinguished from holiday because vacation was a time when the professors worked for themselves, while holiday time was when they did not work. He had no report to offer concerning the School, but he should like to refer to the distinctions which had been gained by past students of the School between the end of July and the present time. Mr. Ernest Goulding had taken the D.Sc. degree of London University, which was the highest distinction a man could attain to, and they were all proud of him. The same honour in botany had also been attained, by hard and persistent work, by the demonstrator of botany, Mr. Eric Drabble. Then the assistant lecturer in chemistry, Mr. T. E. Wallis, had been successful in passing the examination for the Associateship of the Institute of Chemistry. Miss Hooper, a past-student of the School, and at present working in the Research Laboratory, had been successful in passing the Intermediate Science Examination, while Mr. J. Stuart Hills and Mr. C. E. Male, past students of the School, had passed the Intermediate Examination of the Institute of Chemistry. Mr. Perrédès, also a past student, had been awarded a prize in the United States for excellence of work in histology. He thought that was a record of which they might be proud; he was sorry, however, that the meeting was being held that afternoon instead of about three weeks later, because then there would probably be additions to the list of successful students. Then there was another indication that the spirit of scientific investigation and the desire for knowledge, for the sake of knowledge, which the School staff endeavoured to impart to the students, had borne fruit, viz., that out of twenty-three papers read before the British Pharmaceutical Conference—papers involving, in many cases, much original research and long investigation—sixteen were read, either alone or in collaboration with others, by men who had been educated in the School of Pharmacy. He thought that was a very good indication that the students in the School not only received a very thorough education, but had also imparted to them the spirit of research, which was at least somewhat akin to that which had done so much for science in Germany. Last session was a successful one, and the indications shown that morning seemed to point to an even more successful session to come.

Herbarium Competition.

Professor Green in reporting on the results of the Herbarium Competition, said that he was not always able to recommend so many awards as now; but this year the competition had been better than for many years. The quality of the herbaria had been very good. Though he could not recommend more than one silver medal, he thought a bronze medal should be awarded to the second candidate on the list. The awards were as follow:—

Silver Medal	Mr. Norman S. Goodyer, Sheffield.
Bronze Medal	Mr. C. G. Trinder, Cirencester.
Certificate	Mr. E. J. Thomson, Edinburgh.

Professor Green, continuing, said that the silver medallist had been a pupil of a gentleman who had recently occupied the Presidential chair of the Pharmaceutical Society.

The President, in handing the silver medal to Mr. Newsholme, who promised to convey the same to Mr. Goodyer, congratulated both gentlemen. He would add that he knew that the herbarium was well worthy of careful study.

Mr. Newsholme expressed himself as very proud to take charge of the medal.

Mr. Flux, Solicitor to the Society, as a Cirencester man, volunteered to take charge of the bronze medal on behalf of Mr. Trinder.

Jacob Bell and Manchester Scholarships.

Mr. Edmund White, in reporting upon the examinations for the above scholarships, said:—

> I have to report that twenty-six candidates competed for the Jacob Bell Scholarships at the examination held on June 16; twenty sat in London, three in Manchester, and three in Edinburgh. This is about the average number in recent years, and I am pleased to say that the competition was keen and indicated that a large proportion of the candidates realised the valuable nature of the prizes for which they were striving. The regulations require that successful competitors must obtain two-thirds of the maximum number of marks, and no less than twelve of the twenty-six candidates attained this standard. The names of the gentlemen occupying first and second places on the list, and to whom the scholarships have been awarded, are:—
>
> Joseph Maurice Treneer, of St. Austell, and George Marie J. Cole, of Reading.
>
> The mottoes of the remaining ten candidates who obtained marks qualifying for the Scholarships, arranged in order of merit, are:—
>
> "Silex."
> "Usque Conabor."
> "Finis Laborum."
> "En Avant."
> "Salicine."
> "Avance Sans Peur."
> "Labor Omnia Vincit" (No. 2).
> "Maestus."
> Tied { "Fiat Lux."
> { "Labor Omnia Vincit" (No. 1).
>
> These candidates are to be congratulated on the merit of their work, but, unfortunately, there are only two scholarships available. Nevertheless, I can assure them that their work for the Scholarship Examination will form a solid foundation for the more extended knowledge which they will be expected to acquire when presenting themselves for the Minor and Major Examinations.
>
> For the Manchester Scholarship only one candidate appeared. Having attained the necessary standard of

> marks qualifying for the Scholarship, it is therefore awarded to him. His name is George Naylor, of Kensington.
>
> It is a matter of surprise and regret that this Scholarship attracts so few candidates, year after year.

Before concluding, Mr. White said: — I should like to revert to the conditions of the examination upon the results of which these scholarships are awarded. When the present regulations were framed, some years ago, the Preliminary Examination for pharmaceutical students was recognised as inadequate to secure that every competitor should have acquired a sufficiently good general education to enable him to avail himself of the technical and scientific education which the scholarships afford. Consequently the proportion of marks awarded to the arts subjects in the examination was high compared with those for the scientific and technical side. Now that the preliminary examination standard has been considerably raised I think one may assume that every competitor for the scholarships has attained the necessary educational standard, and that the existing regulations might advantageously be reconsidered. I cannot help feeling that many desirable candidates do not enter their names for the competition because of the difficulties they encounter in maintaining their knowledge of the arts subjects during the years of apprenticeship at a sufficiently high level for a competitive examination. It also gives a great advantage to those students who have means and opportunity for specially coaching in those subjects; while it places at a disadvantage the student who, though diligent and attentive to his technical studies, is unable to do this. Given, however, that the present preliminary requirements are sufficient to ensure a sufficiently high standard of general education, I think the regulations might be modified to encourage the latter class of student. I do not propose here to go into any details of such modification, but I should like to take the present opportunity of raising the question for the consideration of the Council and the Boards of Examiners.

The President said that he was obliged to Mr. White for his remarks. The scholarships, he said, were founded in memory of Jacob Bell, a name to conjure with in that house. Jacob Bell was practically the founder of the Pharmaceutical Society. He was a man who, in the most altruistic spirit, gave himself up to defend the rights of chemists and druggists when those rights were seriously threatened by a proposed Bill. In the history of pharmacy nothing was nobler than the self-sacrifice of Jacob Bell. A patron of arts, and a man of great literary power, Bell gave himself up, in the spirit of true nobility, to defend the rights of his humbler brethren. He remembered being taken to Bell's house in Langham Place, where he saw several priceless works of art, six of which were now in the national collections. The scholarships were of the total value of £30 each. Addressing the scholars, the President said that they had done well, and it was an earnest of what they would do in the future. He was confident that, in the School and afterwards, they would make the position of a Bell Scholarship greatly to be envied. In presenting the Manchester Scholarship, the President said that if Mr. Naylor was able to beat all the students of Lancashire, Cheshire, and the High Peak Division of Derbyshire, he was necessarily a strong man. He was glad that, though it was open to Mr. Naylor to take his education elsewhere, that gentleman had decided to come to the School of Pharmacy.

The Pereira Medal.

Mr. Chater, on behalf of the Secretary, stated that the examiners who conducted the Pereira Medal and Council Prizes Competition, viz., Professor Bower, Professor John Gibson, and Mr. Martin Meldrum, reported that thirteen candidates entered for the competition and were examined. Only two, however, obtained more than the requisite number of marks entitling them to the awards offered by the Council. There were no features of special interest in connection with this year's competition beyond the fact that the papers given in by the two successful competitors showed a very marked superiority over those of the other eleven candidates. It may be noted that the number of entries is precisely the same as in 1902. The Pereira medal was awarded to

Mr. Alfred Norman Hirst, Nantwich.

A silver medal was awarded to

Mr. Edgar A. Jones, Ripley.

The President said the Pereira medal and books to the value of £5, the gift of the late Thomas Hyde Hills, had been awarded to Mr. A. Norman Hirst, of Nantwich, and he was extremely pleased that such was the result of the competition. He had the pleasure in June last of warmly and sincerely congratulating Mr. Hirst on the work he had done as one of the Bell Scholars and as a prizeman in the School. He (the President) was sure, judging from the past, that Mr. Norman Hirst was going to demonstrate to the Society and to others his fitness to receive the Pereira medal, which was often termed, and very correctly termed, the "blue ribbon of pharmacy." He would like to say one word in regard to Pereira. Of the three men whom they specially honoured that day, Pereira, Hanbury, and Bell—men who within fifty years, to be strictly accurate, forty-nine years, made their mark in pharmacy and the scientific world—he well remembered Pereira. He saw him on several occasions. He remembered being taken by the late Dr. Langdon Down to hear Pereira lecture on materia medica at the London Hospital, and on another occasion he went to see him at the London University, where he was acting as an examiner. Born in 1804, Pereira died in 1853, and two of their former professors, Bentley and Redwood, edited his great work, 'The Elements of Materia Medica and Pharmacy.' Faraday, the greatest physicist of his day, said that Pereira was a great light, and he marvelled at his genius. Pereira, in reply, said, "I have no genius, except that of work." He hoped the gentleman who took the medal that day would feel that he might well be proud in having his name associated with that of Pereira. When they looked at the list of distinguished men who had won the Pereira medal,—many of whom had passed away, and one of whom he noticed present—he thought they might well point Mr. Hirst to that list of great men, and ask him to be worthy of his distinguished position. The President then handed the medal and books to Mr. Hirst, and, in doing so, related a story of a man who, having made a fortune, wished to form a library. He therefore went to a bookseller and asked him to provide the necessary books. "Will you have them bound in Morocco or Russia?" asked the bookseller. "Neither," replied the man; "I will have them bound in Glasgow."

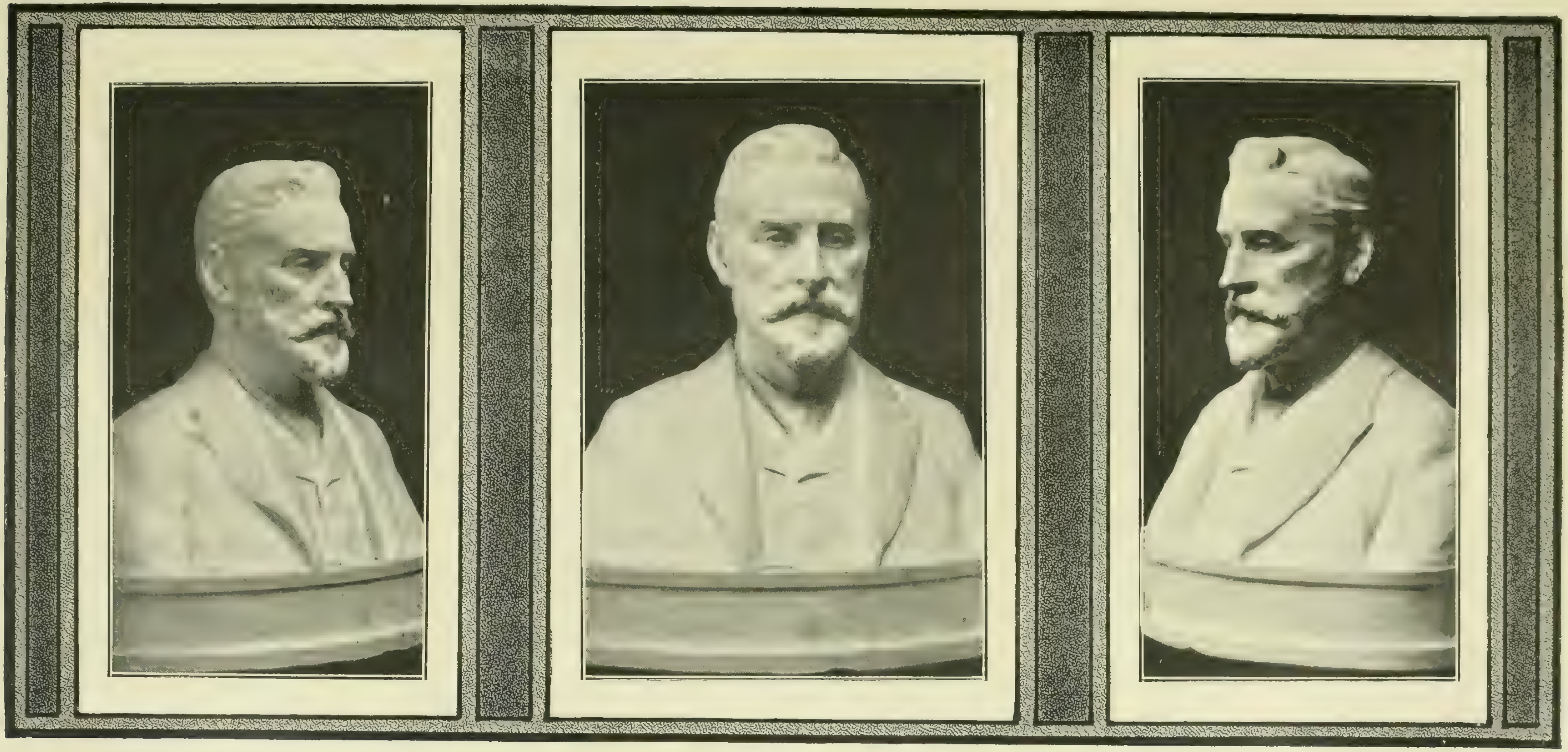
The Society's Silver Medal.

The President said the Society's silver medal had been awarded to Mr. Edgar A. Jones, residing at Ripley, in Derbyshire, but as he was not present to receive it, the Secretary would forward it on to him.

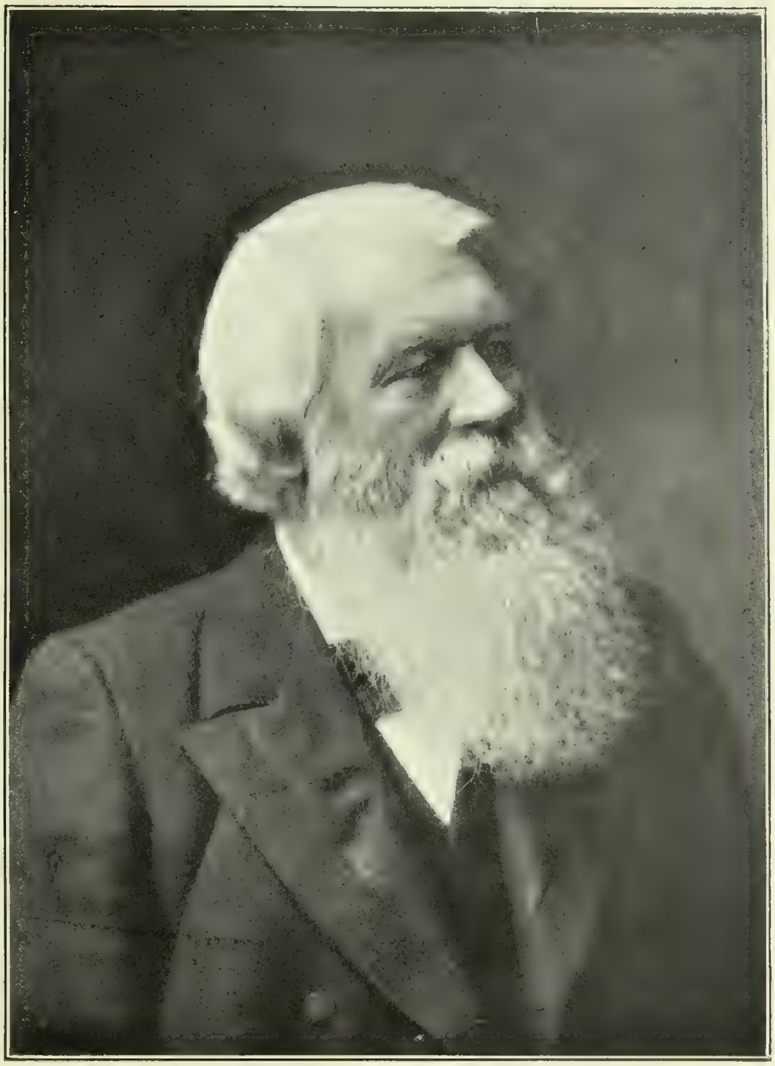
The Burroughs Scholarship.

The President said the Burroughs Scholarship had been awarded to a lady—Miss Elsie Hooper. This scholarship was founded in memory of the late Mr. Burroughs, and was awarded biennially, being worth £50. If Miss Hooper was present he should be very pleased to congratulate her and to shake hands with her.

As Miss Hooper came forward she was loudly cheered, and the President said:—Miss Hooper, evidently you are very popular, and I am pleased to be reminded that you were the Redwood Scholar, and now you are the Burroughs Scholar.



The William Martindale Memorial.



Joseph Wilson Swan, M.A., D.Sc., F.R.S.

The Salters Research Fellowship.

The President then announced that the Salters Research Fellowship had been awarded to Mr. J. Stuart Hills; and on Mr. Hills coming forward the President congratulated him, not only on having been awarded the Scholarship, but also because he had withstood the temptation of going with his comrades of the H.A.C. to the United States, in order to take up the work of the Salters Fellow in the Research Laboratory. It was work for which he was specially fitted, and, though he started with an enormous advantage—being the son of a much-respected member of the Council and a past-President—that was also an additional responsibility, to which, however, he (the President) was sure Mr. Hills would rise.

The Hanbury Gold Medal.

The President said he had next a most important and honourable duty to perform, and he was anxious to discharge that duty aright. Thackeray once said that all great occasions in life ought to have their rehearsals. This was an occasion which he felt ought to have been rehearsed. He had now to present the Hanbury gold medal, which had this year been awarded to Monsieur Eugène Collin. In the short time at his disposal it would be absolutely impossible to enumerate the distinguished work which this illustrious Frenchman had done. If he might use a popular description of his work, he would say that M. Collin was one of the first great workers in the microscopic examination of drugs, and in that work he was associated with Flückiger, whose name was greatly honoured in that house, and more recently M. Collin had been associated with the Dean of the School of Pharmacy, Professor Greenish. He had a long list of the scientific work of M. Collin (see *P.J.*, June 6, 1903, p. 786), but he need only mention that amongst other distinctions M. Collin was a Bachelor of Letters and of Science, a corresponding member of the Pharmaceutical Society of Great Britain, and a member of the Société de Pharmacie de Paris, and a corresponding member of the Pharmaceutical Societies of St. Petersburg, Brussels, Antwerp, and Turin. M. Collin had hoped to be present in person to receive the medal, but, largely on account of his devotion to work, night and day, without taking sufficient rest, he was indisposed, and was unable to be present. Personally, he (the President) had been looking forward to that day with a great deal of pleasure, and he deeply regretted that ill-health prevented M. Collin from coming to receive the medal, but his regret was somewhat lessened by the knowledge that a gentleman—Comte de Montholon—had come from the French Embassy to receive the medal on behalf of M. Collin. Turning to Comte de Montholon, the President said: I have very great pleasure in asking you to transmit to your illustrious countryman this beautiful medal. I say beautiful, for I had the pleasure of knowing the late Daniel Hanbury well, and I do say that that is an extremely beautiful reproduction of that most charming face. Hanbury was a nobleman whose work in pharmacology and materia medica is known throughout the world. We are honoured to-day by the presence of his brother, Sir Thomas Hanbury, and, I believe, Lady Hanbury. Now, Sir, I have the greatest satisfaction of informing this audience and of telling you that Sir Thomas Hanbury, within the last hour, has informed me that he wishes his name to be associated in the future with this medal in honour of his late brother, and he has told me to-day that he will hand at once to this Society securieties the value of which will be £25 a year, and as this medal is awarded biennially, the amount will be £50, which will be presented with the medal. Ladies and gentlemen, I do most warmly and earnestly on your behalf thank the generous giver of this amount—Sir Thomas Hanbury, we are very grateful to you.

The President then handed the medal to Comte de Montholon.

The Inaugural Address.

The President said he had the utmost satisfaction in calling upon Dr. Swan to address the students of the School of Pharmacy. Dr. Swan needed no introduction to that audience. Some years ago he (the President) met a Mr. Swan, of Paris, at Bruges. They wished to exchange cards, but Mr. Swan had not a card with him, and said, "Mr. Swan, of France, will find me." It might be said that "Dr. Swan, of Europe," would be sufficient identification of the lecturer.

Dr. Swan, on rising to deliver his address, which is printed at page 477, said: I confess that I did not fully realise the character of the audience that I was to stand before this afternoon, as I understood I was to address the students of the School of Pharmacy. Therefore, if I have to speak over the heads of a considerable proportion of the audience, I must be excused.

Vote of Thanks.

The Vice-President, in moving a hearty vote of thanks, said he felt that he spoke on behalf of every one of those who had listened to Dr. Swan's excellent address. Dr. Swan had begun by wondering whether he had struck the right note. If he (the speaker) were not mistaken, there was in the admirable poem to which allusion had been made another phrase which fitted the occasion: "Knowledge comes, but wisdom lingers." It was a great thing that those wise persons who had acquired knowledge should be willing to come and give advice to young men who were entering on their career. The address would bear reading in print over and over again. He urged all to give it earnest consideration. Dr. Swan had alluded to the Victorian era, and, indeed, in that era enormous progress had been made in the sciences. It was for Englishmen now to wake up and put themselves on a level with other nations. He again thanked Dr. Swan heartily for his very admirable address.

Mr. G. T. W. Newsholme, in seconding, said that they were all greatly indebted to Dr. Swan, and highly honoured. The address would be profitable even to those who were no longer students, but was especially valuable to students. While listening to the address, one could not fail to think of the conditions sixty years ago and to-day. In those days there was no football and no cricket. The students of to-day, with all their privileges, should be able to do far more work than the men of former days. He thought of all that Swan, Scheele, and Dalton had done without modern apparatus. In conclusion, he urged all students to avail themselves of their opportunities.

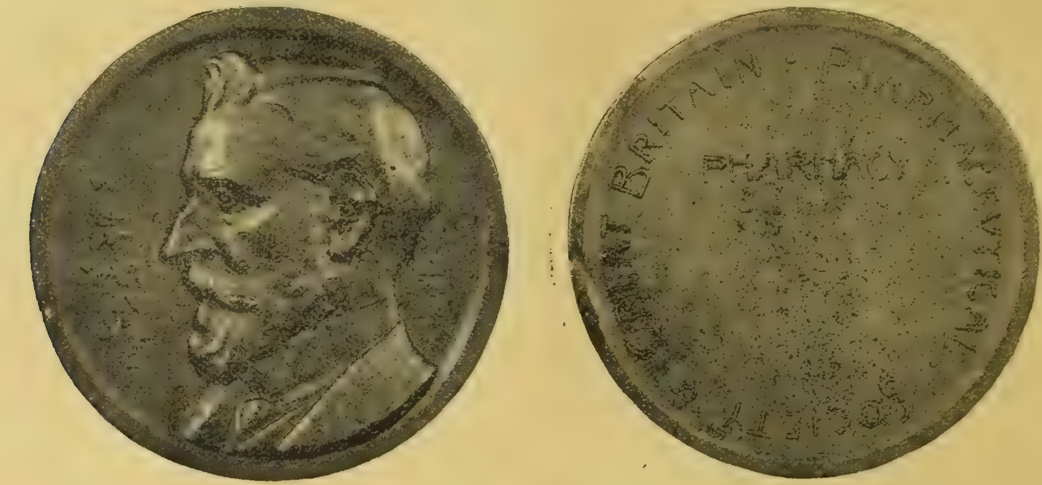
The President said he felt great pleasure in endorsing absolutely and completely the remarks made by the Vice-President and by Mr. Newsholme. Dr. Swan had conferred a very great honour on the Society in coming to address the students, and he had given them weighty words—words the result of long experience and of most careful observation. He therefore tendered to Dr. Swan, on behalf of those present, their most grateful thanks for his presence and address.

Dr. Swan, in reply, said: Mr. President, Ladies, and Gentlemen,—I assure you that I receive this vote of thanks with extreme pleasure. In fact, I may add to that by saying that the whole function has been a very great pleasure to me. I have had great pleasure in reading my address and very great pleasure in hearing the admirable remarks of the President on the history of the School. He told me details which I was really unacquainted with before, and has made me exceedingly glad that it is so flourishing, and is doing such excellent work. It is a pleasure to meet Sir Thomas Hanbury—it is an unexpected pleasure. Therefore, when Mr. Carteighe caught me in an unguarded moment, and gained from me a promise to come here this afternoon, he conferred upon me a pleasure for which I thank him, and, ladies and gentlemen, I thank you.

Mr. Carteighe then said: Mr. President, I have to ask you to be good enough to allow me to invite the audience to adjourn to the Examination Hall, where, at the request of the Martindale Memorial Committee, I wish to say a few words, and suggest something for your acceptance.

The Martindale Memorial.

Mr. Carteighe speaking as Treasurer of the Martindale Memorial Fund Committee, said that the fund had been subscribed to by numerous friends for a specific object. It was no secret to the President, though possibly it was not so well known to some of those present, that a little over a year ago a pharmacist of the same type as Barnard Proctor, a skilful manipulator and great enthusiast, died. His reputation was more widely known over all the civilised world than any other pharmacist. His personality was charming in every respect. He was not only a handsome man and a distinguished pharmacist, but a lovable man. It was, therefore, not surprising that when an appeal was made to the Colonies for funds to provide a memorial in the house of the Pharmaceutical Society, that appeal met with a ready response. The object of the Committee was not to collect a large sum, but to get something appropriate, that would keep his memory continuously before pharmacists. He recalled the close connection of William Martindale with the Society, not only as a member of the Council and as President, but also as an Examiner for ten years. The Committee decided that the most proper and fitting way of perpetuating his memory and of carrying out the wishes of the family was to place a marble bust in the room where their friend had been an Examiner. Also, with a view of stimulating manipulative pharmacy, which had a tendency in these days to lose much of its skill, it was felt desirable that a silver medal for proficiency in that subject should be presented annually. He asked the President to accept both the bust and the die for the medal as custodian. It was proposed that every year the most successful student in practical pharmacy at that School should be awarded the Martindale medal in silver. He would say that while collecting subscriptions he found that from all persons—great and small, prosperous or less wealthy—from each and all there was an expression of the kindliest feeling and regard for Mr. Martindale. He was also able to say that the memorial met with the approval of Mrs. Martindale and her children. Mr. Carteighe concluded by drawing aside the curtains which had hidden the bust from view, and formally asking the President to accept the memorial



THE WILLIAM MARTINDALE MEMORIAL MEDAL.

The President said that on behalf of the Council, and as representing the entire Society, he cordially accepted the trust and the responsibility involved in the care of the memorial. They were doing a right thing: they were recording history, and they were making history. He knew no one who more deserved the honour that had been paid to his memory than William Martindale. It was in 1869, after a meeting of the British Pharmaceutical Conference at Exeter, that he first met Martindale, then a delicate and fragile boy. It had surprised him that Martindale had lived so long. He himself never paced those rooms but he almost heard the ringing voice of his old friend. He deserved their recognition. In that, their Valhalla, they had paintings of past-Presidents and others, but that bust was unique. He hoped that in the future they would have more of that form of memorialising the great and good men who had worked in that house. He must mention that it was largely due to the energy and liberality of Mr. Carteighe that the foundation of the memorial had thus been brought to a successful completion. He was glad to look on the medal, and accepted it with a full heart, with all consciousness of the responsibility and worthiness of the occasion, with a feeling of pleasure, saddened by the thought that their old friend had passed away.

Dr. W. H. Martindale briefly expressed the thanks of himself and the other members of the late Mr. Martindale's family, to those who had paid honour to his father's memory.

Mr. Carteighe added that he had omitted to mention that the bust was the work of a pharmacist who had devoted himself to art. He congratulated Mr. Taubman on the success of his work.

The proceedings of the meeting then terminated.

IRISH CHEMISTS', ASSISTANTS' AND APPRENTICES' ASSOCIATION.

GENERAL MEETING.

Monday, September 28, 1903, at Dublin, Mr. E. B. Aplin in the chair.

The rules of the Association were submitted for approval, the subscriptions being fixed at 10s. for members and 5s. for apprentices. It was stated that the Association would hold a smoking concert towards the end of October. Technical education will be assisted and encouraged by the Association, and prizes will be offered for essays on matters of chemical interest. Mr. T. Kelby was elected hon. assistant secretary.

CARDIFF AND DISTRICT PHARMACEUTICAL ASSOCIATION.

A sparsely-attended meeting of this Association took place at the Park Hotel, Cardiff, on Wednesday night, to consider Mr. Tocher's scheme of territorial representation upon the Pharmaceutical Council. Mr. Jabez A. Jones, President, occupied the chair.

The President gave a short explanation of the scheme, and pointed out that the whole of Wales was unrepresented at the present time.

After a few remarks by the members present,

Mr. Hagon said he had better postpone any resolution until the next meeting, at the end of October, when the matter could be more adequately discussed.

LEGAL INTELLIGENCE.

Sale of Food and Drugs Acts.

Camphorated Oil.

On Monday, September 28, 1903, at Wolverhampton, Amelia Forrester, of Shaw Road, Bushbury, was charged with selling camphorated oil which was stated to be 21 per cent. deficient of camphor. Defendant was fined 20s. and costs. The defendant pleaded that the oil was sold as she purchased it, and she was told she had a remedy against the makers.

SCHOOL AND COLLEGE NEWS.

Royal College of Science.—The distribution of medals, prizes, etc., to the students of the Royal College of Science, London, will take place in the lecture theatre of the Victoria and Albert Museum, South Kensington, at 2.30 p.m., on Thursday, October 8, 1903, when an address will be delivered by Professor J. B. Farmer, F.R.S., professor of botany at the college, and formerly examiner in botany to the Pharmaceutical Society.

University of Liverpool.—Attention is called to the School of Pharmacy of the University of Liverpool, where the courses of instruction are adapted to the requirements of the examinations of the Pharmaceutical Society. In the school are well-equipped museums of chemistry, botany, and materia medica. The lecturer on pharmacy is Mr. Prosper H. Marsden, F.C.S. Full particulars respecting the school from the Dean of the Medical Faculty.

Bacteriological Lectures at Plymouth.—Under the auspices of the Plymouth Education Authority, a course of lectures, with practical instruction on bacteriology, is to be given at the Science School of that town by Dr. Frank Bushnell, pathologist to the South Devon and East Cornwall Hospital. Pharmaceutical students in the West of England who desire to learn something of bacteriology, will doubtless avail themselves of the opportunity.

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

New Book.—Among the new books issued by Longmans and Co. during the present week is 'Climbs and Explorations in the Canadian Rockies,' by Mr. H. E. M. Stutfield and Professor J. Norman Collie, formerly Professor of Chemistry to the Pharmaceutical Society.

Publisher's Announcement. —Messrs. Gurney and Jackson will issue, before the end of October, Volume I., containing Parts I. and II., of the third and greatly enlarged edition of Dr. George Lunge's 'Theoretical and Practical Treatise on the Manufacture of Sulphuric Acid and Alkali.'

Wills.—The will of the late Mr. John Gillard Page, chemist and druggist, South Molton, has been proved at £777 7s. 4d. gross, the net personalty being £128 1s. The estate of the late Alderman Albert Bellairs, peppermint distiller, of Crowland, has been valued at £8,382 10s. 10d. gross, the net personalty amounting to £1,121 12s. 9d.

Boric Acid in Milk.—A milk dealer was summoned last week at St. Albans for selling milk mixed with a boric acid preservative. Mr. Ekins, the borough analyst, said that the preservative contained 20 per cent. of borax and 80 per cent. of crystallised boracic acid. The amount of preservative contained was 4·77 grains per pint. The Bench convicted, and fined the defendant a total of £8, including costs.

Petroleum Anæsthetic.—The lay Press during the last few weeks has taken great interest in the "new anæsthetic," discovered by M. Buquet. The anæsthetic is made, so one is informed, by combining air with the vapour of petroleum. Frogs and lizards have been experimented on with thoroughly satisfactory results. It has been stated that the new anæsthetic is much less dangerous to life than chloroform.

Starchy Foods for Infants.—The dangers of administering proprietary foods, often of a starchy nature, to very young infants, were emphasised at an inquest held at Lewes on Saturday, September 19, relative to the death of a three months old child, who died from convulsions, brought on by improper feeding with such foods. Chemists should be careful not to recommend starchy foods in any circumstances for infants under six months.

Lectures on Optics in Glasgow.—Mr. J. H. Sutcliffe, F.R.S.L., last Saturday completed a series of lectures or practical lessons on optical work in the Shepherds' Hall, Bath Street, Glasgow. These were given to corresponding students who are preparing for the dioptric examination of the British Optical Society. These lectures, if repeated at some future date, should prove of interest to local chemists who may intend entering for the above examination.

Fire at the London Essence Company's Works.—On Saturday, September 26, 1903, a destructive fire broke out on the premises of the United Confectionery Company, George Street, Camberwell Green. The fire spread to the manufactory of the London Essence Company, the entire building being destroyed. The firemen were engaged throughout the night, but were unable to save the premises. The damage to the several properties is understood to be fully covered by insurance.

Burglar at a Chemist's.—A man named Arthur Roberts was charged at Nottingham last week with breaking and entering the shop of Mr. C. A. Bolton, chemist, 40, Carlton Street, Nottingham, on the 25th ult. P.C. Redgate said that at 11.40 on Friday night, when on duty in Stoney Street, he heard the crash of broken glass. He at once ran in the direction of the sound, and found prisoner and another man getting out of Mr. Bolton's premises. One of the men made his escape, but witness seized Roberts. Prisoner was remanded.

Dangers of Carrying Vitriol.—Two accidents occurred in the Great Western Docks, Plymouth, on Thursday, fortunately not of a serious nature. A man was on a truck laden with vitriol when the engine stopped suddenly, with the result that the vitriol was splashed into his face, which was badly burned. He was taken to the hospital. Shortly afterwards another accident accurred on the same truck. A man working for Schweppes, Limited, mineral water manufacturers, was near the truck when a carboy filled with vitriol fell, and some of the liquid splashed on his clothes.

Workhouse Drugs.—After considering what steps shall be taken with regard to the supply of expensive drugs and medicines, Stowmarket Board of Guardians has decided to lay before the Local Government Board two suggestions. One is that the requisite drugs shall be obtained by tender from local chemists for storage at the Workhouse, and supplied to the medical officers on order by them in sealed bottles. The other is that prescriptions for medicines required shall be sent by the medical officers to local chemists, to be made up by them and sent by post or otherwise to the patients.

Pharmacy and the Stage.—The pharmacist who does not like to leave the shop entirely behind him when he goes to a theatre will find several things to interest him on the London stage. In one play a man dies on the stage after taking an overdose of a sleeping draught, while in another—Barrie's "Little Mary"—an Irish chemist and druggist is one of the principal characters. At the Alhambra a number of interesting scientific pictures are shown on the bioscope. Some of these show the movement of protoplasm in water-weeds, and others illustrate fresh-water hydra, bee culture and honey production, the whole being an excellent example of the possibilities of modern photo-micrography and "kinetography."

Veterinary Surgeons and Jury Service.—At Harlesden, on Thursday, the Bench considered the objection of Mr. Philip J. Hagmaier, M.R.C.V.S., of Kilburn, to serve as a juror on the ground that he was a registered medical practitioner within the meaning of 33 and 34 Vic., cap. 7.—Mr. George Thatcher, the solicitor to the Royal College of Veterinary Surgeons, in support of the objection, quoted from the original charter of 1844, and contended that, having regard to the wording of the charter, and to the fact that all veterinary surgeons had to be on the register, they came within the words "registered medical practitioners," within the meaning of the exemption clause in the Jury Act.—The Chairman, after consulting with the other magistrates, stated that the objection was rejected, and that the name must appear on the jury list. —On the application of Mr. Thatcher, a case was granted.

American Wholesalers Meet Manufacturers.—The joint convention of the National Wholesale Druggists' Association and the Proprietary Association of America met in Boston on September 7. On the following day President Hover delivered an address. In the course of his speech Mr. Hover deplored the loss of profit on the sale of chemicals, due to excessive competition, and recommended the adoption of a resolution requesting chemical manufacturers to discontinue retail work. Proceeding, he said the actual capital invested in the wholesale drug business, as represented by the N.W.D.A., was shown to be between 23,723,000dols. and 37,380,000dols. Annual sales were estimated at about 94,241,680dols. Of this amount, 54 per cent., or 51,241,680dols., represents sales of proprietary articles. At one of the meetings held on Wednesday Mr. M. W. Kilne quoted from a pamphlet issued by a New York firm of attorneys on the manner in which Germany had developed its industry by a wise provision for the use of alcohol. German industries consume fifty-six million gallons of alcohol, as against ten million gallons in the United States, the only reason for the great difference in the quantity used being that Germany recognised two principles—low duty on alcohol and free alcohol for the manufacture of export goods.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. A. W. Nunn, F.C.S., pharmaceutical chemist, has disposed of his business at 313, Sydenham Road, London, S.E., to Mr. Duncan.

Mr. Edgar S. Eaton, of Swinton, Yorks, and late Imperial College of Pharmacy, has been appointed West-of England representative for Messrs. Parke, Davis, and Co.

Mr. Bowman, of the firm of Smith and Bowman, Crichton Place, Edinburgh, met with an accident on Thursday, the 24th ult., which will confine him to the house for several weeks.

Mr. Herbert Ffoulkes, formerly of the P.A.T.A. and the C.D.A. staff, is taking over the western and south-western districts of London, north of the Thames, on behalf of Messrs. J. Lorimer and Co., Limited.

Mr. R. B. Betty, the energetic Secretary of the North London Branch of the London Chemists' Association, was on Wednesday, September 30, elected Secretary of the central body, in place of Mr. R. H. Jones, resigned.

North-East Lancashire Chemists' Association.—In consequence of Mr. Pickworth's retirement from business (through illness), Mr. Jos. Hindle, 76, Copy Nook, Blackburn, has been appointed Secretary till other arrangements are made for filling the office.

Mr. Thomas Johnstone, who served his apprenticeship with Messrs. Anderson and Ireland, Springburn, and has lately been assistant to Mr. Robertson, Rutherglen, has opened a new pharmacy at Springburn. He exhibits photographic goods as a side line.

Mr. Cecil H. Hickie, a son of Mr. Harry Hickie, of Messrs. Parke, Davis and Co., has just entered the Rifle Brigade as a non-commissioned officer. This constitutes a precedent in the annals of the Rifle Brigade. Mr. Hickie, junior, was formerly a representative of "Malloween" and the Goodriche Rubber Company.

Mr. R. H. Jones, who has acted as Secretary of the London Chemists' Association since its formation, has resigned, private matters making it impossible for him to retain office. As a mark of esteem and appreciation for the good work he has done on behalf of the Association, he was on Wednesday last elected a vice-president.

Mr. A. Timmins, Hon. Secretary of the Hartlepools and District Chemists' Association, asks secretaries of local chemists' associations which have any trading section or system of co-operative buying in force to forward him particulars of their plan of conducting same to 68, Murray Street, West Hartlepool.

Mr. A. Hawthorne, chemist and druggist, of Brentford, laid one of the foundation-stones in commemoration of the opening and dedication of the New Wesleyan Schools, Brentford, on September 28. Mr. Hawthorne is the brother of Dr. Hawthorne, who gave evidence in the recent "methylated soap liniment case." Another brother is Mr. G. R. Hawthorne, President of the Northampton Grocers' Association, a photograph and short biography of whom appeared in a recent number of the *Grocer.*

Mr. J. R. Birkett, who has accepted the mayoralty of Morecambe, was for many years in business in the town as a chemist. He served his apprenticeship with Mr. Joseph Albright, chemist and druggist, of Penny Street, Lancaster, and after serving as an assistant at Leeds, he commenced business at Morecambe. He subsequently abandoned pharmacy for dentistry, and enjoys a lucrative practice. Mr. Birkett was a member of the old Urban Council, and on the incorporation of the town he secured a seat on the Town Council. At present he holds the position of deputy-Mayor. In politics he is a Conservative.

COMPANY INTELLIGENCE.

Evans Sons Lescher and Webb, Limited.—The warrants for half-year's dividend on 5 per cent. cumulative preference shares in Evans Sons Lescher and Webb, Limited, were posted on the 30th ult.

Dean Drug Co., Limited.—Capital, £15,000, in £1 shares. Objects: To adopt an agreement with Marie A. Derry and J. Carré, to acquire the business carried on at 10, Marble Arch, W., as the Drouet Institute, and to carry on the business of manufacturers and vendors of patent medicines, drugs, surgical instruments, etc. Registered office, 25, Abchurch Lane, E.C.

S. S. Lees and Co., Limited.—Capital, £2,000 in £1 shares. Object, to adopt an agreement with S. S. Lees, to acquire the business now carried on at Manchester, as the Manchester Hairdressers' Manufacturing Company, and J. R. Lees and Company, and to carry on the business of manufacturers of pomades, scents, essences, soaps, drugs, chemicals, etc., etc. Registered office: 30, Thomas Street, Manchester.

Howards and Sons, Limited, Stratford, E., announce that, for family reasons, they have converted their business into a limited company, under the name of Howards and Sons, Limited. There will be no change whatever in the management, all the existing partners having joined the board as the first directors. No shares will be offered to the public, the whole of the issued capital having been subscribed by the late partners.

Hopkin and Williams, Limited.—It is announced that the business of Messrs. Hopkin and Williams, chemical manufacturers, 16, Cross Street, Hatton Garden, E.C., has been converted into a limited company. No shares will be offered to the public, the whole of the issued capital having been subscribed by the late partners. As already intimated, the management of the business has been entrusted to Mr. Edmund White, B.Sc., F.I.C.

Homocea, Limited.—A meeting of the shareholders of Homocea, Limited, was held at Winchester House, E.C., on September 25, when the resolutions passed on the 10th ult. were unanimously confirmed. Under these the capital of the company will be reduced from £250,000 to £60,000, by cancelling 50,000 preference shares and 35,000 ordinary shares (which have not been issued or have been forfeited), and by cancelling paid-up capital that has been lost by reducing the nominal amount of the actual shares at present issued.

TRADE NOTES.

Cold Cream.—Messrs. Waller, Malvine and Co., of 12, Castle Street East, London, W., invite readers to apply for samples of their cold cream, which they guarantee will not go rancid. The preparation is snow-white, delicately perfumed, and excellently made. It is supplied at 1s. 4d. per lb.

Blaud Pills.—A sample of Pil. Ferri, B.P. (gelatin coated), manufactured by Messrs. A. H. Cox and Co., Brighton, has recently been submitted to us for examination. These pills, which, by the way, the firm guarantees for two years, answer the requirements of the British Pharmacopœia, are of elegant appearance, and like all other preparations of Messrs. Cox and Co., are neatly packed for retail sale. The firm's price list of pills and tablets for the current month has also been received, and readers of the Journal would be well advised to procure a copy of it.

Apollinaris Water.—An interesting account of a visit recently paid by a number of scientists to the Apollinaris Spring appears in a Cologne contemporary. Some 200 doctors and other guests of honour responded to an invitation to view the Apollinaris Spring, when the directors gave information concerning the various processes of cleaning, filling, and despatching the thirty millions of bottles and jugs which leave the establishment in the course of a year. The visitors and guests were unanimously of opinion that the Apollinaris Spring was a pattern of works of first rank.

The P.A.T.A. List.—Several firms have recently made additions to the list of protected articles. The "Tusco" Chemical Works, 143, High Holborn, London, W.C., have added to the list "Tusco," a new liquid dentifrice, which is put up in two sizes, retailing at 1s. 6d. and 2s. 6d. The Crown Perfumery Co., Fore Street, London, E.C., make the addition to the articles they already have upon the list of Crown Crab Apple Cologne, a new perfume, put up in 1s. and 1s. 6d. bottles. Messrs. Potter and Clarke, Artillery Lane, London, E., have protected the prices of Potter's Malt-Egg and Potter's Asthma

Smoking Mixture. The Veno Drug Co., Cedar Street, Hulme, Manchester, have brought out a 9½d. size of Veno's Lightning Cough Cure, an article which is about to be advertised on an extensive scale. Messrs. Cook and Co., Limited, soap manufacturers of Bow, London, E., have made a large addition to the articles they already have upon the Protected List.

Chest Protectors.—The season for chest protectors is at hand, and Messrs. F. Schutze and Co., 89, Southwark Street, London, S.E., have just placed on the market an exceptionally fine article. The "Southdown" chest protector, as it is called, is manufactured of a soft, porous material, which looks as warm as it really is; and it is sure to find a ready sale. Covers for hot-water bottles made of a similar material are also among the winter specialties issued by the same firm and chemists will find satisfaction in recommending them.

Portable Turkish Baths.—That very ingenious and useful contrivance known as the "Cabinet Bath," has been on the market for some time, but unfortunately the price hitherto asked for them has been out of all proportion to its intrinsic value. Messrs. Marshalls, Limited, 27, Red Lion Square, London, W.C., have, however, recently placed on the market an article known as "the Crown Bath Cabinet," which can be sold at prices within the reach of any person who may require one. The "Crown Bath Cabinet" is made in two qualities, one of which is constructed of specially-treated wood frames with double-lined covering, and can be sold with a fair profit (lamp included) at 40s., whilst the other variety, which is constructed with best steel frames, can be retailed at 25s. These baths, which, when folded up can be stored within a very small space, have been inspected by a representative of the Journal, who finds them to be thoroughly reliable articles, and readers would do well to apply to Messrs. Marshalls for fuller particulars.

Sixty Years Ago.

From the PHARMACEUTICAL JOURNAL, Sept., 1843

THE EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE OF LONDON UNIVERSITY.

Questions on Materia Medica and Pharmacy.

Examiner.—Dr. Pereira.

1. Describe the method of preparing the antimonii potassii-tartras according to the London Pharmacopœia, and explain the chemical changes which attend the process. State the composition, effects, uses, and doses of this salt, and also the tests by which its presence may be recognised.

2. Give the botanical characters of *Aconitum napellus*. . . . . State the best mode of using it externally as well as internally.

3. How would you distinguish liquor sodæ effervescens, Ph.L., from mere carbonic acid water? With what metal is the soda water of the shops frequently contaminated, and how would you detect the impurity?

4. What are the appropriate doses for an adult of the following substances:—Benzoic acid, sal ammoniac, trisnitrate of bismuth, biniodide of mercury, and bromide of potassium?

5. How would you detect the adulteration of balsam copaiba with castor oil?

6. Enumerate the principal cathartics. . . . .

POISONING CASES AND INQUESTS.

The deaths by poisoning reported during the seven days ended Wednesday, September 30, 1903, numbered sixteen, thus:—

Poison.	Accident.	Suicide.
Alcohol	1	—
Carbolic Acid	1	3
Chloroform	2	—
Compound Camphor Liniment	1	—
Laudanum	1	1
Morphine	—	1
Oxalic Acid	—	1
Phosphorus	1	—
Proprietary Medicine	1	—
Rat Poison	—	1
Salts of Lemon	—	1
Total	8	8

Alcohol.—A man at Worksop, who had taken a quart of neat whiskey, died from acute alcoholic poisoning.

Carbolic Acid.—A man at Derby accidentally drank carbolic acid with fatal results, and three women at Streatham, Cardiff, and Darlington respectively, committed suicide with the same poison.

Chloroform.—A child at Plymouth, and a woman at Manchester, died under chloroform.

Compound Camphor Liniment.—The wife of the Swedish Consul of Gothenburg died at Rudgwick, through taking by misadventure a quantity of compound camphor liniment, which was contained in a blue poison-bottle.

Laudanum.—A woman in London, and a man at Colwyn Bay committed suicide by taking laudanum. A woman at Sheffield accidentally took an overdose.

Morphine.—An analytical chemist at Stoke Newington committed suicide by taking morphine.

Oxalic Acid.—A woman at Bradford committed suicide by taking oxalic acid.

Phosphorus.—A man at St. Kesteven died from phosphorus poisoning, the poison having apparently been taken in bottled ale.

Proprietary Medicines.—At Earlstown, on Friday, the 25th ult., an inquest was resumed on the death of a child from narcotic poison, following the administration of a mixture known as "Mother's Friend," a concoction containing 1½ grains of morphine to the fluid drachm, and prepared by one Mee, a non-registered person, apparently trading as a druggist.

Rat Poison.—A man at Coventry committed suicide by taking rat poison. All the requirements of the law had been complied with by the chemist who had sold the poison.

Salts of Lemon.—A barmaid, at Liverpool, took salts of lemon. The jury, at the coroner's inquest, thought that additional restrictions should be placed on the sale of this poison.

Attempts at Suicide.—There were, as usual, several attempts at suicide by taking laudanum and oxalic acid.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

The Drug Sales.

London, Thursday, October 1, 1903.

There was a more business-like air about the sale-rooms at to-day's drug auctions. Bids came more freely, and some of the articles sold with fair competition. New goods only were offered, and of the fourteen catalogues only two were anything like heavy. The chief feature of the sales were the Senna offerings, all of which found buyers; whilst the better grades were disposed of at rather easier rates, the medium qualities fetched still higher prices than those obtained at recent sales. A better feeling prevailed with regard to Cardamoms, for which rather higher prices were paid. Ipecacuanha sold very well. Aloes was in fairly good supply, and lower prices were accepted for Cape. No bids were made for the Otto of Rose and Cod Liver Oil catalogued. The following are a few particulars of the principal articles which found buyers.

The following table shows the number of packages offered and sold :—

	Offered.	Sold.		Offered.	Sold.
Accroides	92	0	Gum Myrrh	17	5
Aconite Root	10	0	Gum Tragacanth	13	0
Albumen	14	—	Honey	150	96
Aloes	61	61	Ipecacuanha	39	26
Ambergris	1	0	Kola Nuts	7	16
Antimony	114	0	Lemongrass Oil	25	0
Areca Nuts	60	0	Lime Oil	25	24
Balsam Peru	3	0	Lime Juice	13	2
Bay Oil	1	1	Musk	2	2
Cajeputa Oil	2	0	Orchella Weed	29	0
Camphor	111	101	Otto Roses	8	0
Cardamoms	244	220	Orris Root	—	—
Cardamom Seeds	13	4	Quillaia Bark	14	0
Chinchona Bark	6	0	Red Bark	1	0
Cod Liver Oil	3	0	Rhubarb	156	9
Coca Leaves	1	—	Sandalwood Chips	231	231
Colombo Root	65	25	Sandarac	6	6
Cuttle Fish	20	0	Sarsaparilla	63	—
Ergot of Rye	1	0	Seedlac	32	32
Eucalyptus Oil	20	0	Senna	432	429
Gamboge	1	1	Senna Pods	9	3
Gum Arabic	64	53	Soy	1	0
Gum Benjamin	76	53	Squills	10	0
Gum Elemi	9	0	Turmeric	729	0
Gum Kino	16	16	Wax	390	28

ALOES—Sold fairly well. Zanzibar, 35s. to 55s., according to quality; Curaçoa, 24s.; Cape, up to 50s. was paid for fair quality.

CAJEPUTI OIL.—2 cases (B.P.) sold without reserve at 3s. 3d. per bottle.

CAMPHOR.—101 tubs of flowers, returned as country damaged, sold at 152s. 6d. per cwt. Japan refined, in ¼-oz. tablets, was held for 2s. 3d. per lb.

CARDAMOMS—Sold rather better, and higher prices were paid.

COLOMBO ROOT.—Very ordinary sorts, small dusty, was knocked down at 9s. per cwt. Sixty-three bags small native washed sold without reserve at 15s. to 15s. 6d.

GAMBOGE.—A case of blocky Siam pipe sold for fifteen guineas per cwt.

GRAIN MUSK.—Nepaul character sold at 25s. to 26s.

GUM ARABIC.—The qualities offered were very varied, and the highest price obtained was 21s. (without reserve).

GUM BENZOIN—Sold with better demand, but no really fine quality was offered. Fair medium Sumatra £5 15s. to £6 10s. Some common was knocked down at 95s. A bid of 45s. for good Palembang was refused.

GUM KINO.—A small quantity was sold without reserve at low rates.

GUM MYRRH.—Sorts sold at 85s. per cwt.

HONEY.—Jamaica realised from 21s. 6d. to 24s. 6d., a few barrels of poorer quality sold at 19s. 10 cases of New Zealand realised 44s. per cwt.

IPECACUANHA—Sold very well. Rio cultivated Minas 4s. 3d. to 4s. 6d., Mattogrosso 4s. 3d. to 4s. 10d. Privately, 4s. 2d. has been paid for Cartagena.

KOLA NUTS.—Good West Indians sold at 6d., which is rather cheaper.

LIME OIL.—A few cases sold at prices ranging from 1s. 5d. to 1s. 9d.

MADRAS SEEDLAC—Sold with fair competition at £6 10s. per cwt. This was an advance.

ORRIS ROOT.—A quantity of sea-damaged sold without reserve at low rates.

RHUBARB.—The supplies were small, and the demand smaller, a few cases only of lower qualities found buyers.

SANDALWOOD CHIPS—Offered without reserve, realised £3 to £3 5s. per ton.

SANDARAC.—Australian realised 37s. 6d.

SARSAPARILLA.—Jamaica sold at prices ranging from 9d. to 1s. 1d., the former price being for damaged. Lima: A quantity of sea-damaged sold at very low rates.

SENNA.—Better grades were rather easier. Medium grades were again dearer, and for other qualities the same high prices were maintained.

WAX—Sold as follows: Zanzibar, £6 15s. 6d. to £6 17s. 6d.; Madagascar, £7; Jamaica, £7 15s.

General Markets.

The condition of things on the drug and chemical markets shows little signs of improvement. The depression in financial circles has not, as yet, had any effect on the drug markets; but the shrinkage in value of stocks, which practically means a diminution of the apparent capital of the nation, can hardly fail to exercise a more or less unfavourable influence on commerce generally. Despite the gloomy outlook, however, at least a small amount of business has been transacted, and prices, in the cases of a few articles, have ruled higher. Some diversion from the ordinary routine of business was caused on Wednesday afternoon at the Royal Exchange, when, for the first time, the new fresco was uncovered to the public gaze, and for the nonce druggists and brokers alike put on one side all thoughts of menthol and peppermint, and devoted ten minutes to the criticism of art, and discussed the merits of the new picture, which represents the entertainment of the four Kings of England, Scotland, Denmark, and Cyprus in the Old Hall of the Vintners' Company. The new fresco, so say the critics, bears comparison with any of its companions. Of the few articles which have excited particular notice during the week, perhaps the most important has been Peppermint Oil. Some large sales of American oils have been made at higher prices than those quoted at this time last week, whilst Japan oil has also been the subject of transactions at higher rates. Menthol is dearer, and shows symptoms of regaining the position it held about two months back. No definite opinion can, however, be vouchsafed at the present as to its movements during the next few weeks. Quinine, towards the end of last week, seemed rather flatter;

but things have brightened up slightly, and a fairly large quantity has changed hands. Mexican Sarsaparilla is still rather scarce, despite the fact that the epidemic of yellow fever, which has already been alluded to in these columns, has now practically subsided. An interesting outcome of the plague, by the way, was the recent presentation of a gold medal made to the eighteen-year-old daughter of the Mayor of Linares. During the plague this young lady, while her father was down with the disease, carried on the business of the mayoralty. Cod-liver Oil is scarcer than ever, and, curious to relate, the Newfoundland oil shows signs of approaching the price asked for Norwegian. Ergot of Rye is again slightly dearer. Cascara Sagrada still reposes, and the price is unchanged. The near Eastern Question has as yet not interfered with the position of Opium or its Alkaloids. The price of Cocaine has been considerably reduced, and fuller particulars about other articles of interest are here appended :—

ACID CITRIC.—Slightly easier, at 1s. 0½d. to 1s. 1d. per lb.

ACID TARTARIC.—English, on the spot, 1s. 1d. to 1s. 1½d.

ALUM.—Lump, £5 12s. 6d. ; powder, £6 2s. 6d.

ASAFETIDA.—No good stuff is to be had on the spot in first hands, and no arrivals are expected before the end of the year.

BISMUTH CARBONATE.—8s. 1d. per lb. ; subnitrate, 7s. 4d.

BORACIC ACID.—Crystals 22s. 6d., Powder 24s. 6d.

BORAX.—Crystals, 13s. 6d. to 14s. 6d. per cwt., according to quantity ; powder, 15s. 6d. to 16s. 6d.

BROMIDES—Are unaltered. Potassium Bromide is quoted at 1s. 11½d. per lb.

CARBOLIC ACID—Steady, and business continues fairly good. Crystal, 39° to 40° C., 5½d. Detached crystals, 39° to 40° C., 6¾d. Crude, 60° F., 1s. 6½d. per gallon. Liquid (95 to 98 per cent.) of pale straw colour, 1s. 2d. per gallon.

CANTHARIDES.—Russian are a trifle dearer at 3s. 1d. ; there is a little old stuff, very dusty, to be had at 2s. 10d. to 2s. 11d.

CASCARA SAGRADA—Is quiet, and no transactions are reported over here this week. The quotations are firm at last week's prices, namely, 95s. spot and 90s. to arrive.

CASTOR OIL.—Belgian firsts, September to December delivery, £20 10s. ; seconds, £19 15s.

CHAMOMILES—Are, if anything, rather firmer. The harvesting is practically all over, and, as reported last week, the size of the crop is smaller than last year, and consists for the most part of No. 2 flowers. The prices are, for No. 1 Belgian flowers, c.i.f., 45s., and for No. 2, 39s. to 40s. c.i.f.

CINCHONA BARK.—The September shipments at Java were 1,237,000 Amsterdam lb., against 950,000 Amsterdam lb. during the same month last year, and 1,182,000 Amsterdam lb. in September, 1901. The total for the nine months is 9,298,000 Amsterdam lb., against 9,232,000 Amsterdam lb. last year, and 8,623,000 Amsterdam lb. in 1901.

CINNAMON.—At the Spice Sales 8 bales Ceylon offered and sold, without reserve, coarse quills at 6¾d. to 7¾d. Bark sold, without reserve, at ¼d.

CLOVES.—At the auction on Wednesday 34 cases Penang were offered and sold, fair picked at 9d. Zanzibar were bought in. Zanzibar in the private market have been firmer.

COCAINE.—The price has been reduced, and 15s. 6d. to 16s., according to quantity, is now quoted for the hydrochloride, and 18s. to 18s. 6d. for the pure alkaloid.

COCOANUT OIL.—Ceylon spot, £25 10s. ; Cochin spot, £31.

COD-LIVER OIL.—From 475s., the price at which it could be obtained at this time last week, Norwegian has risen to 520s. Newfoundland shows signs of approaching the price quoted for Norwegian.

CODEINE—Still remains at 10s. per oz. for the pure alkaloid.

CREAM OF TARTAR.—98 per cent. foreign powder, 88s.

ERGOT OF RYE.—In the absence of supply the price has again advanced, and 1s. 7d. to 1s. 9d. are the spot quotations.

GINGER.—At Wednesday's auction there was little demand for Cochin. 148 cases sold without reserve, small, rather roughly cut, scraped, at 40s. to 41s. 6d. ; medium and small ditto at 45s. 6d.

GLYCERIN.—£3 8s. per cwt. for ½-ton lots. Schering's double distilled 1·260, 73s. per cwt ; ditto, distilled, 71s.

IODIDE OF POTASSIUM—Unchanged at 8s. 9d. per lb.

IODINE—Unaltered at 9s. 9d. to 10s. per lb., for the resublimed according to quantity.

IODOFORM.—11s. 8d. per lb., for the pure crystals or powder.

LINSEED OIL.—The market is quiet and slightly lower. London spot pipes £18 12s. 6d. ; barrels £18 17s. 6d.

MENTHOL—Is dearer, and shows signs of rising still higher again. 20s. has been paid and 21s. 6d. is now quoted, although some holders are asking as high as 23s.

MERCURIALS—Are unchanged since last quotation. Calomel, 2s. 8d. ; corrosive sublimate, 2s. 4d. ; red precipitate, 2s. 11d. ; white precipitate, 2s. 11½d. ; mercuric sulphate, 2s. 4d. per lb.

MORPHINE.—For the hydrochloride 4s. 6d. to 4s. 8d., according to quantity, are still the selling prices.

NUTMEGS—Obtained higher prices at Wednesday's sale.

OIL OF STAR ANISEED—Is very firm at 4s. 4d., and shows signs of moving higher.

OLIVE OIL.—Mogador, £33.

OPIUM.—The market, though firm, is very quiet indeed. Prices for all kinds remain unchanged.

OXALIC ACID.—2⅝d. to 2⅞d., delivered free London.

PALM OIL.—Lagos on the spot is quoted at £28 15s.

PEPPER.—The private market is quiet, and prices at Wednesday's Spice Auction were about on a par with those of last sales.

PEPPERMINT OIL.—American continued to rise at the beginning of the week, and good sales were made. H.G.H. is now quoted at 15s. 9d., and Stilwell's at 13s. 6d. Business yesterday and to-day has been quiet. Sales of Japan Oil have been made at 7s.

PIMENTO.—90 bags sold at the Spice Sales, fair at 3¾d. to 3⅞d., small at 3⅝d.

QUICKSILVER—Unaltered at £8 7s. 6d.

QUININE.—Makers' price for the German brands remains unchanged. Some fair sales have been made in the second-hand market at 1s. 0½d. For late delivery the quotations are a fraction lower.

SAFFRON.—The new crop is expected about the middle of next month. The old bulbs, according to report, are in a bad condition, but no definite opinion can be given with regard to the prospects of the crop. The present value is 29s. to 30s., according to quality, for pure Valencian, B.P.

SANTONIN.—The market is very firm. It is stated that a further advance is by no means unlikely. It is reported that the result of last wormseed harvest is again unfavourable. Price so far is, however, unchanged at 22s. 9d. to 24s. per lb., according to quantity, the lower price being for 2 cwt. lots, taken promptly in one delivery.

SENEGA.—There has been very little doing in this article. A small quantity has, however, been sold at 3s. 3d.

SHELLAC—Is again dearer, and as much as 190s. has been asked for fair TN orange, and 156s. for AC Garnet.

SODIUM BICARBONATE—£7 5s. per ton landed. Howards', 45s. per cwt.

TURPENTINE—Is lower American spot 42s.

PATENTS AND TRADE MARKS.*

New Patent Applications.

IMPROVED METHOD OF PRODUCING CARBONATE OF SODA (No. 19,986, of 1902).—N. P. Hansen, 8, Helgesvij, Copenhagen, Denmark. In this invention the formation of carbonate of soda is continued beyond the point where it is usually stopped. Whilst formerly the bicarbonate of soda produced during the first stage of the process was treated simply for the purpose of depriving it of one molecule of carbon dioxide, $2NaHCO_3 - CO_2 = Na_2CO_3 + H_2O$, in the present process to the bicarbonate of soda produced will be added one molecule of caustic soda, whereby two molecules of normal carbonate of soda will be formed, $2NaHCO_3 + Na_2OH_2O = 2Na_2CO_3 + 2H_2O$. By this means the sodium will enter into the treatment, not only as usual, in the shape of chloride, but also as hydroxide.

MANUFACTURE OF PRODUCTS OF THE INDO-PHENOL SERIES (No. 23,994, of 1902).—C. D. Abel, Birkbeck Bank Chambers, Southampton Buildings, London, W.C. (Communicated by the Actien Gesellschaft für Anilin Fabrikation, of Berlin, Germany.) Relates to the manufacture of products of the indo-phenol series by oxidising with an alkaline oxidising agent, at a temperature below 0° C., para-amido-phenol, or a homologue or substitute product thereof, in the presence of phenol, or a homologue or substitute product thereof.

MANUFACTURE OF AROMATIC NITRILES (No. 24,461, of 1902).—O. Imray, Birkbeck Bank Chambers, Southampton Buildings, London, W.C. (Communicated by Fabriques de Produits Chimiques de Thann et de Mulhouse, of Thann, Alsace, Germany.) Relates to the manufacture of phenylglycine nitrile or its homologues, by acting on hydrocyanic acid with formaldehyde and aniline, or a homologue thereof, dissolved in a solvent which is without action on the said compound. Example:—93 parts of aniline are mixed with 244 parts of alcohol containing 10-12 per cent. of hydrocyanic acid and 80 parts of formaldehyde solution of 40 per cent. strength. This mixture becomes gradually warm, is allowed to cool, and the alcohol is distilled off in a vacuum, leaving the nitrile of phenylglycine as an oil, which speedily solidifies. The nitriles of other aromatic bases—for instance, that of toluidine—may be obtained in a similar manner.

NOTE.—Opposition to the grant of any of the above patents must be lodged at the Patent Office, on or before November 9, 1903.

New Trade Mark Applications.

(1) "**ALDTHYFORM**," (2) "**CUPRESSYMOL**" ("Cupress" disclaimed), (3) "**AHOY**" label, and (4) Device of a man (back view) standing on a rock, for preserving and disinfecting substances, in Class 2; pharmaceutical preparations and medicinal soaps, in Class 3; and perfumery and toilet articles, in Class 48, by Chemische Werke Hansa Gesellschaft, mit beschrankter Haftung, Am Brüggeweg, Hemelingen, near Bremen, Germany; and 19-21, Wilson Street, Finsbury Pavement, London, E.C. Nos 255,357-59, 255,363, 255,361, 255,364-65, 255,367, 254,739-40, 254,742, 254,745-46, and 254,748.

"**SELTZOS**" (Seltz" disclaimed) for compressed chemical tablets for producing carbonic acid gas, by J. Eugster, 2, Gresham Buildings, E.C. 256,431.

DEVICE of Sun and Sundial, for chemical substances used in photography, by S. D. Ross, 159, Queen Victoria Street, E.C. 256,587.

"**QUINOMET**," for chemical substances used in photography, by Lumière North American Co., Limited, 4, Bloomsbury Street, W.C. 256,899.

"**CYLLIN**," for sanitary, etc, preparations, by Jeyes' Sanitary Compounds Co., Limited, 64, Cannon Street, E.C. 256,051.

"**EGO**," for a medicated powder to be mixed with chicken food, by R. Cuvillier, St. Bruno, Tankerton Road, Whitstable. 256,406.

"**BRONIL**," for a disinfecting and dust-absorbing powder, by M. Sello, 12a, Finsbury Square, E.C. 256,543.

"**ENOZO**," for chemical substances used for sanitary, etc., purposes, by D. Owen and Son, 41, Exchange Chambers, Bixteth Street, Liverpool. 256,866.

"**KOQUINA**," for chemical substances prepared for use in medicine and pharmacy, by L. T. Ashwell, Hazelwood, Warlingham, Surrey. 256,904.

"**CORISOL**" ("Coris" disclaimed), for chemical substances prepared for use in medicine and pharmacy, by Squire and Sons, 413, Oxford Street, W. 255,573.

"**ARC**" and device of arc and portrait of applicant ("Arc" disclaimed), for medicated wine, by E. Marks, 91, Amhurst Road, Hackney, N.E. 256,664.

"**SOREHEALIT**" label (word disclaimed), for a medicated preparation for human use, by E. Phillips, 9 and 11, High Street, Kingsland, N. 257,041.

"**OLI-POLI**," for a device for dressing and polishing fingernails, by J. Leiter, Mariannengasse 11, Vienna IX. 256,433.

"**POLARINE**" ("Polar" disclaimed), for food preservatives, being ingredients in food, by F. Read, Oak Lodge, Oak Lane, Wilmslow, Cheshire. 256,623.

"**LANESINE**," for perfumery, etc., by Vereinigte Chemische Werke Aktien-Gesellschaft, Sals-Ufer 16, Charlottenburg, Berlin. 256,887.

NOTE.—Opposition to any of the above trade marks must be lodged at the Patent Office, on or before October 30, 1903.

PUBLICATIONS RECEIVED.

JOHN MICHAEL MAISCH: AN IDEAL PHARMACIST. By M. I. WILBERT. Pp. 351-377. Reprinted from the *American Journal of Pharmacy*. August, 1903. Philadelphia. 1903. From the Publishers.

THE FIGURES, FACTS AND FORMULÆ OF PHOTOGRAPHY AND GUIDE TO THEIR PRACTICAL USE. Edited by H. SNOWDEN WARD. Third edition. Pp. 7-184. Price 1s. net. London: Dawbarn and Ward, Limited, 6, Farringdon Avenue, E.C. 1903. From the Publishers.

GOLDEN RULES FOR DISEASES OF INFANTS AND CHILDREN. By GEORGE CARPENTER, M.D. (Lond.), M.R.C.P. "Golden Rules" Series, No. XI. Second edition. Englarged. Pp. 11-167. Price 2s. Bristol: J. Wright and Co. 1903. From the Publishers.

PERRY'S CATALOGUE OF BULBS AND TUBERS. No. 38. Part 1. Pp. 33. Autumn, 1903. London: Perry's Hardy Plant Farm, Winchmore Hill, N. From the Publishers.

THE CAMERA AND ITS MOVEMENTS.—"The Photogram" Series of Penny Pamphlets on Photography, No. 4. Pp. 16. London, Dawbarn and Ward, Limited, 6, Farringdon Avenue, E.C. This pamphlet deals with the points to consider in choosing a camera; what movements are required for various purposes; the object of the rising front, reversing back, double extension; hand cameras, and why one kind is better or worse than another; accessories.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for *The Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and 'Patent Notes for Inventors' free on application.

THE WINTER SESSION, 1903-4.

LOCAL PHARMACEUTICAL ASSOCIATIONS IN GREAT BRITAIN.

THE winter session, 1903-4, was inaugurated on Thursday last, October 1, by an address delivered before the Pharmaceutical Society of Great Britain in the Lecture Theatre at 17, Bloomsbury Square, London, by Dr. Joseph Wilson Swan, M.A., D.Sc., F.R.S., Vice-President of Senate, University College, London (see page 477). At the present time there are about eighty pharmaceutical associations in Great Britain, and during the current month most of the "active" associations will begin the work of the session. The following information has been compiled in order to give some idea of the work that is being done by the various pharmaceutical associations throughout the country; the lists of officers given are, so far as it has been possible to ascertain, correct at the present time.

Aberdeen Pharmaceutical Association.

GORDON'S COLLEGE, ABERDEEN.

This Association was founded in 1839, and is the oldest pharmaceutical association in Great Britain. Since its commencement sixty-four years ago the Association has always kept in view the higher education of the students, which was the origin of its existence, and, through the efforts of the Association, a fully-equipped School of Pharmacy was established at Gordon's College for both day and evening classes. The Association gives two scholarships annually to the two best students from the evening classes, consisting of a free term to the day school. Ordinary meetings are held quarterly on the first Wednesday in June, September, December, and March, but special meetings are called when necessary, and these frequently number more than the ordinary meetings. The officers are elected at the annual meeting in March. An annual dinner is held in connection with the Association; also an excursion. The Association is affiliated to the Federation. The officers of the Association are:—President, W. Giles; Vice-President, A. L. Bruce; Treasurer, James Paterson; Secretary, J. Black, 295, Rosemount Place.

Aberdeenshire (East) Chemists' Association.

MAUD, ABERDEENSHIRE.

This Association was founded in 1870, and meetings are held quarterly at Maud, Aberdeenshire. The annual meeting is held in October, when officers are elected. An annual dinner is held, and the Association is affiliated to the Federation of Local Pharmaceutical Associations. The officers are:—President, A. Gall, Fraserburgh; Secretary, J. F. Tocher, Peterhead.

Barnsley and District Chemists' Association.

ROYAL HOTEL, BARNSLEY.

This Association was founded in November, 1900. Meetings are held on the last Thursday in each month during the session, which begins in September, the annual meeting taking place in October. The Association is affiliated to the Federation of Local Pharmaceutical Associations and the West Riding Federation, and holds an annual dinner. The officers of the Association are:—President, J. B. Ellisson; Vice-Presidents, A. R. Tomlin and J. P. Norwood; Treasurer, E. Nash; Council, Messrs. Wood, Matthew, Bellamy, and Billington; Secretary, W. Rigby, Sheffield Road, Barnsley.

Birkenhead and District Chemists' Association.

The officers of this Association, which meets as occasion may require, are:—President, T. Cragg James; Secretary, W. E. Hickin, 57, Grange Road West, Birkenhead.

Blackpool and Fylde Chemists' Association.

PALATINE HOTEL, BLACKPOOL.

This Association was founded on February 19, 1900. Since its formation the Association has held meetings regularly, for the discussion of current topics, and it has been the means of a practical chemistry class being formed at the local Technical School for the benefit of pharmaceutical students. The session begins in October, and the annual meeting is held in February. The annual dinner takes place in January. The officers are:—President, C. H. Turver; Vice-Presidents, J. Laurie and J. P. Keeley; Treasurer, J. A. Buckley; Committee, Messrs. Johnson, Ashton, Mayson, Boothroyd, and Sykes; Auditors, Messrs. Richardson and Greenwood; Secretary, J. Sankey, 5, Bank Hey Street, Blackpool.

Bolton Chemists' Association.

This Association appears to have been founded in the early eighties, the first record of its meetings being published in the *P.J.* for October 14, 1882. At that time there were forty members, who met occasionally for the discussion of trade topics and an annual dinner. Since that time the Association has fallen somewhat into abeyance, the last recorded meeting having been held on July 4, 1898, to consider the Poisonous Substances Bill which had been introduced into the House of Lords. The Association still exists, however, and its Secretary is Mr. Percy Knott, 1, Blackburn Road, Bolton.

Bournemouth and District Pharmaceutical Association.

This Association was founded in 1893, and meets occasionally. An annual dinner is held, and officers are elected annually, the present officers being:—President, E. Worth; Secretary, Francis Rose, Christchurch Road, Boscombe, Bournemouth.

Bradford and District Chemists' Association.

ROYAL HOTEL, BRADFORD.

The present Association was founded in 1895, but a former Association was established in Bradford on December 22, 1868, which, however, appears to have died out about the year 1875. The new Association is among the most active of pharmaceutical associations, many important meetings having been held under its auspices. The session begins in October, and meetings are held fortnightly until March. The annual dinner takes place in April, and the annual meeting, at which officers are elected, is held in September. In connection with the Association arrangements have been made with the Bradford Municipal Technical College by which a complete curriculum is offered for pharmaceutical students, comprising in two years the whole range of subjects required for the Minor Examination, while evening classes in suitable subjects are also held. The Association is affiliated to the Federation of Local Pharmaceutical Associations and to the Federation of West Riding Chemists' Associations. The officers for the ensuing session are:—President, Henry Dunn; Vice-Presidents, A. Hanson and J. A. Mitchell; Treasurer, J. T. Metcalfe; Secretary, D. S. Priestley, 48, Whetley Hill, Bradford.

Bristol Pharmaceutical Association.

UNIVERSITY COLLEGE, BRISTOL.

This Association was founded on September 20, 1870; and while it does not meet so frequently as some younger associations, its meetings being held quarterly, yet it must be regarded as one of the "active" associations. Many important meetings have been held under its auspices, among others the meetings of the British Pharmaceutical Conference in 1875 and 1903. Classes have been arranged in pharmaceutics at University College for the benefit of local students; and there is also a library in connection with the Association. The session begins in September, the annual meeting, at which officers are elected, taking place in January, and an annual dinner in April. The officers are:—President, J. W. White; Vice-Presidents, G. T. Turner and E. F. Young; Treasurer, H. E. Matthews; Secretary, H. E. Boorne, 49, Woodstock Road, Redland, Bristol.

Burnley and District Chemists' Association.

An Association existed in Burnley during the early seventies, but subsequently fell into abeyance until a few years ago there was a revival of activity among the Burnley chemists. Now, the Association is affiliated to the Federation, and last session held several important meetings. The officers are:—President, J. A. Heaton; Vice-President, J. A. Barlow; Treasurer, C. E. Dodsley; Secretary, J. Brown, 7, Manchester Road, Burnley.

Bury Chemists' Association.

Phillip's Club, Garden Street.

This Association appears to be in some danger of dying out altogether, no meetings having been held during the past two years. The officers are:—President, J. Meadowcroft; Vice-President, Wm. Crompton; Secretary, Henry Crompton, 16, Park Hills Road, Bury.

Cambridge Pharmaceutical Association.

Bull Hotel, Cambridge.

This Association was founded on November 16, 1892. The attention of local apprentices and assistants is directed to classes in chemistry and botany held in connection with South Kensington science examinations at the Technical Institute, and the programme for the session usually comprises discussions on any important topics in connection with the Pharmaceutical Society, smoking concerts, and réunion, and lectures by scientific gentlemen connected with the University or the medical profession, as well as papers by members, and an occasional dinner and excursion. The session begins in October, when the annual meeting is held at which officers are elected. The Association is affiliated to the Federation. The present officers are:—President, A. Sidney Campkin; Vice-Presidents, Alderman A. Deck, E. H. Church, and E. S. Peck; Treasurer, H. F. Cook; Secretary, B. Sidney Campkin, 74, Mill Road, Cambridge.

Cardiff and District Pharmaceutical Association.

Park Hotel, Cardiff.

This Association was founded in November, 1900, and has justified its existence by holding several important meetings, and, what perhaps is of more importance to its members, by establishing a successful co-operative buying scheme. It has also been the means of establishing classes for "preliminary" students, conducted by Messrs. Meyrick and Stowe, and has promoted a scheme for the preparation of Minor students at Cardiff University College. The approximate programme for the session, which commenced in September and continues till May, comprises a discussion on the medicine stamp duty difficulty, smoking concert, annual meeting in November, dinner in January, several "open nights" for the discussion of current topics, and an excursion. The Association has joined the Federation of Local Pharmaceutical Associations, and has done good work in Cardiff in bringing the chemists of the town into closer touch. The officers are:—President, J. A. Jones; Vice-President, W. R. Hopkins; Treasurer, R. Drane; Hon. Secretaries, H. A. Gerhold, and H. H. Prosser, Penarth.

Cardiff Chemists' Assistants' Association.

This Association was founded on November 26, 1900, and it has since held a series of very successful meetings at which papers of pharmaceutical and scientific interest have been read, but a communication recently addressed to the Secretary has failed to elicit a reply, so that we are unable to say whether the Association is still in existence.

Chemists' Assistants' Association.

73, Newman Street, W.

This Association was founded on June 28, 1877, with the object of promoting intercourse among chemists' assistants residing in the metropolis, and the discussion of subjects tending to the welfare of all interested in pharmacy. The annual subscription is 5s., but members of provincial associations who remove to London during any particular session are eligible for election to the C.A.A. without further payment for that session. Each member receives gratis the annual report of the Association and a ticket for the Annual Reunion, which usually takes the form of a smoking concert. The forthcoming session will begin on Thursday, October 8, at 8.30 p.m., and will continue till the end of May, 1904, meetings being held each Thursday evening, with the exception of short breaks at Christmas and Easter. The programme for the session includes papers by several gentlemen well known in pharmaceutical circles, short papers and exhibitions by members, impromptu discussions on trade topics, about six musical and social evenings, and the annual dinner, which is usually held in March. The annual meeting, at which the officers are elected, is held in May, when the medals and prizes offered annually for the best pharmaceutical work done by members, and for the best essay on a subject of pharmaceutical interest, are presented. The Association has its own rooms at the above address, but, being in close proximity to the library of the Pharmaceutical Society, it has not been thought necessary to establish a library for the use of members. The officers are:—President, A. B. Britton; Hon. Vice-President, A. Latreille; Vice-Presidents, R. E. Lownsbrough and W. Matthews; Treasurer, C. J. Strother; Council, Messrs. D. C. Jones, S. C. G. Tweedy, A. V. Johns, E. Thompson, J. W. Peck, W. Garsed, and H. Haylings; Secretaries, G. E. Town and W. S. Parker (73, Newman Street, W.).

Chester Chemists' Association.

This Association has been in existence for over thirty years, meetings being called whenever any subject of importance calls for them, and classes suitable for pharmaceutical students are held in connection with South Kensington in the evenings from October to May. Secretary, W. F. J. Shepheard, 12, Bridge Street Row, Chester.

Colchester Association of Chemists and Druggists.

Three Cups Hotel, Colchester.

This Association was founded in July, 1841, and at one time possessed a small library of pharmaceutical and scientific works—about 250—which circulated among the members; the library, however, is not now in existence, some of the books having been sold, while others have been presented to the local Free Library. Acting Secretary, Mr. W. Edes Everett, 34, St. Botolphs, Colchester.

Cumberland and Westmoreland Chemists' Association.

This Association was formed on January 22, 1903, at Carlisle. Between fifty and sixty chemists attended the meeting, at which the President and Secretary of the Pharmaceutical Society were present. At a subsequent meeting the following officers were elected:—President, John Hallaway (Carlisle); Vice-President, A. Ketchen (Whitehaven); Secretary and Treasurer, T. W. Townley (Keswick); and a committee consisting of two members from each Parliamentary division of the two counties. In consequence of Mr. A. Ketchen's resignation, Mr. J. Mason was elected Vice-President. The first annual dinner was held at Carlisle on March 19, 1903, and addresses were delivered by the President, Mr. J. Rutherford Hill, and Mr. Thomas Maben, and there were thirty-one present. The counties are sparsely populated, and the chemists have not many opportunities of meeting together to discuss matters pertaining to the business; but it is felt locally that a great deal would be gained in the matter of prices, poison regulations, etc., if they could meet oftener and confer together on the difficulty of getting apprentices and other matters relating to the country chemist's business.

Darwen Chemists' Association.

11, Church Street, Darwen.

This Association was founded in April, 1898, and meets as occasion requires, officers being elected when required through resignation or other cause. It is affiliated to the Federation of Local Pharmaceutical Associations, and its members are also members of the North-East Lancashire Chemists' Association (Blackburn), two of whom serve on the Committee of that Association. The officers are:—President, Alderman R. Shorrock; Secretary and Treasurer, W. H. Lomax, Church Street, Darwen.

Derby and District Chemists' Association.

Smith's Restaurant, Derby.

This Association was founded in 1897. It is affiliated to the Federation, but does not meet regularly. In addition to an annual meeting and dinner, the Association looks after the interests of pharmaceutical students by arranging pharmacy and materia medica classes in connection with the local Technical Institute, and occasionally meets to discuss pharmaceutical politics and trade topics generally, the session extending from October to May. The officers are:—President, C. W. Warrington; Vice-Presidents, C. W. Southern, H. G. W.

Dewsbury and District Chemists' Association.

Church House, Dewsbury.

This Association was founded in March, 1898, and meets regularly on the second Monday in each month from September to May. Matters of pharmaceutical interest are dealt with as they arise, and occasional lectures are delivered. The annual meeting is held in March, and at the annual dinner one or two members of the Pharmaceutical Council are usually present. The Association was formerly connected with the Federation of Local Pharmaceutical Associations, but has now withdrawn from that body, and has united with other Yorkshire associations to form a West Riding Federation of Local Associations. The officers are:—President, R. Gledhill; Vice-Presidents, J. Rhodes (Mirfield) and R. Broadhead (Batley); Treasurer, G. N. Gutteridge; Secretary, Geo. Walker, Northgate, Dewsbury.

Dover Chemists' Association.

34, Town Wall Street, Dover.

This Association was founded in 1876, and holds its meetings quarterly, in February, May, August and November, on the third Wednesday in the month. The annual meeting is held in November, when the officers are elected. The objects of the Association appear to be to watch current events in the pharmaceutical world and to take any action that seems desirable. The officers are:—President, Alderman H. Peake; Secretary, R. M. Ewell, 37, Town Wall Street, Dover.

Dumfries and Maxwelltown Chemists' Association.

St. George's Hall, Buccleuch Street, Dumfries.

This Association was founded on September 1, 1873, and meets from time to time as occasion arises. The Association has succeeded in arranging for the closing of chemists' shops in the district at 7 p.m. on ordinary business days during May, June, July, and August of each year, and the chemists act in harmony on all trade questions. No programme is drawn up, events of current interest only being discussed. Some time ago the Association approached the Academy authorities regarding pharmaceutical education, and there are now classes conducted in the evening which partly cover the ground of the Minor syllabus. The officers of the Association are:—President, William Allen; Secretary, James Reid, Dumfries.

East Sussex Pharmaceutical Association.

This Association was founded on November 7, 1901, at Hastings, and was known for some time as the Hastings and St. Leonards Pharmaceutical Association. It has no fixed place for its meetings, which are held not less than four times yearly, sometimes at the Castle Hotel, Hastings, and at other times at the Edinburgh Hotel, St. Leonards. The session begins in September and the annual meeting is held on the first Thursday in May. The programme for this session has not yet been arranged, but there will be an annual dinner and probably an excursion. The Association is affiliated to the Federation of Local Pharmaceutical Associations. The officers of the Association are:—President, T. D. Vint; Secretary and Treasurer, Sidney Smith, Hastings.

Eastbourne Chemists' Association.

Royal Restaurant, Eastbourne.

This Association was founded in February, 1901, and its meetings, which are held during the session on the second Tuesday in each month, are chiefly of a social character, though occasionally matters of political or trade interest are discussed. The session begins in January and the annual meeting is held in December, when the officers are elected. The present officers are:—President, J. Senior; Treasurer, H. C. Browne; Secretary, S. Gibbs, 53D, Terminus Road.

Edinburgh Chemists', Assistants', and Apprentices' Association

36, York Place, Edinburgh.

This Association was founded in 1877, meetings being held fortnightly from October to April inclusive. The Association's work is mostly of an educational character, trade matters being looked after by a "Trade Association." Special features of the Association are its prize scheme for students and its botanical excursions. The annual meeting for the election of officers takes place in April, and there is also an annual dinner. The officers are:—President, A. Currie; Vice-President, A. E. Kelly; Treasurer, E. O. Rowland; Secretaries, J. W. Plenderleith, 6, North Bridge Street, Edinburgh, and H. N. Cox. There is also a Committee of eight members and a Prize Committee of six members.

Edinburgh District Chemists' Trade Association.

36, York Place, Edinburgh.

This Association was founded on December 8, 1892, and has a membership of seventy. It is affiliated to the Federation of Local Pharmaceutical Associations, and meets bi-monthly. The session begins in November, and the annual meeting is held in May. No fixed programme is arranged, but, as the name of the Association implies, it exists chiefly to look after the interests of the trade in the district. The officers are:—Chairman, W. S. Glass; Vice-Chairman, J. A. Forret; Treasurer, R. L. Hendry; Secretary, G. H. C. Rowland, 117, Prince's Street, Edinburgh.

Exeter Association of Chemists and Druggists.

The Guildhall, Exeter.

This Association existed many years ago, but fell into abeyance, and was revived again in 1890, since when it has met quarterly or whenever any questions affecting pharmacy have arisen. Support is given by the Association to the School of Pharmacy at the Royal Albert Memorial College, Exeter, and to the Federation of Local Pharmaceutical Associations. A prominent feature of the Association is the interest taken in the Sunday labour question, an arrangement having been made whereby the members relieve each other of Sunday duty alternately. The annual meeting is held about Lady Day, when the officers are elected. The officers are:—President, F. W. Vinden; Treasurer, J. W. Lake; Secretary, H. Wippell Gadd, Fore Street, Exeter.

Federation of West Riding Chemists' Associations.

The Federation of West Riding Chemists' Association was formed on September 20, 1902, and its formation was due to the suggestion of Mr. W. Stead, of Heckmondwike. The ordinary meetings are held half-yearly, in October and April. Special meetings may be convened at any other time as required. The following associations are affiliated with the Federation: Bradford, Barnsley, Dewsbury, Halifax, Huddersfield, and Wakefield. The meetings of the Federation are held at any of the above towns, as arranged by the Council of the Federation. The objects of the Federation are laid down as:—"To promote simultaneous discussion of all important matters affecting registered chemists, with a view to arriving at more unanimous and consolidated opinions in regard thereto, and securing united action in any steps it may be considered desirable to take with the object of furthering the interests of those engaged in the practice of pharmacy." President, R. W. Walshaw (Huddersfield); Vice-President, J. A. Mitchell (Bradford) and W. Pollard (Wakefield); Secretary and Treasurer, R. Broadhead, Batley.

Forfarshire and District Chemists' Association.

Dundee.

This Association was reconstituted in 1897. and has since joined the Federation of Local Pharmaceutical Associations. Ordinary meetings are held in Dundee as the need arises for the discussion of questions of pharmaceutical interest. The annual meeting and dinner are held in June, the different towns in the district being visited in turn. The library and cabinet of materia medica are located, *pro tem.*, with the Secretary. The officers are:—President, Wm. Park (Broughty Ferry); Vice-President, J. H. Thomson (Lochee); Secretary and Treasurer, Wm. Cummings, 49, Reform Street, Dundee.

Glasgow and West of Scotland Chemists' Trade Association.

This Association was founded in May, 1902, (1) to promote the trade interests of its members; (2) to regulate the prices of proprietary and other articles; (3) to approach manufacturers to fix a minimum retail price for their goods; (4) to communicate with other associations in order to secure their cooperation and support in attaining the foregoing objects.

Glasgow and West of Scotland Pharmaceutical Association.

94, West Regent Street, Glasgow.

This Association was founded in 1892. It is affiliated to the Federation, and has a library and microscopes and materia medica cabinet for the use of students. The session begins in November, the officers being elected at an annual meeting in October. No special programme is arranged, meetings being called whenever necessary, and there is also an annual dinner. Secretary, J. P. Gilmour, 312, Cathcart Road, Govanhill.

Glasgow Chemists' Assistants' Association.

25, Bath Street, Glasgow.

This Association was founded on April 12, 1899, and has since met regularly every fortnight during the session, which extends from the beginning of October to the end of March. The objects of the Association are to promote social intercourse among its members, to arrange for lectures and discussions of an educational nature, and to consider any subject concerning the welfare of chemists' assistants. Hon. President, W. L. Currie; President, W. W. Mollison; Secretary, F. Bewglas, 733, Dumbarton Road, Partick.

Great Yarmouth Pharmaceutical Association.

156, King Street, Great Yarmouth.

This Association was founded in March, 1899, and meetings are held on the first Thursday in each month from October to April. The annual meeting is held in April, when the officers are elected. The programme includes social items, such as an annual dinner and an excursion, the remaining meetings being devoted to the discussion of matters affecting pharmacy. The Association is connected with the Federation, and its officers are:—President, W. Sheppard Poll; Committee, Messrs. T. B. Male, J. F. Roberts, J. S. Shearman; Secretary and Treasurer, Harvey Palmer, 5, Market Place, Yarmouth.

Grimsby and District Chemists' and Druggists' Association.

Oberon Hotel, Grimsby.

This Association was founded on March 15, 1894, and at one time possessed its own rooms and a library of books suitable for pharmaceutical students; it still has the library, but the rooms have been given up. The annual meeting for the election of officers, etc., is held in March. General meetings are held quarterly; special general and committee meetings being held when necessary. No programme is arranged, as the Association does not profess to be a scientific one, being content to promote social intercourse and discuss trade subjects, and any legislation affecting the interests of the craft generally. An annual dinner is held, and the Association is affiliated with the Federation. The Association is not directly responsible for any arrangement on educational matters, the Borough Educational Committee teaching such technical subjects as chemistry, botany, magnetism, electricity, etc. The officers of the Association are:—President, R. Cook; Vice-President, C. Willson; Treasurer, J. Hawdon; Secretary and Librarian, Herbert W. Colley, 253, Cleethorpe Road, Grimsby.

Halifax and District Chemists' Association.

Old Cock Hotel, Halifax.

This Association was founded on December 10, 1868. It has no pre-arranged programme, but it meets monthly, looks well after the interests of its members, and is affiliated to the Federation. One of the chief features of the Association is a "Trade section," which buys "patent" medicines in quantity from the manufacturers and re-sells to the members. The session begins in September; the annual meeting is held in January, for the election of officers, and an annual dinner is also held. The officers are:—President, Thos. Briggs; Vice-President, Gibson Dixon; Treasurer, J. Swire; Secretary, W. R. Black, 14, Southgate, Halifax.

Harrogate and District Chemists' Association.

Salisbury Hotel, Harrogate.

This Association was formed on April 8, 1903, at a meeting called to consider the Pharmacy Acts Amendment Bill, 1903. The officers are:—President, C. E. J. Eynon; Secretary and Treasurer, T. E. Handford, 1, Station Bridge, Harrogate.

Huddersfield and District Chemists' Association.

This Association was founded on October 30, 1901, and at the present time numbers about thirty members. Meetings are held on the second Wednesday in each month, the session beginning in October, when the annual meeting for the election of officers is held. There is an annual dinner, and the Association is affiliated to the Federation. The approximate programme for the session comprises papers and discussions on trade topics, pharmaceutical politics, etc. The present list of officers—which, however, is liable to alteration at the annual meeting to be held early this month—is as follows:—President, R. C. Walshaw; Vice-Presidents, H. E. Spurr and S. Stephens; Secretary and Treasurer, J. W. B. Johnson, 4, Birkby Hall Road, Huddersfield.

Hull Chemists' Association.

Imperial Hotel, Hull.

This Association was founded in October, 1868, but at present only meets as occasion may require. Classes for pharmaceutical students were at one time conducted in connection with the Association, but they had to be discontinued on account of the apathy and bad attendance of the apprentices and assistants. Secretary, C. B. Bell, 6, Spring Bank, Hull.

Inverness Chemists' Association.

This Association meets as occasion may arise. President, John Fraser, 19, High Street; Secretary, Campbell Allan Connan, 13, Castle Street.

Leamington, Warwick, and Kenilworth Chemists' Association.

This Association is in abeyance at present, no meetings having been held recently. Secretary, G. R. Fisher, 35, Bath Street, Leamington Spa.

Leeds Chemists' Association.

Church Institute, Leeds.

This Association was founded on December 22, 1862, when it was decided "That a Society be now formed, to be called the 'Leeds Chemists' Association,' which shall be independent of any existing central societies, and shall have for its objects the mutual improvement and general advancement of the interests of its members and the better scientific education of its assistants and apprentices." For many years the Association lived up to its objects and did a good work in Leeds. At the present time it has an excellent library and museum for the use of students, but does not meet quite so frequently as in its early days, though the members are prompt to respond to the call of the Secretary should occasion require their presence at any special meeting to discuss subjects of current interest. The annual meeting and annual dinner are held in October, and the present officers are:—President, F. W. Branson; Vice-President, G. W. Worfolk (Ilkley); Treasurer, W. D. Pollitt; Committee, Messrs. F. Fearnley, G. Jackson, W. Johnson, F. P. Sergeant, G. Ward, and E. Yewdall; Auditor, J. H. Beacock; Secretary, F. C. Long, 35, Otley Road, Leeds.

Leicester and Leicestershire Chemists' Association.

This Association was founded some seven years ago as the Leicester Chemists' Social Union, but last session its title was altered to the Leicester and Leicestershire Chemists' Association. The annual subscription is 5s., and assistants 2s. 6d. per annum. An annual dinner is held, usually about April, and it is satisfactory to learn that nearly every chemist in Leicester and a number in the county are members. President, G. J. B. Woolley; Treasurer, G. Marfitt; co-Secretaries (Hon.), F. W. Goodess, 1, Friar Lane, Leicester; A. D. Hearnshaw, Welford Road, Leicester.

Lincoln and District Chemists' Association.

Coffee Palace, Lincoln.

This Association was founded in 1899. The meetings, which are held occasionally, are mostly of a social character, but matters of importance to pharmacy are discussed as they arise, and the Association is affiliated to the Federation. The annual meeting for the election of officers is held in November. The present officers are:—President, J. S. Battie; Treasurer, F. P. Watson; Secretary, J. T. Birkbeck, 5, Bailgate, Lincoln.

Liverpool Chemists' Association.

Royal Institution, Colquitt Street, Liverpool.

This Association is one of the oldest local Chemists' Associations in this country, having been founded, through the exertions of Jacob Bell, in 1849, and has not been in abeyance since; it is not, however, the oldest Association, a Chemists' Association having been formed at Colchester as early as 1841, while the Aberdeen Pharmaceutical Association was founded in 1839. Still, there can be no doubt that in the matter of activity the Liverpool Association has for many years past taken the lead in scientific and pharmaceutical matters. The Association possesses its own rooms, and has both a library and museum connected therewith; also arrangements are made with the Liverpool School of Pharmacy for the education of pharmaceutical students, under the supervision of an Educational Committee, consisting of Messrs. T. F. Abraham, C. Symes, and T. S. Wokes. Meetings of the Association are held bi-monthly, excepting during the summer, the session beginning in October, when the annual meeting is held. No general programme is published, papers on subjects of pharmaceutical and scientific interest being occasionally contributed by members, and discussions on current topics are arranged, as well as an annual dinner and other meetings of a social character. The present officers are:—President, R. C. Cowley; Treasurer, W. Wellings; Secretaries, T. H. Wardleworth, 56, Hanover Street, and G. R. Tharratt, 55, Myrtle Street, Liverpool. There is also a Council consisting of twenty-one members.

London Chemists' Association.

Holborn Viaduct Hotel, E.C.

This Association is the youngest pharmaceutical association in the metropolis, having been founded little more than a year ago—on January 27, 1902—the first meeting of London chemists, to consider the desirability of forming a London association, having been held on November 21, 1901. The principal object of the Association is to watch local events and to be prepared to promptly take up any matter affecting the interests of London chemists in particular and pharmacy generally. The approximate programme of the session, which commences during the current month, comprises two general meetings, to be held in November and May, at least four meetings of the General Purposes Committee, and four meetings each of members arranged by the South and North London branches of the Association. The annual meeting will be held in May. So far, an annual dinner has not been arranged, but the Association has recognised the value of a national federation of associations, and has been prompt to join the Federation of Local Pharmaceutical Associations. The present officers of the Association are:—President, T. H. W. Idris; Vice-Presidents, W. S. Glyn-Jones and R. H. Jones; Chairman of General Purposes Committee, A. Cooper; Vice-Chairman, J. C. Umney; Treasurer, G. P. Pond; Secretary, R. B. Betty, 1, Park Street, Regent's Park, N.W.

Manchester Pharmaceutical Association.

Victoria Hotel, Manchester.

This Association was founded as the Manchester Chemists' Conversational Society in March, 1852, which subsequently—on May 2, 1854—amalgamated with the Manchester Chemists' and Druggists' Institute, and was afterwards called the Manchester Pharmaceutical Association. Like its contemporary, the Liverpool Association, it has for many years taken a prominent part in local scientific and pharmaceutical matters, particularly in regard to the education of students of pharmacy. The Manchester Pharmaceutical Association Scholarship, of the value of about £26 annually, to be expended for instruction in the School of Pharmacy of the Pharmaceutical Society, or in the provincial school selected by the scholar, and approved by the Council of the Society, is almost as well known as the Jacob Bell Scholarships; but, in addition to that and a library for the use of members, the Council of the Association offers for competition among the apprentices and assistants of Manchester, a first prize of the value of one guinea (to be expended in books), the gift of Mr. G. S. Woolley, and a second prize of the value of half a guinea (to be expended in books), given by the Association to apprentices and students under twenty years of age. The Association is affiliated to the Federation of Local Pharmaceutical Associations, and meetings are held monthly, on the second Wednesday in the month, from October till April, when the annual meeting for the election of officers is held. The annual dinner and smoking concert will be held at the Albion Hotel, Piccadilly, on Wednesday, October 14, at 7 p.m. The officers are:—President, G. S. Woolley; Vice-Presidents, H. Kemp and W. Kirkby; Treasurer, A. J. Pidd; Council, Messrs. J. Grier, W. Lane, D. Lewis, F. W. Ringer, G. L. Westmacott, and J. Wild; Secretary, J. C. Kidd, 551, Cheetham Hill Road, Manchester.

Midland Pharmaceutical Association.

University of Birmingham.

This Association was founded on November 10, 1847, as the Birmingham Pharmaceutical Association, and lectures were delivered by Professors Shaw and Knowles during the session 1848-1849. A library was established in 1849, and subsequently a museum (1850) at the Philosophical Institution, Cannon Street. Later the Association became known as the Midland Pharmaceutical Association. The session begins in November, and meetings are held monthly on the second Tuesday or Thursday in the month. The Association is affiliated to the Federation, and although the meetings are generally of scientific or pharmaceutical interest, politics and social matters are not neglected, an annual dinner being held, and matters of importance to the trade are occasionally discussed. The annual meeting is held in May, when the Council is elected, officers being chosen subsequently. The present officers are:—President, A. W. Gerrard; Vice-Presidents, F. H. Alcock and F. W. Lowther; Treasurer, J. C. Mackenzie; Librarian, A. W. Southall; Secretary, J. A. Radford, 14, Union Street, Birmingham.

Newcastle-upon-Tyne and District Chemists' Association.

Hotel Metropole, Newcastle.

This Association was founded January 27, 1897, and has always endeavoured to work on lines conducive to improved business relations among its members and the craft generally in the district; to keep in touch with the local members of Parliament in all matters of interest, and to assist the Pharmaceutical Society in perfecting its scheme of local organisation in the north-east district. A committee of the Association has also been appointed to co-operate with the principal of the North of England School of Pharmacy with a view to promoting the advancement of pharmaceutical education in the district, and there is a committee engaged in endeavouring to secure from the Technical Education Committee of the local Councils grants in favour of pharmacy students. The session begins on October 14, when the annual meeting will be held and a new executive elected; also a programme for the session will be drafted. Papers of scientific, educational, and trade interest will be discussed, and the session will also include an annual dinner, a "smoker," and an excursion in conjunction with the Sunderland Chemists' Association. The present officers are:—President, George F. Merson; Vice-Presidents, Messrs. Wright, Ridley, Dudderidge, Clague, Gilderdale, and Ellis; Auditors, Messrs. Whitehead and Dean; Treasurer, W. Kerse; Secretary, W. Atkins, 126, Raby Street, Newcastle-upon-Tyne.

Newport and Monmouthshire Chemists' Association.

This Association was founded about the beginning of the year 1898, but for some time past it does not appear to have held any meetings. Secretary, B. Harries, 84, Commercial Road, Newport (Mon.).

North-East Lancashire Chemists' Association.

White Bull Hotel, Blackburn.

This Association has been in existence since 1894 but prior to that year a Blackburn Association of Chemists held meetings intermittently for twenty-five years. At the present time the Association meets as required. It deals with educational matters for the benefit of local students, but the greatest interest centres around its political work. The annual meeting is held in October, and an annual dinner is usually held in February. The present officers are:—President, Councillor Critchley; Vice-Presidents, Alderman R. Shorrock (Darwen) and W. Wells; Treasurer, C. A. Critchley; Committee, Messrs. J. W. Aspinall, R. L. Gifford, W. Grimshaw, W. Pickup, E. Highton, J. Hindle, W. Holt, J. Needham, and H. Howarth; Secretary *(pro tem.)*, Jos. Hindle, 76, Copy Nook, Blackburn.

North Kent and District Chemists' Association.

This Association was formed in March, 1903, and meetings are arranged for the various towns in the district. Meetings are held once a month, with the exception of the months of June, July, August, and September. The number of members at present is about thirty-five, but it is expected that there will be a considerable increase during the coming session. The officers are:—President, A. Stooke (New Brompton); Vice-President, D. V. Still (Woolwich); Committee, A. F. Corfe (Maidstone), W. E. Goff (Dartford), A. Goldthorpe (Plumstead), A. W. Hanson (Sidcup), E. Millhouse (Gravesend), J. C. Mitchell (Grays), E. Ockwell (Crayford), W. Stedman (West Malling), A. V. Wing (Woolwich); Secretary and Treasurer, R. Feaver Clarke, 21, High Street, Gravesend.

North London Branch of the London Chemists' Association.

The North London Branch of the London Chemists' Association was inaugurated on October 23, 1902, and now comprises some 140 members. The subscription is 5s. annually, payable from the time of joining, only chemists on the Register being eligible for membership. The Association is affiliated to the Federation. The meetings, which are held about four times a year, are for the discussion of trade matters and social gatherings, and are generally held at the works of Messrs. Idris, Pratt Street, Camden Town; occasionally in other parts of the district, which includes Hornsey, Hampstead, North, West, and East St. Pancras, Hackney, Islington, Haggerston, Bethnal Green, and Tottenham. The motto of the branch is "Conjunctio Viribus." The officers are:—Chairman, P. H. Burton; Vice-Chairman, J. Edwards; Committee, Messrs. Cooper, Coutts-Michie, Daniel, Foot, Glyn-Jones, Gulliver, Idris, Jones, Pentney, Pond, Seldon, Tice, and Umney; Secretary, R. B. Betty, 1, Park Street, Regent's Park, N.W.

North Staffordshire Chemists' Association,

Roebuck Hotel, Stoke-on-Trent.

This Association was founded in 1896, and its work is mostly social and political, meetings being held on the second Thursday in each month from October to March. The annual meeting for the election of officers is held the first Thursday after Easter. There is an annual dinner, and the Association is affiliated to the Federation. With regard to educational work the Association has a small library, but beyond the library nothing is done to promote the education of pharmaceutical students, as there are good and suitable classes in chemistry, botany, physics, etc., at the Hanley Higher Grade Evening School and other Science Schools in the Pottery towns. The officers of the Association are:—President, John Averill (Stafford); Vice-Presidents, T. C. Cornwell (Hanley), and Wm. Oldham (Burslem); Treasurer, Weston Poole (Newcastle-under-Lyme); Secretaries, Edmund Jones, Miles Bank, Hanley, and Thos. Bentley, 27, Stoke Road, Hanley.

Northampton and District Chemists' Association,

Black Boy Hotel, Northampton.

This Association was founded in 1899, and meets on the third Friday in each month during the winter session, which begins in October. The annual meeting for the election of officers, etc., is held in March, and the annual dinner at the end of the session. The programme for the session is not yet to hand, but judging from that of previous years it will doubtless comprise papers of a scientific or pharmaceutical character, discussions on trade topics, and social events. The Association is affiliated to the Federation of Local Pharmaceutical Associations. The officers are:—President, W. D. Mayger, Regent Square; Secretary, Fred Cowdery, 4, Parade, Northampton.

Nottingham and Notts Chemists' Association.

This Association was founded in 1864, and has a membership at the present time of fifty-six members, eight associate members, and three honorary members. If there is one thing more than another that this Association has done well, it has been its educational work, which was for many years a special feature. Classes are now arranged by the University College, in consultation with the Association, suitable for both Minor and Major courses. There is a library attached to the Association, the books circulating among the members. Evening meetings are held on the first Wednesday in each month from October to May, except on the occasion of the annual dinner. The Association is connected with the Federation, and the annual meeting for the election of officers is held in May. The present officers are:—President, R. Fitzhugh; Vice-President, T. Wilson; Treasurer, A. Middleton; Council, Messrs. Beilby, Sergeant, Beverley, Bolton, Beachell, Smith, Rayson, and D. Ellis; Secretaries, A. Eberlin, 2, Chapel Bar, and W. Gill, 207, Radford Road, Nottingham.

Oxford and District Chemists' Association.

Golden Cross Hotel, Cornmarket Street, Oxford.

The Association was founded in February, 1897, and it meets on the second Tuesday in each month during the session, which begins on October 13. The officers are elected at the annual general meeting in March. No programme is arranged, as the Association does not profess to be a scientific one, the object being to promote social intercourse and discuss trade subjects and any legislation affecting the interests of chemists generally. There are sixteen members, and the Association is affiliated to the Federation. The officers are:—President, G. C. Druce; Vice-Presidents, C. Clayton and J. A. R. Burbank; Secretary and Treasurer, J. Dolbear, 108, High Street, Oxford.

Peterborough and District Chemists' Association.

The Angel Hotel, Peterborough.

This Association was re-formed after some years of abeyance, on April 2, 1903, at a meeting held under the presidency of Mr. J. Pearson. At a subsequent meeting about fifty chemists expressed their desire to join the Association, and the following officers were elected:—President, J. H. Pearson; Vice-Presidents, John Sturton, J. S. Prior, and F. Oldham; Secretary and Treasurer, J. E. Saunders, Narrow Street, Peterborough.

Plymouth, Devonport, Stonehouse and District Chemists' Association.

7, Whimple Street, Plymouth.

This Association was founded in 1893, and at the present time has about one hundred members—juniors and seniors. Meetings of the Committee are held monthly, and of members quarterly, or special meetings are called if necessary. The Association has rooms of its own, as well as a library and museum for the use of members. Its objects are partly social, but matters of trade interest are keenly watched, and action is promptly taken as thought desirable. No special arrangements are made to promote the education of pharmaceutical students, the classes at the local technical schools fulfilling most requirements. The Association is affiliated to the Federation, and the session, which begins in October, includes an annual dinner in November, an excursion in June or July, and the annual meeting in October, when officers are elected. The present officers are:—President, J. Davey Turney; Treasurer, J. Barge; Secretary, G. Fairweather, 11, Embankment Road, Plymouth. In 1897 a branch of the above was formed, entitled the Trade Section, to which only chemists in business are admitted, the object of which is mutual help in purely business matters which are outside the scope of the parent Association. It is governed by a chairman and committee, and has a record of very useful work. The officers for the present year are:—Chairman, F. Maitland; Treasurer, F. A. Spear; Secretary, A. Perkins, 15, Cumberland Street, Devonport.

Poor-law Dispensers' Association.

Surrey House, Victoria Embankment, London.

This Association was reformed in May, 1902, after a short period of amalgamation with the Public Dispensers' Association. The annual subscription is 2s. 6d., all Poor-law dispensers in London and the provinces being eligible for membership. The officers of the Association are :—President, Montagu G. Smith; Vice-President, A. Darch; Treasurer, G. B. Walker; Secretary, H. D. Kelf, Southwark Infirmary.

Preston and District Chemists' Association.

White Horse Restaurant, Preston.

This Association was founded on March 31, 1899, but subsequently almost died out; last session, however, considerably more interest was taken in the Association. The session begins on the first Thursday in October, when the annual meeting is held, subsequent meetings being held as required. President, C. A. Arkle, Fishergate; Secretary, F. A. Williamson, Garstang Road, Preston.

Public Dispensers' Association.

St. Bride's Institute, Ludgate Circus, E.C.

This Association was founded in 1897 and amalgamated with the Poor Law Dispensers' Association in 1900, but the two associations have since dissolved partnership. Its objects are briefly, "to protect and further the interests of all dispensers in public institutions, and generally improve their position." Formerly, all dispensers in the public service were eligible for election to membership, but on June 11, 1902, it was decided at a special meeting of the Association that after that date "no dispensers are eligible for membership unless they hold the qualifying certificate of the Pharmaceutical Society." The annual subscription is 2s. 6d., and all registered dispensers throughout the country are invited to join the Association, which meets on the last Wednesday in the first five, and tenth and eleventh months of the year. The annual meeting is held in January, and the programme for the session includes lectures and demonstrations and discussions, and efforts are made to increase practical and theoretical knowledge of subjects pertaining to the calling, while occasional social and musical evenings are held, as well as an annual smoking concert. The officers for the current session are :—President, T. H. W. Idris; Chairman of Council, W. Duff; Vice-Chairman, F. Noad Clark; Treasurer, H. H. Hewitt; Council, Messrs. S. B. Donnan, W. E. Kinsman, W. E. Miller, R. Welford, G. W. Lindsay, T. Whitmore Peck, and W. H. Windmill; Secretary, H. T. Samuel, Ravenscourt, Wilton Road, Muswell Hill, N.

Scarborough Chemists' Association.

Albemarle Hotel, Scarborough.

This Association was founded in 1897, and meetings are held occasionally as circumstances require. The annual meeting is held in November. The officers are :—President J. Whitfield; Vice-President, H. Chapman; Secretary, R. Gilchrist, 73, Newborough, Scarborough.

Sheffield Pharmaceutical and Chemical Society.

Montgomery Hall, Sheffield.

This Society was founded in 1868, and has since that time done a good work in Sheffield in looking after the education of the apprentices and assistants of the town, as well as in promoting social intercourse among Sheffield chemists, and in watching trade interests generally. Meetings are held monthly during the session, which usually commences with the annual dinner in October at the Wharncliffe Hotel. The programme for the session includes a smoking concert, ball, excursion, discussion on current events, and scientific papers. The annual meeting for the election of officers is held at the end of September. Formerly the session was opened by an inaugural address by some prominent pharmacist, who also distributed prizes to the successful students; but this year, we understand, no inaugural address or distribution of prizes will take place. The Society is affiliated to the Federation, has rooms of its own, and a library for the use of students; also classes are held in connection with University College. The officers are :—President, John Austen; Vice-Presidents, A. R. Fox and C. F. Carr; Treasurer, G. Squire; Secretary, H. Antcliffe, Union Dispensary, West Bar, Sheffield.

South London Branch of the London Chemists' Association.

The South London Branch of the London Chemists' Association was formed at a meeting held at Camberwell on April 30, 1902, when Messrs. J. Brown, C. Bunker, J. Butterworth, S. Dawson, R. H. Jones, A. Pellow, F. Powell, H. Slater, F. Truman, D. White, W. Watson Will, and R. Willson were appointed a local committee to arrange regular meetings of the Association in different parts of South London. Three meetings have since been held, and the branch now comprises about one hundred members. The officers are :—Chairman, F. W. Truman; Secretary, R. H. Jones, 88, Norwood Road, S.E.

Southport and District Chemists' Association.

This Association was founded on May 18, 1899, and subsequently held several important meetings, but for some time past the Association does not appear to have met. Secretary: W. Pearson, 18, Great George's Road, Waterloo, Liverpool.

Stockport Chemists' Association.

The County Restaurant.

This Association was formed in December, 1879, with Mr. Harvey Lowndes as President, Mr. Samuel Kay, Treasurer, and Mr. Wm. Billing Orton as Secretary, all the chemists (26) in the town being members. Subscription, 5s. per annum. At the present time the Association meets on the first Wednesday evening in the month at nine o'clock. The officers are: President Samuel Kay; Treasurer, J. C. Arnfield; Secretary, William Billing Orton, St. Peter's Square.

Sunderland Chemists' Association.

Grand Hotel, Bridge Street, Sunderland.

This Association was founded on November 11, 1863, and at the present time has a membership of twenty-seven. Ordinary meetings are held during the first week in January, April and July, the annual meeting is held in October, and the annual dinner in November. There is also an excursion in conjunction with the Newcastle-on-Tyne Association. The Association is not directly responsible for any arrangement on educational matters, the subject having been under consideration, but it was found that the small number of apprentices engaged in the town, and the different standard of education required by each, rendered it impossible for the Association to draw up any scheme for their assistance. The officers are:—President, the Mayor of Sunderland, Ald. H. J. Turnbull; Vice-President, R. H. Bell; Treasurer, John Mitchinson; Secretary, A. W. Golightly, 9, Bridge Street, Sunderland.

Swansea and District Chemists' Association.

Cameron Arms Hotel, Swansea.

This Association appears to have been founded in the early nineties and meets occasionally for the discussion of pharmaceutical politics and an annual dinner. The officers are :—President, J. Davies; Committee, Messrs. Grose, Harris, and Davies (Swansea), and Arnold (Cwmavon); Secretary, John Davies, 75, Oxford Street, Swansea.

Teeside Chemists' Association.

Tate's Café, Stockton-on-Tees.

This Association was founded on December 5, 1900, meetings being held as occasion arises. The session begins in October, and the annual meeting is held in January; there is also an annual dinner in connection with the Association. The officers are:—President, R. R. Bainbridge, 4, Van Mildert Terrace, Stockton-on-Tees; Treasurer, A. Lee, chemist, Marton Road, Middlesbrough; Secretary, W. Finlayson, 141, High Street, Stockton-on-Tees.

Thames Valley Chemists' Association.

This Association was formed on April 1, 1903, at a meeting held at Richmond, under the auspices of the London Chemists' Association, Mr. Alfred Higgs, J.P. (Kingston) in the chair. At a subsequent meeting, on April 21, it was arranged that an annual general meeting be held during April in each year, and the subscription payable by members be 5s. per annum.

The Association covers the following places:—Barnes, Putney, Mortlake, Kew, Brentford, Hounslow, Richmond, Twickenham, Teddington, Kingston, Hampton, Molesey, Merton, and Wimbledon. The motto of the Association is "Nihil Sine Unitate." President, Alfred Higgs (Kingston); Vice-President, J. Parrott (Richmond); Treasurer, C. J. Palmer (Twickenham); Auditor, H. F. Peake (Twickenham); Secretary, F. Harvey, 1, Claremont Road, Surbiton.

Torquay Chemists' Association.

Pavilion Hotel, Torquay.

This Association was founded in February, 1901, and it embraces the Parliamentary Division of Torquay, including Paignton, Brixham, and Dartmouth. Every chemist in Torquay belongs to the Association, and a co-operative buying scheme, in which the majority of members take part, has been a great success. The annual subscription is 2s. 6d. The session begins in the autumn, and meetings are held as occasion arises, the annual meeting being held in March for the election of officers. The objects of the Association are:—"(1) Promotion of a friendly business relationship with all those engaged in the trade; (2) Discussion of trade questions; (3) Urge the Pharmaceutical Society to pay attention to trade questions." The officers of the Association are:—President, J. Newlyn; Vice-President, W. J. Rawling; Treasurer, H. F. Bourne; Secretary, J. Young, 18, Fleet Street, Torquay.

Tunbridge Wells and District Chemists' Association.

The Castle Hotel, Tunbridge Wells.

This Association was founded on March 10, 1898, and is affiliated to the Federation of Local Pharmaceutical Associations. Meetings are held quarterly. The Committee of the Tunbridge Wells Technical Institute provide special classes in chemistry, physics, and botany to cover the syllabus of the Pharmaceutical Society's examinations, and also offer the opportunity for practical work. The Committee of the Institute is also arranging suitable classes in chemistry and physics for students who intend to matriculate for the University of London, and for those who desire to take the Intermediate B.Sc. An annual dinner is held in connection with the Association, and the annual meeting is held in March. The officers are:—President, H. S. Pearmund; Vice-President, A. E. Hobbs; Treasurer, A. J. Gower (Tonbridge); Secretary, S. V. Booth, 25, Grosvenor Road, Tunbridge Wells.

Wakefield and District Chemists' Association.

Victoria Temperance Hotel, Wakefield.

This Association was founded on November 20, 1901, when it was arranged to hold meetings on the first Tuesday evening in each month during the session. The officers are:—President, W. Pollard (Wakefield); Vice-President, G. Hodgson (Hemsworth); Committee, Messrs. J. H. Chaplin, T. C. Whaley, A. Green, and C. W. Duffin; Secretary and Treasurer, J. Judge, 52, Northgate, Wakefield.

West Ham and District Chemists' Association.

The Earlham Hall, Forest Gate, E.

This Association was formed in March, 1903, and now has a membership of between thirty and forty. The Association was the outcome of a desire among the chemists of the district to close on Thursday afternoon in each week. Meetings are held on the second Thursday in the month, and so far members have shown great interest in the work of the Association. The officers are:—President, Harold Mitchell; Committee, Messrs. W. R. Barnes, W. Forbes, M. Jones, J. H. Matthews, Hy. Soper; Secretary and Treasurer, F. Walter Gwinn, 143, Cann Hall Road, Leytonstone.

Western Chemists' Association (of London).

Norfolk Square Hotel, London, Paddington, W.

This Association was founded in 1890, its objects being to promote friendly and social intercourse amongst all persons carrying on the business of a chemist and druggist; the consideration and discussion of all matters affecting their trading and professional status; and to watch any proposed legislation affecting their interests, and, if deemed necessary, take action therein. The session begins on the third Wednesday in October and continues till May, the annual meeting being held in October, at which a committee of eleven members is elected for the session, the officers being chosen at a subsequent meeting of the Committee. The programme includes two smoking concerts, an annual dinner, and five evenings for the discussion of current pharmaceutical matters. The present officers of the Association are:—President, J. W. Bowen; Vice-President, Frank A. Rogers; Treasurer, H. Cracknell; Secretary, W. J. I. Philp, 34, High Street, Notting Hill, W.; Committee, Messrs. A. J. B. Cooper, W. F. Gulliver, J. F. Harrington, J. Hick, R. H. Jones, W. Warren, and A. G. Worsley. The officers for the ensuing session will be elected at the meeting to be held on October 21 next.

Wigan and District Chemists' Association.

York Chambers, Wigan.

This Association was formed in August, 1899, at a meeting convened by Mr. J. Phillips in York Chambers, the object being to promote a feeling of good fellowship among members of the craft and to discuss matters affecting chemists locally and in general. The annual subscription is 2s. 6d., and all the chemists of the town and district are members. Meetings are held when required. The Association has done much to amend the hours of business, schemes for closing on Bank Holidays and for reducing the hours of attendance on Sundays having been adopted; while the C.D.A. and P.A.T.A. have always found ready friends in Wigan. An annual dinner is held, and is the principal social event of the year. The officers are: — President, Thomas Johnson; Vice-President, J. Phillips; Secretary and Treasurer, T. H. Winstanley, 9, Market Street, Wigan.

Wolverhampton and District Chemists' Association.

Star and Garter Hotel, Wolverhampton.

This Association was founded in January, 1900, and is affiliated to the Federation of Local Pharmaceutical Associations. It may be mentioned, however, that an Association of Chemists was established in Wolverhampton on December 4, 1874, having for its objects the better scientific education of its associates, and the protection, general advancement, and mutual improvement of its members. The session 1903-04 extends from March to February, meetings being held monthly except in June, August and September. The programme includes a smoking concert on October 8 next; an address by Mr. J. Rymer Young on November 4; a paper by Mr. F. H. Alcock on December 9; an address by Mr. G. E. Perry on January 6, 1904; and the annual meeting on February 3. The officers are:—President, F. A. Willcock; Vice-President, H. E. Cullwick; Treasurer, A. C. Weaver; Committee, Messrs. E. Coombe, H. Forster, F. J. Gibson, S. Phillips, and M. R. Warner; Secretary, J. H. Coleman, 7, Worcester Street, Wolverhampton.

Workington Chemists' and Druggists' Association.

This Association was founded on October 18, 1899, and is affiliated to the Federation of Local Pharmaceutical Associations. Meetings are held as occasion requires, the object of the Association being to promote social intercourse among the chemists of the district and to look after their interests generally. The annual meeting for the election of officers is held in December. The present officers are:—President, J. R. Mason; Vice-President, F. J. Birkett; Secretary and Treasurer, J. R. Taylor, Workington.

Wrexham and District Chemists' Association.

This Association was founded on January 24, 1899, by the chemists of Wrexham and district, "for the purpose of defending their privileges and as a means for the discussion of trade topics." Meetings are held occasionally to discuss legislation affecting chemists. The officers are:—President, C. G. Caldecott; Secretary, J. B. Francis, the North Wales Pharmacy, Wrexham.

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

Barnard Simpson Proctor.

May I be allowed to say here with what sincere regret I heard of the death of my old master—Barnard Proctor? Others more competent may do greater justice to his memory, but few can think of him with greater respect and regard than the writer. My tenure with Mr. Proctor lasted nearly four years, and was commenced in a manner characteristic of the man; he was looking for a managing assistant, and my name, presumably, had been mentioned to him. I was at this time managing a business at Tynemouth, and one afternoon two ladies (whom I subsequently recognised as Mrs. and Miss Proctor) came in with a prescription for some pills and mixture. The formulæ for these figure as numbers eight and twenty-one in Proctor's 'Pharmacy'; but I did not know this at the time. I have always been in the habit, when dispensing poisons in Schedule 1, of taking not alone the name but the address of the person for whom it is dispensed; and on asking for this in the usual way, I was surprised at its refusal, in fact, the ladies maintained so mysterious a demeanour that in the end I declined to make up the mixture, but supplied the pills. A few days later Mr. Proctor came in and we had some conversation, and within a week or so a letter came to hand explaining the expisode of the prescription; it appeared I had satisfied him in the matter of carefulness and accuracy, "perhaps a little too careful, considering the dose," concluding with an offer which, on the advice of friends, I accepted. Had I made up those drops Mr. Proctor would have determined the quantity of hyd. perchlor. quickly, accurately, and quite as a matter of daily routine. Two vivid impressions of Mr. Proctor remain with me; he was apparently honorary consulting chemist to the city and county. In a district where chemists (not druggists) lived in goodly numbers, there were many who, when their analyses were, so to speak, in a tangle, were very glad to consult Mr. Proctor. I cannot call to mind any fees being paid for these impromptu consultations, an expression of thanks being the usual termination. I would not suggest, of course, that Mr. Proctor never received a satisfactory equivalent, but the expert opinions and advice absolutely given away during a long period of years must have been, brought to terms of £ s. d., very considerable. No pharmacist could have more faithfully treated his apprentices. Pharmacopœia on one side, and Proctor's 'Pharmacy' on the other, they were individually and collectively taken through these two bulwarks of the pharmaceutical constitution. The number of men personally conducted through their ante-Minor studies by Mr. Proctor must come to a large total; that any one of them ever found him other than uniformly patient and sympathetic I cannot believe. Mr. Proctor never had any experience of pharmacy outside the walls of his own establishment, but you would have to be told this. There were original methods here and there of storage and the like, but nothing to raise a smile, and it was an easy matter to fall in quickly with his habits. The London West-Ender could teach nothing new to his *confrère* at Proctor's not to mention Brady's, and one or two more at Newcastle-on-Tyne. When preparing the second edition of his 'Pharmacy,' Mr. Proctor invited suggestions from his staff, but if any improvements were manifest in that edition over the first, they were all his own. Notwithstanding, it was a proud day with us when we were each presented with a copy suitably inscribed. It has been said that Mr. Proctor never should have been confined to a shop; it must have been irksome often enough, but never by any chance would a word escape him to that effect; nor did he show by any impatience of manner that the feeling was there. On busy days he would come into the shop, alert and aproned, and take his place at the counter; at other times he would be at work in his little office analysing, testing, writing, experimenting (carbon bisulphide was a particular favourite of his, I remember), and overlooking the work of his apprentices, but always approachable. At the end of the day he would be off to some committee of the Literary and Philosophical Institute, or take the chair at a meeting of the Society of Chemical Industry—a busy life, with many a compensation in the regard and appreciation of friends and colleagues the world over.

Nottingham, September 28, 1903. J. Pike.

"Actinic" Bottles.

Kindly permit me to reply to Mr. W. Roberts, who has thought fit to criticise my remarks on actinic glass bottles. Of course, we all know that actinic and its opposite refer to certain rays of light contained in white light, and differentiated by the spectrum. It would therefore seem obvious that substances of whatever nature, allowing the blue and violet rays —*i.e.*, the chemically active rays—to pass, should be described as actinic, while those substances allowing only the extreme orange and red rays to pass should be described as non-actinic. At a matter of fact, this is generally done in matters photographic, and it would be better if bottle-makers adopted the same course. If Mr. Roberts will refer to Houghton's catalogue, p. 732; to Fallowfield's, p. 535; to Ross's, p. 41; to Watson's, pp. 87 and 194, he will find quotations for non-actinic glass, silk, fabrics, ruby christia, media, papers, and lamps. Further, if he will refer to Woodbury's 'Encyclopædia of Photography,' p. 447, he will read under the head of "Non-actinic media—media for the transmission of non-actinic rays of light." Again, in Wall's 'Dictionary of Photography,' the following occurs: "The dark room is usually lighted by daylight filtered through some non-actinic glass or medium." It is true that writers on photographic chemistry do not appear to use either term, referring to substances which will best answer spectroscopic tests; but as everyone is not able to test all available media for himself, and, as a matter of fact, nearly always buys what he wants, it is highly desirable that some definite and accurate term should be employed. Mr. Roberts thinks that actinic should be used for those media which occlude the chemically active rays; but has he ever tested spectroscopically these media? If not, I would advise him to do so, and I think he will find many of them are absolutely useless for the purpose required, certainly the blue and green to which I before referred. He also refers to "trade custom," but I think I have shown this to be against him; added to which, trade custom is a most dangerous standard to set up. I need only refer to two well-known instances which have been made the subjects of legal proceedings—*i.e.*, "Citrate of Magnesia," which contained no citric acid; and "Flannelette," which contained not a particle of wool. The subject may not be of vital importance, perhaps; but, in any case, uniformity is desirable.

Croydon, September 26, 1903. J. H. Baldock.

The West Riding Federation.

I notice in your report of the Bradford meeting that Mr. Waddington made this remark: "That at the meeting which was held to deal with the rules of the West Riding Federation it was found that the Dewsbury delegates had come with a scheme fully prepared, and that it was most difficult to get any alterations made at all." I am at a loss to know what it is Mr. Waddington wishes to insinuate, but, as President of the Dewsbury Association, and one of its delegates, I say that there is not one word of truth in the statement, and I look upon the insinuation as casting a reflection on both our Association and myself. As chairman of the meeting when the rules were framed, I say that there was perfect fairness, full freedom of discussion, and absolute impartiality all round. According to the minutes of the meeting, half the resolutions and rules adopted were moved by the Bradford delegates, and nearly a third stand in the name of Mr. Waddington. We never had a scheme, except the formation of the Federation. We certainly drafted some rules for presentation, but this was done as founders of the Federation, and to prevent the meeting from being abortive, and it was for the delegates present, either to nullify, adopt, or amend them as they thought fit; and the very fact that so many resolutions stand in the name of the Bradford delegates proves clearly that there was no difficulty in getting any alterations made. Only one-fifth of the resolutions that were adopted are in the name of the Dewsbury delegates, which proves what a false statement Mr. Waddington has made, and I think that it shows very bad form on his part. Mr. Waddington seems to think that our Association had some sinister motives in forming the Federation, but I can assure him that there is not a shred of foundation for such thoughts. I am at a loss to know why he has made this childish statement about the delegates of our Association, without it is that he considers that all grapes not of his growth are sour and obnoxious. Our Association has shown nothing but friendliness towards the Bradford Association, and I hope that he does not voice the opinions of the members of the Association when he makes this unjustifiable and uncalled-for attack upon us. No doubt, in process of time Mr. Waddington will occupy the highest position that the Federation can bestow on him, but before that time comes I hope he will show a little more kindness of heart and more sound judgment, and that he will realise that our Association is above suspicion, and is always clear, open, and fair-minded in all its dealings.

September 28, 1903. Robert Gledhill, President,
Dewsbury and District Chemists' Association.

Mr. Waddington's statements that "Mr. Broadhead was himself to a great extent responsible for the drafting of the rules," and "the Dewsbury delegates had come with a scheme fully prepared, and it was most difficult to get any alterations made at all," would, if accurate, add greater weight to my contention that the rules of the Federation require revision. According to evidence, my responsibility for the rules is much smaller than Mr. Waddington's, though I have hitherto refrained from any dissection of the business as that of either individuals or associations; it is the action of the Federation as a body of which I accept my share of responsibility as a unit. I have not before heard of any scheme on the part of Dewsbury, and, as that Association could not have carried out any design without the assistance of the other associations, it is a reflection on the justice and fairplay of the rest of the representatives to infer that they connived at some nefarious scheme prepared by Dewsbury. I fail to find the slightest evidence of the obstruction suggested, the meetings being conducted with fairness and freedom. Bradford, as was natural, preponderated in the discussions, and, taking the total number of propositions and amendments actually carried at the two meetings, I find that the representatives of the Bradford Association were responsible for more than all the rest of the associations put together, Dewsbury included. I must bring in the cold corroboration of the minute-book. That authority records the two first meetings as dealing principally with the constitution, rules, and general autonomy of the Federation. There were altogether twenty-seven propositions and amendments. Dewsbury representatives were responsible for five—*i.e.*, Mr. Gledhill, three; myself, two. Bradford representatives brought forward sixteen, eight of which emanated from Mr. Waddington himself, and they were all carried. If every representative had exercised his privileges to the same extent as Mr. Waddington we should have had a grand total of 134 propositions and amendments! A marvellous achievement for two meetings, but in itself this would not call for comment on any particular representatives, though the brain reels with the prospect of an organisation in which each member was as much in evidence as Mr. Waddington. I do not say this in any querulous spirit, for I really compliment Mr. Waddington on the activity and interest he has shown in the Federation, but I cannot understand on what grounds he should think that he has not had a fair field. Neither is there any complaint, as far as I am aware, of undue influence on the part of the Bradford representatives; they are quite within their rights, and their valuable suggestions and experience are fully recognised. I admit the justice of Mr. Waddington's remarks regarding delegates not having copies of the rules. I prepared a draft copy for the meeting in May last, and it was resolved that they should be printed; but many difficulties have arisen, of which I, as Secretary, am most cognisant, and I thought it unwise to have them printed in their present condition. Since hearing from the secretaries of associations I have sent copies of the existing rules, with my own suggestions, to each member of the Council of the Federation, and hope that they will soon be dealt with in a manner which will minimise doubt and facilitate procedure.

Batley, September 28, 1903. R. Broadhead.

The Lists of Jurymen.

A paragraph appeared in *The Pharmaceutical Journal* of September 12, announcing that "the names of persons liable to serve as jurymen in England and Wales for the current year will be exhibited on the principal door of every church, chapel, and other place of religious worship on the next two Sundays. The lists are open to inspection by everyone, and unless objection is made to the overseers of the respective parishes by those who consider themselves entitled to exemption, the names will be returned to the clerks of peace, and the persons scheduled therein will be liable to serve as jurymen." Acting upon this information I wrote to our overseers claiming age exemption, only resulting in a communication from them stating that "the overseers have nothing to do with the jury lists; the juries are taken from the citizens' roll, and lists are *not* affixed to the church doors."

Worcester, September 29, 1903. John Twinberrow.

⁂ The law relating to this matter is 33 and 34 Vic., c. 77, sec. 11, and the provision indicated requires the clerk of the peace to issue his precept to the overseers calling upon them to compile a true list of the persons qualified and liable to serve as jurors. We do not know of any reason why the Worcester overseers have nothing to do with the jury lists.—[Ed. *P.J.*]

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Plant (E. J. J.—96/21).—*Polygonum convolvulus.*

Softening Horn (B. L. B.—96/20).—Soak it in strong solution of ammonia or crude potash.

Brunak (J. H. S.—96/25).—We have no information regarding the composition of the preparation.

Labels (C. H. W.—225/47).—None of the labels will incur liability to stamp duty, except Nos. 7, 8, and 10.

Ore (J. J.—96/17).—It is not pitchblende. You had better have it examined by an analyst accustomed to such work.

Labels (A. C.—226/9).—There is nothing on the label for Cod Liver Oil Cream to render the preparation liable, but the other label will require to be marked "P.J.R. 11."

Sterilised Milk (B. L. B.—96/20).—You can obtain it from any of the large dairy companies. Try the Express Dairy Company, Limited, Hart Street, Bloomsbury, London, W.C.

Homœopathic Dispensing (H. and D.—96/15).—The 'British Homœopathic Pharmacopœia,' published by E. Gould and Son, 59, Moorgate Street, London, E.C., contains the information you require.

Books of Reference (96/22).—The books you mention will doubtless be recognised, but you can easily ascertain the point by applying to the Secretary, Inland Revenue, Stamp Department, Somerset House.

Names of Preparations (A. J. T.—226/16).—The names you mention will not, in themselves, render the preparations liable, but unless you register the formulæ and indicate that fact, you must be be careful not to print any recommendation on the labels or elsewhere.

Rubber Plaster (D. B. T.—96/19).—The following is a satisfactory working formula:—Dammar resin, 3; prepared suet, 5; lanolin, 3; caoutchouc, 1; glycerin, 1; benzol, 5. Digest the caoutchouc, previously cut up small, in the benzol for four or five days. Melt the resin and the suet, strain, and while still warm add the lanolin, glycerin, and the rubber solution, taking care that no naked flame is near at hand. Then carefully evaporate off the benzol by steam heat, away from any naked fire, until the plaster sets to the desired consistence.

Glycerin of Cucumber (A. E. R.—96/26).—White Castile soap, 1 oz.; cucumber pomade, 2 oz.; tepid water, 6 pints; tincture of quillaia, 1 fl. oz.; glycerin of borax, 8 oz.; perfume *q.s.* Shred the soap and dissolve it in one pint of the water on the water-bath. Add the tincture of quillaia. Melt the cucumber pomade and place it in a capacious hot mortar. Pour in the hot soap solution; mix thoroughly and gradually add the rest of the water, to which the glycerin of borax has been added. Stir until cold, set aside for twelve hours, then again agitate well, after adding the perfume.

BIRTH.

Wokes.—On September 23, at 1, Beechwood Road, Grassendale, Liverpool, the wife of Thomas S. Wokes, pharmaceutical chemist, of a son.

DEATHS.

Culshaw.—On September 21, James Culshaw, Chemist and Druggist, Eccleston. Aged 74.

Fairburn.—On September 25, Robert Waller Fairburn, Chemist and Druggist, Guisborough. Aged 53.

Hinds.—On September 29, James Hinds, Pharmaceutical Chemist, Coventry. Aged 76. Mr. Hinds, who had been a member of the Pharmaceutical Society since 1853, was one of the best-known citizens in Coventry, where he carried on the practice of a chemist and dentist. He was a member of the Odontological Society, the British Dental Association, and the Imperial Institute, as well as a guardian of the poor and a member of several local public bodies. Some years ago he invented a preparation for modelling in dental work, which has since been used with considerable success.

Laen.—On September 20, Mrs. Laen, widow of William Laen, of Pembroke Dock, a former M.P.S.

Manley.—On September 19, Henry Manley, Chemist and Druggist, Aston, near Nantwich. Aged 74. Mr. Manley was for some years a member of the Pharmaceutical Society, and carried on the business of a chemist and druggist, but he subsequently became an auctioneer.

Calendar for the Week (October 4—10, 1903).

Days of		Events of the Week.	Sun	
M	W		Rises	Sets.
4	S	**Seventeenth Sunday after Trinity.**	6.5	5.33
5	M		6.7	5.31
6	Tu	○Full Moon, 3.24 p.m.	6.9	5.28
		Bradford and District Chemists' Association, at 9 p.m.		
		Wakefield and District Chemists' Association, at 8.15 p.m.		
7	W	Pharm. Soc. G.B., 17, Bloomsbury Square, London, at 11 a.m.—Meeting of Council.	6.11	5.26
		Pharm. Soc. of Ireland, 67, Lower Mount Street, Dublin, at 3 p.m.—Meeting of Council.		
		Huddersfield and District Chemists' Association, at 7.30 p.m.		
		Sheffield Pharmaceutical and Chemical Society, at 8.30 p.m.—Annual Meeting.		
		Stockport Chemists' Association, at 9 p.m.		
8	Th	Chemists' Assistants' Association, at 8.30 p.m. Opening Meeting.	6.12	5.24
		Scarborough Chemists' Association, at 9.30 p.m.		
		West Ham and District Chemists' Association, at 3 p.m.		
		Wolverhampton and District Chemists' Association.—Smoking Concert.		
9	F		6.14	5.21
10	S	Divisional Meeting at Liverpool, 1901.	6.16	5.19

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Antcliffe, Arthur, Bagley, Baldwin, Beall, Bickley, Brooks, Bushnell, Burnett, Burrell, Chippendale, Clark, Clarke, Cocker, Colley, Cossey, Davidson, Doe, Doig, Dunn, Eaton, Egginton, Elliman, Ellul, Evans, Farr, Foster, Gibson, Gilchrist, Gwinn, Handford, Harrison, Houfe, Ireland, Johnson, Jones, Kehnan, Kidd, Lance, Lawson, Lewis, Maben, Maskie, Mather, Matthews, Moss, Mumbray, Murrell, Orton, Partington, Phillips, Priestley, Rigby, Rossiter, Russell, Shepherd, Stooke, Sumners, Sweetman, Tasker, Thorp, Timmins, Tomlin, Trebilco, Umney, Wain, Walton, White, Wilkins, Williams, Wokes, Wood.

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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, October 8, 1903.

Eight More Pages of Recipes in connection with the 'Pharmaceutical Journal Formulary' appear this week.

Of 224 Candidates who presented themselves for the recent Minor Examination held in London, sixty only were successful.

A Method for Distinguishing Extract of Yeast from meat extract is described in this issue in a note by Mr. A. Searl, F.C.S.

For Selling Methylated Spirit of Wine on the Sabbath, a chemist and druggist of Dumfries—by name F. P. Moore—has been fined the sum of £10.

The Second Article on the disintegration of drugs appears in the Students' Columns this week. Special attention is directed to the competition in an editorial note.

The First Meeting of the present session of the Chemists' Assistants' Association, of London, was held to-night, when the new President delivered his inaugural address.

Numerous Local Associations, including several Yorkshire organisations, have held meetings during the week ending to-day. Interesting discussions took place at each of these gatherings.

The Annual Meeting of the Pharmaceutical Society of Ireland was held on Monday last, when Mr. Beggs delivered his Presidential address. The past policy of the Council was severely criticised by Mr. J. J. Bernard.

The Medicine Stamp Question has been freely discussed this week at meetings of chemists throughout the country, and general approval has been expressed at the action of The *Pharmaceutical Journal* with regard to the publication of the 'P.J. Formulary.'

The Benevolent Fund is in need of further subscriptions. The Vice-President of the Pharmaceutical Society, whose remarks on the subject are reported at page 521, suggests that Divisional Secretaries should call upon all the chemists in their respective districts and urge them to subscribe or to increase their subscriptions.

At Wednesday's Meeting of the Council of the Pharmaceutical Society of Great Britain, the report of the Parliamentary Committee recommending the insertion of a new clause in the Pharmacy Bill was adopted. Other important business, full particulars of which will be found in the report of the proceedings, was transacted.

The Summonses Against Two Unqualified Vendors of proprietary sheep-dips at Ballinasloe have been amended, and a fine of £5 has been inflicted in each case. It will be remembered that a few weeks ago the magistrates decided that the sheep-dip in question was a "patent medicine." The Pharmaceutical Society of Ireland is to be congratulated on its prompt action in the matter.

Two Unqualified Persons appeared at the Pontefract County Court on Wednesday to answer summonses under Section XV. of the Pharmacy Act, 1868. In defence it was pleaded that "Teesdale's Chlorodyne," the article which had been retailed by defendants, was a "patent medicine," but the Judge overruled this argument and inflicted two fines of £5 in each case. His Honour expressed approval of the action of the Pharmaceutical Society in instituting proceedings.

Few Changes of Importance in the prices of drugs and chemicals have occurred during the week, and the volume of business transacted has not been large. Ipecacuanha is dearer, so is Codeine. A firmer tone in the quinine market is anticipated.

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MOTES AND BEAMS.

It has recently been the subject of comment on the part of several readers of the Journal that some of the recipes which have been published in the "P. J. Formulary" do not show signs of great pharmaceutical skill; a few persons, indeed, not having read, or at any rate not having grasped the meaning of, the editorial notices on the subject, have thought fit to blame the Editor for not having consigned some of the recipes to the oblivion of the waste-paper basket. It becomes necessary, therefore, once more to repeat, distinctly and in terms, that the collection is simply and solely a register of formulæ in common use among chemists and druggists, and that no attempt has been made to weigh this or that recipe in the balance. The primary object of registering the formulæ is to provide means whereby chemists and druggists may be enabled to continue the sale, unstamped, of compounded medicines which have become known and approved in the course of years. In many instances, it might doubtless be preferable if chemists could be induced to relinquish their particular recipes in favour of more skilfully constructed formulæ for remedies in general demand. But, as is well known, any change in the composition of an article for which a demand has been created tends frequently to cause a diminution in sales, and it is not, therefore, surprising that chemists and druggists should be reluctant to make changes in the composition of articles for which there is a steady demand. At the same time, the Editor does so far agree with the critics as to admit, regretfully but freely, that a proportion of the recipes which have been published, if weighed in the balance, would

Vol. 71. No. 3390. (4th Series, Vol. 17. No. 1737.)

without doubt be found wanting. He would, therefore, suggest that careful consideration should be devoted to this point, with a view to improving or rejecting such formulæ as are unworthy of the scientific pharmacist.

There are certain rules and customs of practical pharmacy, with which all qualified chemists might have been assumed to be familiar—certain elementary principles which, without undue conservatism, are so intrinsically essential as to require respect. It comes, therefore, with something of a shock to find that such rules and principles of practical pharmaceutics are, whether of set purpose or through ignorance, in some cases absolutely set aside in constructing formulæ for medicinal compounds. Moreover, in certain instances, formulæ submitted by correspondents for publication have appeared so aggressively impossible or so obviously dangerous as to call for inquiry; and in response to letters asking for confirmation of the formulæ it has been found that mistakes of commission or omission have been made by the senders in copying out the recipes. In one formula, "ounces" (of a potent ingredient) was written for "drachms"; in another it transpired that where a "pound" was written, a "hundredweight" was meant. Compared with such examples of carelessness, which can hardly be considered excusable, the mere omission of any sort of vehicle or basis from the formula for an ointment appears almost venial.

The foregoing remarks are made with no desire for cheap sensationalism, but only from a sense of the urgent necessity which is thus shown to exist for calling the attention of readers to the need for care in these matters. It can never be of any manner of use to point to the mote in the eye of the dispensing doctor or the poison-selling oilman, and to clamour for protective legislation, if those persons in their turn can show that the pharmacist has a beam in his own eye. Care in copying out a formula for registration and inclusion in a book appears to be so rudimentary and essential a principle, that the compiler would seem to have a right to expect absolute and consistent accuracy throughout. To the vast majority of contributors to the 'Formulary' the foregoing comments have, of course, no application; but if the effect of these comments is to make the remainder more careful and more competent pharmacists, that in itself will be sufficient justification of this article.

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THE STUDENTS' COMPETITION.

The attention of those pharmacists who undertake the responsibility of training apprentices is again directed to the articles for students which have been appearing in the Journal each week since September 5, 1903. The articles, as will have been noticed by those who have read them, deal with the various subjects of the pharmaceutical curriculum in an elementary manner, and, while not intended in any way to replace lectures or text-books, are particularly suitable for younger students and apprentices. As previously announced, when a dozen or more of the lessons have been published, an examination paper will be set with questions bearing on the matters touched on during the course. The Editor suggests that pharmacists would be serving the best interests of their apprentices by encouraging them to study the students' columns and to enter for the competition. In accordance with the suggestion of several correspondents, it has been decided to offer one or more prizes for the competition. Further particulars as to the conditions will be published later.

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THE PHARMACY BILL.

On the recommendation of its Parliamentary Committee the Council of the Pharmaceutical Society has decided to take steps "to prepare an active crusade" on behalf of the Pharmacy Bill. This decision will doubtless meet with the approval of registered chemists and druggists. Signs are not wanting that when the Bill is again introduced into the House of Commons a new Government may be in power, as the tendency of events seems to point to a general election at an early date, and a possible readjustment of Parliamentary representation. In view of these portents it behoves those persons directly interested in the Bill to watch developments, and to take an early opportunity of educating possible future Parliamentary representatives as to the urgent need for recognising the present anomalous position of pharmaceutical legislation. Chemists, therefore, and more especially Divisional Secretaries of the Pharmaceutical Society, should keep in touch with local politics, and do what they can to counteract the influence of those who will in all probability again attempt wilfully to mislead members of Parliament in regard to the nature of the legislation sought. The extent to which this misrepresentation was effective, at the time the Bill was introduced, seems almost incredible, but the success which attended the glaringly unscrupulous efforts of interested parties may be gauged by the fact that a member of Parliament, who was prominent among opponents of the Bill, has since confessed that he was ignorant of the fact that company pharmacy was only rendered possible by a flaw in the Pharmacy Act. It is pleasing, however, to be able to record that the united efforts of chemists and druggists are already having the effect of removing misunderstandings due to ignorance of the facts of the case.

With regard to another aspect of the question, it will be seen from the report of Wednesday's meeting that the Council has now resolved to introduce a clause into the Pharmacy Bill, whereby the rights reserved to medical men by Section 16 of the 1868 Act, and Section 1 of the 1869 Amendment Act will not be abrogated. It will be remembered that, at the sitting of the General Medical Council in May of this year, Sir Hugh Beevor, who represents the Society of Apothecaries on the Council, expressed the opinion that, if the Pharmacy Bill became an Act, members of the medical profession would be deprived of their present rights to dispense any medicines which contain scheduled poisons. Of course there was never any desire on the part of the Council of the Pharmaceutical Society of Great Britain to infringe on the rights preserved to medical men in the Act of 1868, and now that it has been decided specifically to confirm the intention of the Council in this respect, a possible source of misunderstanding should be removed.

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CASH ON DELIVERY.

A deputation recently waited upon Mr. Austen Chamberlain, in his capacity as Postmaster-General, to urge the adoption of the cash on delivery postal system. This is supported by those who think that such a system would not only be a protection to the public against fraudulent advertisers, but would also assist in bringing back the agricultural classes to the land. Opposition to the proposal is stated, however, to come from the small shopkeepers, who fear that the customer would prefer to deal directly with the wholesale house rather than with the retailer. That does not appear to have been the experience of Australia, where the retailer is one of the strongest supporters of the system. Mr. Austen Chamberlain did not disguise his sympathy with the views of those who favour the cash on delivery post, and declared his willingness to adopt it when assured that there is a widespread feeling in its favour. It remains to be seen whether Lord Stanley, his successor at the Post Office, holds similar views.

IS RADIUM AN ELEMENT?

Professor Sir William Ramsay at the inauguration of the session of University College, London, on Tuesday, October 6, delivered a lecture on "The Recent Researches which have led to the Discovery of the Properties of the Emanations from Radium." A great advance, he said, had been made since it had been manifest that helium, which already co-existed in the air, was a material constituent in these phenomena. History had shown a noteworthy development in human-knowledge concerning the atmosphere. Originally the term was synonymous with all elementary gas or "spirit"; but since the beginning of what might be called the age of experimental chemistry there had been a gradual growth in the knowledge of its really complicated composition. Its existence as a mixture of oxygen and nitrogen had been a matter of everyday knowledge for nearly a century. The last few years, however, had seen the discovery of several obscure constituents, one of which (helium) was known to be an integral factor in the composition of radium. There was only one conclusion to be drawn—simply that radium could not be a true element, but a compound of helium and some other element or elements. The perpetual discharge was, thus, nothing more than a gradual spontaneous decomposition. The same explanation could, probably, be given for the activity of uranium and thorium. These and many other observations in modern chemistry pointed more and more to the belief that in the future it would be found possible to analyse and split up into their constituents many bodies now considered to be elements.

THE ST. LOUIS EXHIBITION, 1904.

Mr. Thomas Tyrer, F.I.C., writes that it is desired to make as complete and as interesting as possible the exhibits in the chemical and pharmaceutical art section of the exhibition to be held at St. Louis in 1904. Freight, insurance, and other charges will be paid. Pharmaceutical antiquities and portraits of the British pioneers in pharmacy and chemistry will be particularly acceptable. There is sometimes a tendency for America to be represented more adequately than Great Britain in the pharmaceutical sections of international exhibitions, and it is therefore especially desirable that at this exhibition, held as it is in the United States, Mr. Tyrer's suggestion be acted on by as many as possible of those who may be able to lend exhibits. The offices of the British Commission, to which communications should be addressed, are at 47, Victoria Street, Westminster, S.W.

MR. CHAMBERLAIN'S FISCAL PROPOSALS.

In the course of the speech at Glasgow with which Mr. Chamberlain opened his campaign on Tuesday, the 6th inst., the ex-Colonial Secretary dwelt on the changes that had taken place during the past thirty years in the conditions governing the commerce and industry of this country and of the Empire. He asserted that the trade of the United Kingdom had been practically stagnant during that period. Our export trade had increased in that time by twenty millions per annum, against 110 millions in the case of the United States and fifty-six millions in that of Germany. The character of British trade had also changed; we were exporting less and less of manufactured goods, and importing more and more. Exports to foreign countries had decreased by forty-six millions, but those to the Colonies had increased by forty millons. England's Imperial trade would decline unless the necessary steps to preserve it were taken while there was yet time. There was still a great deal of trade with the Colonies which could be maintained and increased, and we should ask the Colonies to let us supply them with the products of industries that had not yet been created there. The Colonies for a moderate preference would give substantial advantages, and he calculated that Great Britain would capture twenty-six millions of foreign trade to our Colonies. Such a preference would give employment to three-quarters of a million workmen, and that would mean subsistence for nearly four millions of our population. He did not propose any tax on raw material, but to help the Colonies and prevent separation a tax on food was necessary. The rough plan of his proposal was a two-shilling duty on foreign corn, and no duty on corn from British possessions; no duty on maize; a corresponding tax on foreign flour; a 5 per cent. duty on foreign meat and dairy produce, with the exception of bacon; a substantial preference to colonial wine and fruit, and the remission of three-quarters of the duty on tea and half that on sugar, with a corresponding reduction on coffee and cocoa. He estimated that the loss to the Exchequer under his scheme would be £2,800,000 per annum, but he proposed to recover that and more by what was sometimes called retaliation and sometimes reciprocity. A 10 per cent. tax on foreign manufactures would yield nine millions a year, which might be used for further reduction of the taxes on food, and also of other taxes which pressed hardly on the community.

LIABILITY TO MEDICINE STAMP DUTY.

It should be obvious that liability to Medicine Stamp Duty cannot be incurred in respect of articles which do not partake of the character of "medicines or medicaments for the prevention, cure, or relief of any disorder or complaint incident to or in any wise affecting the human body." No claim to duty arises, therefore, in the case of corn or bunion plasters which are not medicated. This fact has been confirmed by the Inland Revenue authorities, in a letter recently addressed to Mr. W. S. Glyn-Jones.

EXTRACTUM NUCIS VOMICÆ LIQUIDUM.

BY S. JUDD LEWIS, PH.C.

It not infrequently happens when this preparation is made by the official process that both it and the tincture made therefrom form turbid liquids on mixing with water, especially in the presence of mineral acid. Further, they are apt to deposit fatty and other matter, depending in nature and amount upon the character of the drug used, and upon the conditions of storage.

Professor Greenish and Mr. F. A. Upsher Smith read a paper some months ago [*P.J.*, 1901, ii. 667, 672] upon the latter question, and gave a formula for the liquid extract which would produce a tincture not liable to deposit under any ordinary circumstances. Some prepared by this process was of good appearance and keeping properties, but while a considerable quantity of fat is thus excluded a large proportion enters into the preparation, and is deposited on addition of water, especially if mineral acid be present.

It is probable that much depends upon the quantity of drug operated on at a time, particularly with reference to the height of the percolator, for by the time the menstruum has passed through a column of drug, say three feet high, a state of affairs is attained much more nearly related to that which the authors of this process attained by repercolation. However, working on one hundredweight of drug at one time, a large quantity of fat was removed, but the product, as well as the tincture from it, became very turbid on dilution.

Experiments were performed with the object of removing the whole of the fat, and the formula given below practically attains this end. The result is quite satisfactory, both with regard to the character of the preparation, and to the avoidance of turbidity on mixing with plain or acidulated water. Moreover, the process is but a modification of the official one, and is not open to the objection of introducing foreign substances, save a mere trace of acetic acid:—

Nux Vomica, in No. 20 powder	20 lb.
Alcohol 70 per cent.	*q.s.*
Alcohol 90 per cent.	6 pints.
Acetic Acid	*q.s.*
Distilled Water	*q.s.*

Exhaust the drug by percolation with the alcohol 70 per cent. Transfer the percolate to a vacuum still and distil, reducing the pressure *secundum artem* more and more as the alcohol passes over, so as to keep the temperature as low as possible, until the residual liquid measures about five pints, when approximately all the spirit will have been recovered; add one gallon boiling distilled water, and render very faintly acid by addition of acetic acid. Set aside for forty-eight hours in a cold place, collect the separated fat, and boil it two or three or more times with a little water, to free it from alkaloid; mix these washings, and set them aside in a cold place to allow any fat to separate. Mix the aqueous liquids, and evaporate *in vacuo* to two pints; add the alcohol 90 per cent. to the warm liquor, and, when cold, make up to one gallon by addition of distilled water. Determine the strychnine content of the product, and dilute with alcohol 70 per cent. to the pharmacopœial strength

The alcoholic strength will be less than 70 per cent., but still rather stronger than the average product by the B.P. process. It is recommended to reduce the liquors *in vacuo*, so that the various constituents of the extract may be as little as possible affected by heat; thus preserving the characters of the official extract. However, the spirit may be recovered in an ordinary still at atmospheric pressure without great damage.

In conducting the assay of this liquid extract, as well as that obtained by Greenish and Smith's process, emulsification occurred quite as badly as with that made according to the official formula, indicating that the trouble is not primarily due to fat, but to some other constituent of the drug; and this view is confirmed by the fact that shaking out with chloroform or ether to remove fat does not eliminate, but only mitigates, the trouble.

During the discussion at the evening meeting, after reading the paper referred to above, Mr. Smith remarked that "there is considerable difficulty in powdering nux vomica seeds in a mortar in small quantities." The following method of reducing this troublesome drug has proved most successful. Hold a seed firmly in the jaws of a small vice (such as can be bought for about half-a-crown), and file it down by means of a flat file 10 or 12 inches long and 1¼ inches broad; the teeth of the file should be medium in size and sharp; a worn file adds much to the labour. The file should be large, in order to get sufficient power to work quickly. By this means a few ounces of nux vomica can be readily disintegrated.

YEAST EXTRACT AND ITS DETECTION.

BY A. SEARL, F.C.S.

In view of the many attempts which have been made to utilise yeast extract as a food product, it is important for analysts to be in possession of some method of distinguishing it from meat extract in cases of adulteration and (or) substitution. This is emphasised by the facts that I have before me samples labelled

> "Liebig's Extract of Meat (Extractum Carnis Liebig), manufactured by Liebig's process in South America from finest beef only,"

which were purchased from high-class shops in London, and they are almost entirely, if not altogether, yeast extract! As the latter can be manufactured at a nominal cost from brewers' and distillers' waste products, there is a strong incentive for unscrupulous dealers to substitute, wholly or in part, the one for the other, and without any consideration for either the public health or the public purse.

This is facilitated by the fact that they are somewhat similar in appearance, and probably it has been done with a sense of considerable security, as there are no very specific tests for meat extract, such as can be applied to ordinary drugs and chemicals; and it is known to the writer that at least one public analyst has passed as genuine a sample of meat extract known to have been grossly adulterated in this way. Reference to the Patent List will show how many attempts have been made to place such a preparation on the market.

The following simple test will enable any analyst to detect this lucrative form of adulteration:—Make a modified Fehling's solution by dissolving 200 gr. sulphate copper and 250 gr. neutral tartrate soda in 4 oz. water; add to this 250 gr. caustic soda dissolved in 4 oz. water. Dissolve 10 gr. of the sample to be examined in 1½ oz. water, and add to it half volume of the above solution, and boil for a minute or two.

With genuine meat extract no precipitation occurs, but with yeast extract a bulky, curdled precipitate of a bluish-white colour is thrown out, which is almost insoluble in water. When collected, washed, dried and weighed, several samples of yeast extract have been found to give approximately 1 gr. of this precipitate (it looks to the eye more like 20 gr.) from 10 gr. extract. It naturally varies a little, according to the amount of moisture and ash contained in the sample. Only one sample of yeast extract has yet been found which did not respond to this test, and in that case it readily reduced the copper.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Mechanism of the Substitution of Bromine.

It is known that the presence of a little iodine facilitates the substitution of bromine for hydrogen in aromatic compounds; L. Bruner, examining the mechanism of this reaction, explains it by means of the dissociation of the bromide of iodine, and the bromising action of the atoms of free bromine which result from it. He examined more particularly the bromisation of benzene in the presence of iodine, and proved that its progress was that of a quadrimolecular reaction, $C_6H_6 + 4Br = C_6H_5Br + HBr_3$. He examined also the catalytic action of some other "bromine fixers" on the coefficient of speed. In some cases he measured the relative speeds of instantaneous reactions, and showed, in so far as it concerns the bromisation of phenol, of bromophenols, and of aniline, the parallelism existing between the speed of the reaction and the electrolytic dissociation.—*Zeit. Phys. Ch.*, **41**, 413, through *Chem. News.*

Compounds of Bismuth with Tannin.

Cap first prepared a bismuth compound of tannin by triturating tannin with bismuth hydroxide, and Sieker, later, prepared the same substance by treating crystallised bismuth nitrate with a concentrated solution of tannin. P. Thibault finds that tannin does not react on bismuth oxide, but only on the hydroxide. The compound $C_{14}H_{10}O_9Bi \cdot 9H_2O$ is prepared by allowing the theoretical quantities of bismuth hydroxide and tannin solution to remain in contact for twenty-four hours and washing and drying the solid product. The whole of the tannin is absorbed by the hydroxide, and the product is completely soluble in sodium hydroxide solution or mineral acids. If tannin or digallic acid in excess be used, the bismuthotannin formed fixes additional tannin in proportions equivalent to from $\frac{1}{4}C_{14}H_{10}O_9$ to $\frac{1}{2}C_{14}H_{10}O_9$ for each molecule of the compound $C_{14}H_{10}O_9Bi$. The bismuth in this compound substitutes some of the phenolic hydrogens, leaving the acid function free.—*Bull. Soc. Chim.*, through *Journ. Soc. Chem. Ind.*, **22**, 961.

The Tuning-fork in Surgery.

Andrews mentions the usefulness of the tuning-fork in the diagnosis of fractures, especially of the long bones. The test is made by placing the bell of a stethoscope over the bone near the supposed fracture, where the soft tissues are as thin as possible, and the handle of a tuning-fork as close to the bone as possible beyond the supposed seat of fracture. The sound will be transmitted through the shaft of the bone to the stethoscope and through the stethoscope to the ears of the examiner. When the bone is intact, if the test is properly made, the sound of the fork will be heard with great distinctness; but if there is a lack of continuity, the sound will either not be heard at all or will be heard very faintly. By comparing the intensity of the sound on the suspected side with the sound heard under similar conditions on the normal side, the question of continuity of bone can be determined. The test for fractures is based upon the fact that bone is an excellent conductor of sound waves, while the soft tissue of the body conducts sound waves very poorly. The bell of the stethoscope should fit tightly to the skin, and when comparing the sound and injured sides, the instruments should be placed in the same relative positions. The sound waves will be transmitted through a fracture if the two ends are crowded together; also through a joint, especially if the articular surfaces are forced together.—*Scient. Amer.*

Improved Method of Collecting Resin.

The collection of crude resin in America by "boxing" has always involved the disadvantage of disaster to the tree. C. H. Hertz publishes the results of a series of experiments showing the superior yield obtained by a modification of the European system of collection. The latter consists in allowing the resin from the periodically scarified cortex and young wood to drain down into two slanting spouts of thin tin, which direct it into a pot hung properly beneath. The advantages claimed for the new system are—a longer life of the tapped tree, a greater yield of resin all the time, less waste in catching the resin, diminished evaporation of volatile products, and less dirt and discoloration as the liquid flows over the face exposed, as well as other minor points. A number of figures, in terms of money value, show conclusively the value of Hertz's method.—*U.S. Dept. of Agric.*, *Bull.*, **40.**

Mosquitoes and Malaria.

A feature of the mosquito as the agent of malaria that has in the past been difficult to understand is that occasionally a locality is found where the physical conditions appear to be such as to favour the development of malaria, susceptible species of anopheles abound, and yet malaria is absent. Not only do such areas exist in some cases in immediate proximity to active foci of the disease, but the introduction of persons whose blood contains the malarial parasite is unattended by the development of malaria in others. The mosquitoes of such immune areas appear, in fact, to be insusceptible, but the cause has been hitherto unknown. The researches of Dr. Schoo, however, to which Lieut.-Colonel Giles directs attention in the April number of the *Indian Medical Gazette*, offer an explanation. Dr. Schoo observed that, so long as they were fed on acid fruits, it was extremely difficult to infect mosquitoes with the malarial parasite, while they were easily infected when the acid food was withheld. This observation accords with a point noticed by Professor Celli, who has stated that one of the Italian immune areas is remarkable for an enormous development of the cultivation of the tomato, a fruit rich in vegetable acid, and an attractive food for mosquitoes. The necessity of further investigation of this matter is clear, for if confirmation is obtained, such knowledge may be of much importance in its practical application for the prevention of malaria.—*Nature*, **68**, 422.

Physiological Action of Betaine.

From certain experiments made by Schultzen in 1870 it has hitherto been held that betaine, extracted from raw beet-sugar, even in such large doses as 15 gr. is not poisonous to such animals as rabbits, dogs, and cats. Waller and Plimmer have, however, recently presented a short communication to the Royal Society in which it is shown that the betaine extracted from raw beet-sugar has a perfectly well-marked, although not very powerful, poisonous action. Syrup made with ordinary beet-sugar was observed to have cadaveric odour suggestive of the presence of choline and betaine. From the sugar they were able to isolate betaine in the proportion of about 4·4 Gm. of its hydrochloride per 1,000 Gm., the salt having a melting point of 238° to 239° C. Tested on rabbits and cats in doses of 0·1 to 0·15 Gm. per kilogramme of bodyweight and given intravenously, fatal doses were found to paralyse the heart, while smaller doses caused a rapid fall of blood pressure. In these respects pure betaine is not so active as commercial betaine, but the latter was found to contain a large proportion of potassium chloride, more than sufficient to exercise a distinctly depressing effect on the circulation. Raw beet-sugar should therefore be carefully purified.—*B.M.J.*, **2,224**, 380.

THE STUDENTS' COLUMNS.

DISINTEGRATION OF DRUGS.—2.

For powdering drugs various appliances are used according to the nature of the material and the quantity required. The pestle and mortar are often sufficient if only small quantities are required of a not very fine powder, although most crystalline substances can be reduced by their use to a No. 60 powder with a fair degree of facility. For mineral substances the pestle and mortar should be of Wedgwood ware, porcelain, or marble; or for small quantities of substances which are acid or corrosive glass utensils may be used. For vegetable substances iron or bell-metal mortars are employed, because more force may be exerted without risk of fracture, and the hardness and weight of the pestle materially conduce to the end in view. In this connection it may be noted that considerable force may be exerted even with porcelain or Wedgwood provided the pestle and mortar are not actually brought into contact. When a blow is struck and some of the material remains between the two, fracture seldom results. Of special machinery for grinding drugs and similar materials there is no lack of variety on the market, but for dealing with comparatively small quantities, such as are required by the individual pharmacist, the means at present available are very inadequate. This is particularly the case in regard to fine powders of vegetable drugs, and these are consequently almost invariably purchased instead of being produced by the pharmacist himself from the whole material, whose identity and quality can be much more satisfactorily determined by examination before grinding. Almost the only appliance available for a few pounds of material is some variety of mill of which the ordinary coffee-mill is a familiar type. In these mills the material to be ground is fed between two corrugated grinding surfaces, which may have the form of two flat discs or two cones. The discs or cones may be brought nearer to one another by a screw adjustment so as to produce powders of varying degrees of coarseness, but such mills cannot be made to yield very fine smooth powders.

Moreover, the feeding of the mill is sometimes difficult. Seeds and fruits, which are more or less uniform in size, and flow easily down the hood or hopper, are easily dealt with, but long or irregular fragments of roots, barks, etc., cannot be readily introduced into the mill and brought between the grinding surfaces. Materials which are resinous, or become plastic under the combined influence of pressure and the heat produced by the friction, usually clog the mill, so that appliances of this kind are almost entirely restricted to the production of powders varying in size from Nos. 10-60, even under the most favourable circumstances, such as are required for the preparation of infusions and tinctures. For larger quantities and for finer powders two other types of machinery are commonly employed. These are the "disintegrator" and the "edge-runner," neither of which is available for hand use. The disintegrator consists of a drum-shaped chamber, or beater-chamber, in which the beater revolves at a high rate of speed. The beater consists of a central axis from which several arms or spokes project, so that when revolving these arms violently strike the material introduced into the chamber. Two segments of the curved surface of the drum or beater-chamber consist of screens which are removable and through which the beaten or broken-up material can escape when it has attained the necessary degree of fineness. The fineness of the powder is regulated by the size of the slits in the screens. These are readily interchangeable, various sizes being supplied which are capable of delivering anything from a very fine powder to a No. 6 powder. A great advantage of the disintegrator is its continuous action, the material being fed into the chamber as fast as it escapes in powder. The material also requires little or no preparation so long as the pieces are capable of being pushed into the aperture in the chamber. For impalpable powders, however, it is somewhat slow in action, and fails with some materials. The edge-runner is perhaps the most widely used and efficient appliance for producing fine powders from all kinds of material. Its efficiency depends partly upon the weight of the stones, and partly upon the tearing action exerted by the peculiar motion of the runners in the trough in which they turn. These revolve upon a horizontal axis, which at the same time turns in a horizontal plane; from this it results that while both edges of the stone must revolve on their own axis at a uniform rate, the one nearer the centre turns in a smaller circle than the outer edge, and the material in the trough which comes under the stone is subjected to a twisting or tearing movement which acts most efficiently upon tough and fibrous materials. This action can best be understood by seeing the edge-runner at work, and it may be remarked that in builders' yards similar appliances are very frequently employed. Failing these, diagrams of the appliance may be consulted[*] with advantage. If impalpable powders are required the ground material must be sifted from time to time, the coarser particles being returned for treatment until everything passes through the sieve, the whole being afterwards thoroughly mixed. For these very fine powders metal sieves are not available, muslin, linen, or silk being usually employed. No. 10-30 correspond to what is usually called a coarse powder, No. 60 to a fine powder, while impalpable powders are such as will pass a sieve having 100 meshes to the linear inch.

REVIEWS AND NOTICES OF BOOKS.

'Pharmacopœia of the Sheffield Union.' Compiled by J. H. Bellamy, L.R.C.P., M.R.C.S., and H. Antcliffe, M.P.S. Pp. 104. Sheffield: Wilkinson and Sons, St. James's Street. 1903.

This revised edition of this Pharmacopœia has been prepared under the direction of the medical staff of the Sheffield Union by the senior resident medical officer and the senior dispenser. Mr. Antcliffe is not, however, the only pharmacist who has been concerned in the production of the Pharmacopœia, for Mr. G. T. W. Newsholme has been chairman of the Revision Committee, and in that capacity rendered much assistance. The Pharmacopœia proper occupies forty-five pages, the recipes being for the most part excellent examples of what hospital prescriptions should be. Probably there is some good reason for the fact that the cod-liver oil emulsion contains only 20 per cent. of the oil, but this may seem to pharmacists somewhat weak. The formula for Compound Syrup of Hypophosphates (*sic*), as written, is more than a little impracticable. The Latin is not quite irreproachable. For example, Confectio Sulphuris Compositus, and Mistura Epileptica cum Arsenicale, may be quoted, while Pepsina is a departure from B.P. usage. For all that, the Sheffield Union Pharmacopœia is a very creditable production. The later chapters deal with foods and diets, poisons and antidotes, hygienic principles, and various other important subjects, while numerous tables of doses, solubility, alcohol conversion, and acid neutralisation are also given. Mr. Antcliffe is to be congratulated on the admirable vindication which the book affords of hospital pharmacy in the provinces.

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[*] Proctor's 'Pharmacy,' 2nd edition, p. 22, or Lucas's 'Practical Pharmacy,' p. 70.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

MEETING OF THE COUNCIL.

Wednesday, October 7, 1903, the President, Mr. S. R. Atkins, in the chair. The other members present were Messrs. Allen (Vice-President), Carteighe, Corder, Cross, Currie, Gifford, Glyn-Jones, Harrington, Harrison, Hills (Treasurer), Newsholme, Park, Robinson, Southall, Symes, Taylor, Wootton, and Young.

Mr. Chater, in the unavoidable absence of the Secretary through indisposition, read the minutes of the previous meeting, which were confirmed.

The Late Barnard Simpson Proctor.

The President said he had to call especial attention to the fact of the recent departure of Mr. Barnard Simpson Proctor, of Westbury-on-Trym, near Bristol, which took place on September 22 last, at the age of seventy-three years. He moved that the following resolution be passed and forwarded to the family:—

> That this Council deeply regrets the death of Barnard S. Proctor, one of the Society's most loyal and respected members, and desires to record its sincere appreciation of his many services to the Society and to the calling with which his name will ever be so honourably associated. As a past member of the Council, and of the Board of Examiners for England and Wales, as a leader of pharmaceutical thought, and as a teacher of pharmaceutical practice, Barnard Simpson Proctor has the highest claims to the gratitude and affection of British pharmacists, and the memory of his strenuous efforts during fifty years for the scientific advancement of his craft will not readily fade from the minds of those who were privileged to work with him, or who have derived encouragement from his labours. The Council tenders its sincere sympathy to the family of the late member and resolves that a copy of this resolution be forwarded to Mrs. Proctor.

The Vice-President seconded the motion, which was carried in silence.

Election of Members.

The following persons having tendered their subscriptions for the current year were elected members of the Society:—

Arnold, Stanley; Southsea
Bailey, John H.; Plymouth
Beynon, Benjamin; Lambeth
Browell, Benjamin C.; Romford
Burnett, George; Ludlow
Cole, Arthur; Gwelo, Rhodesia
Dodd, Richard Jefferson; Hatch End
Errington, John W. B.; Carlisle
Gascoyne, Edward; Moseley
Glen, Arthur G.; Ardrossan
Hadfield, Fred; Milnsbridge
Hitchen, Clement F.; Dorking
Holden, Benjamin; Blackburn
Keene, Hedley H.; Stockwell
Kennett, Edward; Sandgate
Lee, William Brown; Doncaster
Llewellyn, A. D.; Ystrad-Rhondda
MacGregor, Alexander; Forres
Pickles, Walter H.; Liverpool
Storey, Richard; Ulverston
Webster, Magnus H.; Edinburgh.

Election of Student-Associates.

The following persons having tendered their subscriptions for the current year were elected student-associates of the Society:—

Allen, Benjamin G.; Oxford
Brand, Thomas H.; London
Elliott, Frederick; Clay Cross
Evans, Ellis W.; Birmingham
Field, Ernest H.; Cambridge
Garbutt, John H.; Malton
Glenny, Sophia Grace; London
Gorton, Bernard; Snaresbrook
Harker, G. C.; Richmond, Yorks.
Harris, Thomas; Seven Sisters
Harrison, Arthur W.; Southport
Hopkinson, Alfred J.; Canterbury
Horrod, George W. T.; Brixton
Johnson, Frederic L.; Norwich
Pettifer, Thomas P.; Eydon
Piquet, Christine Amy; London
Rich, Edward T.; Llanelly
Roberts, Stanley Vincent; Bristol
Spiers, Chas. S.; Melton Mowbray
Sutton, J. H.; Kingston-on-Thames
Warner, Charles H.; Evesham
Watson, Guilhermia; London.

Restorations to Society.

Several persons were restored to the Society, upon payment of the current year's subscription.

Restorations to Register.

The following persons, who have made the required declarations and paid the restoration fee of one guinea, were restored to the Register of Chemists and Druggists:—

Benjamin Beynon, 227, South Lambeth Road, S.W.
Thomas Ernest Bagshaw Blankley, 182, Albert Avenue, Newington, Hull
Sydney Hooper Campion, 1, Park Terrace, Cambridge
John Eagle, 2, Diamond Cottages, Cromwell Avenue, Cheshunt
Thomas Stableforth Irving, 52, New Kent Road, S.E.
Daniel Harmer Jay, St. George's Road, West Hill, Hastings
Arthur Willis Marshall, 71, Brades Street, Lancaster
Alfred Lowe, 30, Ebor Place, Leeds.

Diplomas.

The undermentioned, being duly registered as pharmaceutical chemists, were granted a diploma stamped with the seal of the Society:—

Hadley, Mary W.
Harper, George
Marris, George Wesley
Pitchford, Wm. Thomas

Finance Committee.

The following report was presented by this Committee:—

September 30, 1903.

Mr. Robinson in the Chair.

Present—Messrs. Atkins and Carteighe.

1. The Secretary submitted the following statement of the accounts:—

General Fund:—	£	s.	d.	£	s.	d.
Balance from last account ...				1.577	10	1
Receipts:—						
Penalties and costs... ...	135	8	0			
Ground rents	13	2	5			
Subscriptions	46	14	6			
Restoration fees	6	6	0			
Examination fees	1,782	18	0			
School fees	60	9	0			
Pharmaceutical Journal ...	1,410	6	0			
				3,455	3	11
				5,032	14	0
Payments authorised by the Council ...				3,423	10	11
Balance...				£1,609	3	1

Amounts Recommended for Payment:—	£	s.	d.
On behalf of the *Journal*	£1.219	12	3
Rent to Michaelmas	205	0	0
House	67	5	0
Law charges	86	15	4
Stationery, etc	62	9	0
Examination charges, etc	75	9	8
Current expenses: England, £450; Scotland, £250	700	0	0
Monthly salaries	166	5	0
	£2.582	16	3

Benevolent Fund (Current Account):—	£	s.	d.
Balance from last account	£230	17	2
Receipts—Subscriptions and ground rents	678	8	3
	909	5	5
Payments—Annuities, grants, etc.... ...	515	14	10
Balance on the current account	£393	10	7
Balance on the donation account	£19	13	6

2. The Committee examined the accounts and found them to be correct, and in accordance with the foregoing statement.

Recommended that the Treasurer be requested to pay the amounts indicated.

R. A. Robinson, Chairman.

Mr. Robinson, as Chairman of the Committee, moved that the report be received and adopted.

Mr. Newsholme seconded, and the motion was carried unanimously.

The Bell Scholarships.

The Treasurer was authorised to pay the first moiety of £15 to each of the Bell Scholars.

Benevolent Fund Committee.

The report of this Committee included the recommendation of grants to the amount of £144 in the following cases:—

Widow of an associate. 53. Liverpool. Has had previous grants.

Registered chemist and druggist. 70. Goole. Has had previous grants.

Widow of a member. 80. Leeds. Has had previous grants.

Widow of a chemist and druggist. 62. Old Kent Road. Has had previous grants.

Widow of a member and subscriber. 58. Morecambe. Has had previous grants.

Widow of a member who had grants previous to his death last February. 72. Anstruther.

Widow of a member. 49. Green Lanes, N.

Former member and subscriber. 61. New Brompton. Has had previous grants.

Widow of an associate who had grants previous to his death in 1896. 53. Wrexham. Has had previous grants.

Widow of a member. 60. Florence.

Widow of a chemist and druggist. 45. Romford.

Two cases were not entertained, and one deferred for further consideration.

Statistics as to Annuitants.

A statement was submitted showing the financial condition of the Fund, the balance on the current account on September 30 being £393 10s. 7d.*

The following particulars of the annuitants now on the list were submitted:—

Annuitants on the list in October, 1902...	37
Annuitants added in December, 1902......	5
	42
Deaths during the year:	
Mrs. Mary Morris	
Mrs. Elizabeth P. Glynn	
Mrs. Martha Jones	
Mrs. Elizabeth Ellis	
Mr. Jas. K. Haworth	
Mr. Chas. Troke	6
Annuitants now on the list	36

The following candidate was not successful at the election in December last:—

Thos. F. Tyrer. 75. Westbury.

The following case has been marked by the Committee for consideration in October:—

Anne Millar. 78. Darlaston.

The Committee having reviewed the applications received during the year, recommended that the following be placed upon the list of approved candidates for an annuity:—

Elizabeth Ekins. Leeds.
George G. Hornsby. Brighton.
Anne Millar. Darlaston.

The Committee further recommended that three annuitants be elected on Tuesday, December 8, 1903.

The Vice-President moved that the report and recommendations of the Committee be received and adopted. He stated that the previous day the Committee dealt with a large number of applications for casual grants, but perhaps the most important business was the selection of candidates for the forthcoming election of annuitants. After full consideration the Committee decided to recommend that four candidates be put upon the provisional list and that three should be elected. During the past year there had been six deaths among the annuitants, and that fact might create the impression that there were six vacancies for candidates, but that did not necessarily follow. The list of annuitants had always been kept up at a large number, and the cost of maintenance had been very considerable; but the Committee was not altogether guided in its decision by the amount of money in hand for the annuitants, because it was felt that money had been forthcoming in the past, and the Committee believed it would be forthcoming in the future. The Committee was guided by the merits of each application for relief. It had at its disposal a very efficient organisation for making the most rigorous inquiry into all cases that came before it, and the Committee made good use of that organisation. There were those who were timorous as to the effect on subscriptions to the Benevolent Fund of so small a number of candidates being recommended for election as annuitants. For their information he might point out that the Benevolent Fund had never been more active than at the present time, there being more cases relieved than ever before. The Committee always dealt with cases in the most sensible manner it could adopt, and it must be remembered that some years ago the casual grants were on a much smaller scale than at present. During the past few years the casual grants had increased in amount and had taken the form of minor annuities, so much so that whereas formerly the grants amounted to about £300, the yearly grants now ranged between £700 and £1,000. Thus many cases which would otherwise be suitable for annuities were dealt with by casual grants, and in some cases the applicants were even better off. Because it was sometimes found, through the inquiries made by the Society's officials, that there were relatives—or perhaps another charitable organisation—who could be asked to cooperate with the Benevolent Fund in looking after the welfare of the applicants, and an agreement was entered into whereby the relatives or charitable organisation, as the case might be, agreed to pay so much per month so long as the Benevolent Fund continued its payments; thus the applicant received more than the amount of the annuity. In that way the Benevolent Fund was doing a larger amount of good than it had ever done before. There was, however, he was sorry to find, an impression among the divisional officers of the Society that since they had been relieved of the duty of collecting the subscriptions of members of the Society there was no longer any necessity for them to ask for subscriptions to the Benevolent Fund. That was a mistake, and he hoped that all Divisional Secretaries would, at the end of the year, whip round their districts as they used to do on behalf of the Benevolent Fund. If they did so, he had no doubt that a considerable amount would accrue, and the Committee would be better able to deal with the applications for relief which were made from time to time. The number of deserving cases was very large, and it was very rare that an application was not entertained, but the Committee felt the need of considerably more money than it had at its command; therefore he hoped that each Divisional Secretary would do his best to obtain subscriptions. Then there was a point that he would like to bring before the notice of the younger members of the craft. Many of the young men in pharmacy were now getting good salaries, but he was afraid comparatively few of them subscribed to the Benevolent Fund. In his opinion that was a mistake on their part. A small subscription to the Fund would not hurt them, while on the other hand it might subsequently prove of great advantage. More than once the Committee had been applied to for relief by some poor widow who had been left with several children to provide for and educate; but, though in all respects deserving of help, those children were not eligible for the Orphan Fund, because their father had not complied with the conditions. Those conditions were that the orphans must be the children of members of the Pharmaceutical Society, who had subscribed to the Benevolent Fund for at least three years. The Committee knew of more than one poor widow at the present time who were working hard to support their children, whereas if the husband had fully complied with the conditions of the Orphan Fund, the little ones would have been well provided for. That was a point which he would commend to the consideration of the young men in pharmacy. He moved that the report and recommendations be received and adopted.

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* This amount is all that the Committee has in hand with which to pay the annuitants at Christmas, and the casual grants in November and December.

Mr. Cross seconded the motion.

The President said he heartily agreed with the course the Committee had adopted. He had had many years' experience of the working of the Committee, and he had felt, with the Vice-President, that they were relieving cases in the most direct and efficient manner by means of the supplementary grants. He wished to say, however, that there was need for more money. He had been told in days gone by that it was not wise to make an appeal for the Benevolent Fund, but he did say most strenuously that the Committee needed more money, and if it was obtained it would be used most profitably. He hoped that Divisional Secretaries and others would not neglect opportunities of obtaining contributions to the Benevolent Fund.

The report and recommendations of the Committee were adopted unanimously.

Mr. Bremridge's Health.

The President said he ought to have made a reference earlier to the Secretary. He was pleased to say that Mr. Bremridge was better, but was not yet allowed to leave his room. He had been suffering from an attack of influenza, and he wished him to make this statement in order to allay the anxiety of those who had kindly made inquiries.

The Martindale Memorial.

The President said he had now to report the acceptance of the Martindale Memorial, and he would ask Mr. Carteighe to move a resolution.

Mr. Carteighe said the resolution he had to propose was drafted by the Society's solicitor to constitute the trust on the part of the Council without getting a trust deed. It was so small a matter, and there might be disadvantages by-and-bye. He made this statement to put himself in order in moving the resolution. The President, as members of the Council knew, on Thursday last accepted, on behalf of the Society, a bust of the late William Martindale and the die for a medal, which he (Mr. Carteighe), as Treasurer of the Memorial Fund, had the opportunity of handing over to him. The remaining portion of the transaction was to hand over the sum of £51 15s. 4d. for the purpose of providing the medal as a permanent record of their former friend and colleague. As a Council, they felt it an honour to carry out the wishes of the members of the Society at all times, but, when the honour was done to one of the past members of the Council, there was a certain amount of pleasure in performing that duty. It was in that spirit that he asked the Council to accept the bust and the die. He would, therefore, move the following:—

> Resolved that—Mr. Michael Carteighe having, in the name and on behalf of a Committee, presented to the Society a white marble bust of, and also a die of a medal bearing a profile of, William Martindale, who was for some time President of the Society, and having likewise presented to the Society the sum of £51 15s. 4d.—all of the said presents be accepted. Mr. Michael Carteighe having likewise, on behalf of the same Committee, expressed a desire that annually the Society should award a medal in silver, being an impress of the said die, and to be called the Martindale Medal, resolved that he be informed of desire and intention on the part of the members of Council present this day to advance fulfilment of the said desire.

Mr. Newsholme seconded the motion. He agreed with all that Mr. Carteighe had said in regard to their old friend and President, Mr. Martindale. He might say, as one of the members of the Committee, that, though a Chairman, Secretary, and Treasurer had been appointed, the work had fallen almost entirely upon Mr. Carteighe, practically the whole of the duties of Chairman, Treasurer, and Secetrary having been performed by him; and he had performed those duties very well indeed. They were delighted to think that they now had such a handsome bust of their old friend Mr. Martindale and a permanent record in the die.

The President said the motion expressed most perfectly and admirably his feelings in the matter.

The motion was then carried unanimously.

Parliamentary Committee.

This Committee presented the following report:—

> Wednesday, September 30, 1903.
>
> Present: Messrs. Atkins, Carteighe, Gifford, Glyn-Jones, Hills, Newsholme, and Wootton. Mr. Carteighe was appointed Chairman.
>
> The Committee discussed and agreed to the following clause for insertion in any future Pharmacy Bill that may be introduced into Parliament:—
>
>> The provisions of this Act shall not interfere with or abrogate any of the rights reserved by Section XVI. of the Pharmacy Act, 1868, or by Section I. of the Pharmacy Act (1868) Amendment Act, 1869.
>
> The Committee recommends that, before the commencement of next session, steps be taken to introduce the Pharmacy Bill, with the additional clause, into Parliament at such time as the Committee may deem desirable.
>
> It was agreed that steps be taken to prepare an active crusade on behalf of the Bill.
>
> Michael Carteighe, Chairman.

Mr. Carteighe, as Chairman of the Committee, moved that the report be received and adopted. Members of the Council would probably remember that some of their medical and veterinary friends, when the Pharmacy Bill was before Parliament last session, thought the Council had not considered the rights they enjoyed under the Pharmacy Acts of 1868 and 1869. The Parliamentary Committee felt it was desirable that any privilege they claimed should be met as far as possible in amending any draft Bill which might be introduced next session. Therefore the Committee had drafted a clause which preserved to those who had special privileges or exemptions in the Pharmacy Acts, 1868 and 1869, the privileges which they had hitherto enjoyed. He did not need to say anything more except that it would be the duty of the office, when the Council had approved of the report, to send a copy of the new clause to those public bodies that were affected by it. Then the Committee had considered what steps should be taken to introduce the Bill next session, and it came to the conclusion that it was desirable that the Bill should be introduced as it stood last session, with the addendum. There was a rumour in the air of a possible dissolution of Parliament, and in the meanwhile it was thought that their friends in the country should be encouraged to be ready when the General Election came to test the fidelity of their candidates in the matter of pharmaceutical legislation. It would be necessary to consult the gentlemen who backed the Bill last session and others, but, as some of them were away, the Committee was not able to say definitely who would introduce it.

Mr. Young asked whether the Committee had considered the question of dropping any of the clauses in the Bill.

Mr. Carteighe said it had not been thought desirable to drop any of the clauses. There was one of their colleagues who thought it might be wise not to press the Bill in its present form at all, but to consider a new Bill; but, with that exception, the Committee was of opinion that, as a matter of tactics, it was better to introduce the Bill in the form it stood last session with the new clause.

Mr. Newsholme seconded the motion. He did not think it was necessary to add to what had been said. The Committee had spent a considerable amount of time in discussing, very freely, the position of the Bill, particularly in reference to Clause 7, and the members of the Committee were almost unanimous in deciding to present the Bill in the same form as it was presented last session with the alteration suggested. He was one of those who had rather hesitated as to the wisdom of proceeding with Clause 7; but during the recess he and others had very carefully considered the matter, and he was bound to say that though at one time he had some little doubt about Clause 7, he now felt that it was necessary to keep that clause in the Bill, because the only people who objected to the clause were the people who would be hit in the event of the Bill becoming law. Therefore he believed it was the duty of the Society to introduce the Bill again as it was introduced last session; and if Parliament was dissolved, members of the Society should do their best to get candidates interested in the question. Personally, he felt that they were entitled to all that was asked for in the Bill, but it might be necessary to modify certain clauses, and in that case he was prepared to take a little less.

Mr. Gifford, as the member of the Committee who objected to the Bill in its present form, explained that he had considerable regard for their former experience. The present Bill had been standing in the way for three years, and the whole of the experience of the past did not point to any progress in future. To his mind, the Bill in its present form was too complicated and not definite enough, and, having regard to the political atmosphere, it was not likely to secure that consideration in Parliament which would make it of practical benefit to the trade. He believed it would be better to ask for a small Bill—say a Titles Bill—because it was not possible to conceive that such a Bill would be rejected. On the contrary, it was possible that a request to conserve the title to those personally qualified by examination would be granted. But if it was decided to proceed with the Bill as it stood, he said emphatically that they should make it quite clear that there was no intention to accept the Bill unless Clause 7 was kept intact. Mr. Newsholme had said he approved of the Bill, but would take what he could get.

Mr. Newsholme: I did not say quite that.

Mr. Gifford, continuing, said the whole principle of the Bill was involved in Clause 7, though so far as he was concerned it did not go far enough, because it recognised a body of people, while making it impossible for them to exist. That was not the way he should have chosen. The method which appealed to him was to state in direct and unmistakable language that the principle chemists wished recognised was the principle of individual qualification, with the title restricted to the person who earned it, and that they would not have and would not allow a vicarious qualification.

Mr. Robinson thought the decision of the Parliamentary Committee was right, and although matters looked rather hopeless in regard to Clause 7, he thought the fact that some of the permanent officials of the Government were not opposed to the principle involved in that clause, was encouragement to proceed with it. He had been out of town recently, and while he was away he was the guest of one of the gentlemen who blocked the Bill last session. They had a conversation about the Pharmacy Bill, and the gentleman in question thought it was a monstrous thing that the Bill should seek to prevent him, as a director of a company, carrying on business. He (Mr. Robinson) took the opportunity of explaining the position of affairs, and he found that his host knew nothing about the Bill. He pointed out that it was simply a flaw in the drafting of the Pharmacy Act which made it possible for a company of unqualified persons to carry on the practice of pharmacy with the aid of a qualified manager, and he suggested that it would be far better for companies such as his host represented to retire from a small business which they could not themselves manage. He urged his host to reconsider the matter and to withdraw his blocking motion, but he hardly thought he would do so. Still, he was not at all sure that if they proceeded with the Bill they would be defeated. He had been very pleased to learn that several prominent members of Parliament and permanent officials of the Government were of opinion that chemists were right in endeavouring to get their personal qualification recognised. It was possible that some of those who backed the Bill last session would not back it again, but he thought they ought to press forward with it.

Mr. Glyn-Jones thought it hardly fair to say that the Bill had blocked the way for three years, unless Mr. Gifford could say what it had blocked. If a member of the Parliamentary Committee could come to the Council and say that there were members of Parliament and Government officials who were prepared to support something different than the Bill already drafted, but that they were not prepared to support that Bill, there would be some justification for his statement that the Bill was blocking the way; but if he could not say that, he had no right to say so. Mr. Gifford had said the Bill did not go as far as it ought to go, because it did not secure for the qualified individual his rights; then, on the other hand, he did not like it because it asked for more than would be granted. That was not logical; but it was quite logical for the Committee to discuss tactics either in Committee or in open meeting. Personally, he saw no more reason at the present time why Clause 7 should be dropped than he did when the clause was first introduced into Parliament, and he associated himself most strongly with those members of the Committee who contended that Clause 7 was a just demand to make. The only opposition, as Mr. Newsholme had pointed out, had come from those who had private interests to serve, but who had not been able to point out how the danger that the Society wished to remove could be avoided. Until that was done, there was not the slightest occasion to reconsider Clause 7.

Mr. Wootton said he entirely agreed with the remark that had been made that they must go forward with the intention of retaining Clause 7 in the Bill, for the one intention they had in drafting the Bill was to deal with the practice of pharmacy by companies. There was no other ground upon which they could consistently support their claim. They believed that Clause 7 agreed with the principle of the Act of 1868, and he did not approve of the idea of going to Parliament and saying that it was what was right, but more than they ought to expect to get. He would say that it was their minimum, and if they got the matter discussed in Parliament, and were defeated, then they could not help themselves. They had brought the Bill forward as their just rights, and he was very pleased to hear Mr. Robinson say that there were influential people who agreed with that view. It was, he thought, a particularly hopeful sign.

The report of the Parliamentary Committee was then adopted.

General Purposes Committee.

The report of this Committee was as follows:—

Tuesday, October 6, 1903, Mr. S. R. Atkins, President, in the chair. Present: Messrs. Allen, Carteighe, Corder, Cross, Gifford, Glyn-Jones, Currie, Harrington, Hills, Newsholme, Southall, Symes, Taylor, and Young.

The minutes of the previous meeting were read and confirmed.

The Committee considered the following resolution of the Council passed at its August meeting:—

> That the General Purposes Committee be asked to consider the advisability of establishing post-graduate lectures on the sciences included in the Minor Examination as applied to the present-day business of the chemist and druggist.

After discussion, the Committee resolved that it was not practicable to carry out the post-graduate course of lectures proposed in the resolution.

It was recommended that the Evening Meetings Committee be asked to arrange for the delivery, if practicable, of lectures on technical subjects during the session, similar to those given by Mr. Goldby and other gentlemen last year.

The President reported that it was essential that adequate accommodation should be at once provided for the lady students in the School of Pharmacy. He submitted plans and estimate (£85) of the work necessary, and the Committee recommends that the work be carried out forthwith under the direction of the President and the School Visitor.

After a brief discussion, part of which was in Committee, the President explained that, owing to the increase in the number of ladies now attending the School of Pharmacy, it was absolutely necessary that the recommendation contained in the last paragraph of the report should be carried out without delay. He therefore moved that the recommendations of the General Purposes Committee be agreed to.

Mr. Glyn-Jones seconded the motion, and it was carried.

Sub-Committee to Select Examiners.

It was resolved that the President, Vice-President, and Messrs. Carteighe, Hills, and Newsholme be appointed a subcommittee to select and recommend suitable persons for appointment as members of the Board of Examiners for England and Wales for the ensuing year.

Report of the Board of Examiners.

England and Wales.

October, 1903.

	Candidates.	Passed.	Failed.
Major	5	4	1
Minor	224	60	164

Certificates were received from fifty-six persons, who had applied for registration as "Apprentices or Students."

The Board also submitted a further report, dealing with the subjects referred to in the report of the Sub-Committee presented at the August meeting of the Council (see *ante*, p. 240), and it was referred to the General Purposes Committee for consideration.

Correspondence.

Communications were considered from the following:—

From the Barnsley and District Chemists' Association, thanking the Council for compiling the 'Compendium' rendered necessary by the Medicine Stamp regulations.

From the Grimsby and District Chemists' and Druggists' Association, announcing the retirement of Mr. R. Cook from the office of Divisional Secretary, and suggesting the name of Mr. H. W. Colley as his successor.

From the Privy Council Office, enclosing copy of a Royal Decree recently published in the Netherlands on the subject of the regulation and practice of druggists in that country.

From Mr. J. C. Pentney, suggesting the desirability of asking the co-operation of the London Chemists' Association for the purpose of interviewing members of Parliament in connection with the Pharmacy Bill.

From Mr. Isaiah Bourdas, expressing his willingness to accept the position of Auditor to the Society, to which he was appointed at the last meeting of the Council.

From Mr. F. G. C. Walker, one of the Bell Scholars for last session, thanking the Council for the permission accorded him of attending the advanced course in the School of Pharmacy this session.

From Mr. C. Cutaiar, of Malta, submitting for consideration a matriculation certificate of the University of Malta.

From Mr. R. A. Cogan and H. Sheasby, submitting for consideration preliminary certificates of the Royal Colleges of Physicians and Surgeons in Ireland.

From Mr. G. W. Sawdon, submitting certificate of ill-health, and asking to be excused for non-attendance at the oral portion of the recent examination.

The certificates were referred to the Boards of Examiners for acceptance if approved, and Mr. Sawdon's request was granted.

La Société de Pharmacie de Paris.

Mr. Carteighe moved, and it was seconded and carried, that the Society's seal be affixed to an address to be presented by the President, on behalf of the Society, to the Société de Pharmacie de Paris on the occasion of its centenary.

The President explained that he hoped to be present at the centenary in Paris on October 17, and part of the proceedings would be the reception of addresses from various public bodies, and the one referred to had been prepared as going from the Pharmaceutical Society of Great Britain.

Law Committee.

The report of this Committee was considered in Committee, and proceedings were authorised against a number of persons for alleged infringements of the Pharmacy Act, 1868.

This concluded the business of the Council.

EXAMINATIONS IN LONDON.

September-October, 1903.

Minor Examination.

Candidates examined 224
" failed 164
" passed 60

Ailsby, John William; Louth
Armitage, Arthur; Horbury
Arnold, Stanley; Southsea
Barltrop, Georgina E.; Walthamstow
Braid, John Borlase; London
Browell, Benjamin C.; Romford
Burt, May; Wimborne
Burton, John Robert; Normanton
Busbridge, Harry L.; Liverpool
Campbell, Arthur George; Thirsk
Campbell, Robert S.; Wimbledon
Cleaver, Samuel Ernest; Leicester
Course, Arthur Hattatt; Cambridge
Davies, John James; Llandyssul
Davis, Frederic T. S.; Teignmouth
Dawson, George Henry; Southend
Fairbairn, James; Redcar
Field, Ernest Harry; Cambridge
Fuller, Edgar George; Ealing
Gray, Sydney Bunting; Rugby
Hewlett, Vivian C.; Beckenham
Hoyle, Frederick William; Leeds
Johnson, Alec S. W.; Treadane
Jones, Daniel Thomas; Swinton
Jones, Hugh; Talysarn
Jones, Ivor J.; Penrhyndeudraeth
Knight, Leonard H.; Barnstaple
Lee, William Brown; Doncaster
Letherland, H. G.; Nottingham
Lewis, Walter John; Leicester
Lowe, Christopher H. E.; Bristol
Miller, Frank Covell; Croydon
Northey, William George; Alford
Ough, Thomas; Liskeard
Pearson, John Wade; Littleborough
Peasnall, Horace A. J.; Norwood
Peck, Alfred Newton; London
Plummer, Richard K.; Thormanby
Ratsey, William Henry; Oxford
Ravenshaw, John; Southwark
Rees, Harding Miles; S. Norwood
Rutter, Arthur D.; Warrington
Sagar, Henry; Ashton-under-Lyne
Scott, William Harrison; Chard
Skelton, George Arthur; Sileby
Smith, Frank Ramsay; Liverpool
Smith, William Thomas; London
Stout, Harry; Tyldesley
Taylor, Frederick; Wigan
Thomas, John; Machynlleth
Thompson, Edwin; Liverpool
Thompson, Etheldreda; Eastleigh
Thompson, George W. A.; Barlbro'
Turner, George Augustus; Belfast
Walton, Samuel H.; Didsbury
Warren, Margaret G.; Catford
Watson, Charles Herbert; Derby
Welch, Tom Salthouse; St. Helens
Whitehouse, Sydney P.; Workington
Withnall, Nahor; Manchester

Registration as Apprentices or Students.

Certificates by approved examining bodies were received from the undermentioned 56 persons desirous of being registered as Apprentices or Students:—

Aitken, James B., jun.; Saltcoats
Anderson, John A.; Arbroath
Archer, Thomas; Gateshead
Aspinall, Henry; Burnley
Baxter, Percy C.; Thornton Heath
Blomeley, H.; Chorlton-cum-Hardy
Bowen, Thomas R.; Ammanford
Brand, Alexander L.; Dundee

Brocklesby, Horace M.; Harlesden
Cade, Wm. M.; Barton-on-Humber
Chipperfield, H. A.; Forncett St. Peter
Colensa, Thomas W.; Falmouth
Dunnet, David; Edinburgh
Elgey, William T.; Driffield
Elms, Edith; Lowestoft
Eunson, John, jun.; Biggar
Farraday, Augustus; Tottington
French, Maurice; Cambridge
Gibson, Eustace G.; Burgess Hill
Glass, William A.; Perth
Goodwin, Henry; Birmingham
Hart, James M.; Campbeltown
Irving, George W.; Heckmondwike
Johnson, Frederic L.; Norwich
Lane, William J.; Burton-on-Trent
Leeson, Leonard, J.; Solihull
Marks, Charles; South Shields
Milne, George M.; Turriff
Milton, William; Buckie
Minnitt, Eleanor C.; London
More, John C.; Lasswade
Murgatroyd, John L.; Southowram
Nash, Frank; Limehouse
Nichols, Reginald A.; Walthamstow
Pain, Gordon N.; Cambridge
Parry, Robert E.; Newport, Mon.
Petrie, William K.; Dundee
Rennie, John; Stalybridge
Richards, Charles S.; Clapham
Rickard, James W.; Filey
Rickeard, Reginald; Heaton
Rothstein, Albert; Leeds
Sharples, Beatrice; New Mills
Smith, Ernest W.; New Cross
Stedman, Howard; West Malling
Steedman, Thomas M.; Beverley
Stephen, Isabella H.; Arbroath
Stone, Richard E.; Camberwell
Storm, Herbert R.; Exeter
Stout, Henry; Edinburgh
Stroud, Vivian B.; Dagenham
Thomas, Edward L.; Clevedon
Watson, Guilhermia; London
Webster, George E.; Selby
Whitehead, Seth; Burnley
Williamson, Charles H.; Manchester

MAJOR EXAMINATION PAPERS (EDINBURGH).

October, 1903.

CHEMISTRY.

Time allowed, Three Hours.

Five questions only to be attempted.

1. Describe two methods for the separation of arsenic from antimony. Indicate clearly the differences in the chemical character of these elements which underlie the methods described.

2. What impurities would you think ikely to be present in commercial samples of—

(*a*) Sodium chloride?
(*b*) Potassium iodide?
(*c*) Hydrochloric acid?
(*d*) Concentrated sulphuric acid?

Give reasons in each case, and state what methods you would adopt in order to test for these impurities.

3. How do the following substances behave when heated?

(*a*) Ammonium oxalate.
(*b*) Calcium oxalate.
(*c*) Urea.
(*d*) Litharge.
(*e*) Sodium formate.

4. Give three methods for the preparation of ethylamine, and also an account of the more important properties and reactions of this substance.

5. Give an account of formic aldehyde, its preparation, chief properties, and relationships.

6. The equivalent of zinc is 32·7. What is implied by this statement? Give two methods for the determination of the equivalent of zinc.

7. How would you separate manganese from zinc? Discuss the chemistry of the methods you describe.

8. How are malic, tartaric, and succinic acids related to each other? How would you proceed in order to effect the conversion of these substances into one another?

PHYSICS.

Time allowed, Three Hours.

Five questions only to be attempted.

1. Discuss the meaning of the following terms:—

(*a*) The critical temperature of a gas.
(*b*) The critical pressure of a gas.
(*c*) The two specific heats of a gas.

2. How would you proceed in order to determine the refractive index of a glass prism for light of a given wave length?

3. Upon what does the vapour pressure of a liquid depend? How would you proceed in order to demonstrate the truth of your answer?

4. Describe the Bunsen ice calorimeter, and explain the method of using it.

5. Give an account of the construction and use of a tangent galvanometer.

6. Discuss the differences in meaning between the following:—

(*a*) Specific gravity and density.
(*b*) Work and rate of work.
(*c*) Refraction of light and dispersion of light.
(*d*) Boiling point and absolute boiling point.

7. You are given a voltaic cell in a closed box, but with the terminals exposed. How would you determine—

(*a*) Which was the positive electrode?
(*b*) The difference of potential between the terminals?

8. A current of electricity is passed through separate solutions of—

(*a*) Sulphate of silver.
(*b*) Lead nitrate.
(*c*) Potassium acetate.

Give an account of the changes which take place.

BOTANY.

Time allowed, Two Hours.

1. Describe in detail the structure of a typical epidermis, giving drawings of it, and of such appendages and other structures as are associated with it. Explain the physiological use of the structures you describe.

2. Discuss the sources of combined nitrogen available for plants.

3. Describe in detail the floral construction of the Cruciferæ, and compare it with that of the Fumariaceæ and Papaveraceæ.

PRACTICAL BOTANY.

Time allowed, One and a-half Hours.

1. Make preparations illustrating fully the structure of specimen A. Leave them for inspection. Make sketches from the preparations themselves, and give explanatory references.

2. Refer the plants B and C to their natural classifications, giving reasons for your decisions.

3. Describe in detail specimen D.

MATERIA MEDICA.

Time allowed, One Hour.

Two questions only to be attempted, *but No. 3 must be one of them.*

1. Sketch the relationship of the alkaloids of Conium. How is Conine obtained. Describe its physical and chemical characteristics. How can it be synthetised?

2. Cantharides.—State the source, and describe the method of collection, preparation, and preservation. How is Cantharidine obtained? Describe its behaviour with acids and alkalies.

3. Starch.—The Pharmacopœia permits three sources. Outline the method employed to obtain it in each case, and describe in a general way the character of the product.

PRACTICAL MATERIA MEDICA.

Time allowed, One and a-half Hours.

1. Identify the official leaves in the parcel supplied, and point out their distinguishing features. Make a transverse section of one, and draw and describe it.

2. Report on the sample of Starch. Give in detail the reasons for your conclusions.

PHARMACEUTICAL SOCIETY OF IRELAND.

ANNUAL MEETING.

On Monday, October 5, 1903, in the Society's house, No. 67, Lower Mount Street, Dublin, the President, Mr. George Beggs, in the chair.

Election of Council.

The President announced that there had been no contest, and that the following gentlemen had been elected to the Council:—Professor Charles Tichborne, Dr. Meredith Whitla, J.P., Messrs. William Doig, William Vincent Johnston, Thomas Nicholson Moffett, Thomas Batt, and Dr. James Aloysius Walsh.

President's Address.

The President said that in most points the work of the Society during the past year would be found satisfactory. They could see that there was a desire on the part of the several branches of the Society to work in harmony together. The financial statement was of a very satisfactory nature, taking into account the general depression over the whole country, and the falling off in numbers on the Register was chiefly due to the rule of erasing the names of those that do not reply to registered letters. Still, the membership was fairly steady. Bearing on this point, he would suggest that there might be formed in each of the chief centres and towns local societies, in which matters affecting pharmacy could be discussed. That would give an opportunity of inducing new membership.

Prosecutions.

These had been carried out during the past year by the Royal Irish Constabulary, and included cases for non-labelling poisons, in which a conviction was obtained and a fine of £5 inflicted, and a case of a hardware merchant for selling preparations containing scheduled poison, where a fine of £10 was imposed. A very large number of cautionary notices had been served by the Royal Irish Constabulary, who had been urged to use vigilance in seeing that illegal sales were relinquished. However, in some recent prosecutions they had to contend with the difficulty of having cases tried before magistrates in sympathy with the offenders. This state of affairs was fully borne out in the late Ballinasloe cases. There they had at least one of the judges on the Bench turning advocate for one of the offenders, and the Bench decided against the Society, on the ground that because the poisons sold were of the packed sort they necessarily came under the head of "patents," and they actually ruled that all "patents," those containing poison and otherwise, were free to be sold by any unqualified trader. The Council took steps to have such decision reversed, and succeeded in getting fines of £10 and costs, and the thanks of the Society were due to Mr. Wells for attending at Ballinasloe to watch the cases.

Educational.

The Schools had during the past year been conducted with the same unremitting care and ability as heretofore, under the guidance and supervision of Professor Tichborne, assisted by Mr. Kelly. In the chemistry class the number of students had been fairly up to the average, but the botany and materia medica class did not appear to have received the support it deserved. The falling off had been very marked, the number of students attending having been only twenty-four, while in 1902 there were forty-one. The fears entertained in 1901 with regard to the theoretical class had been verified. Only two students desiring to take out this special course, the Council did not feel justified in continuing the expenditure necessary for the efficient working of it, and accordingly had to close it.

Examinations.

They had lost the services as Examiner of Mr. Forbes B. Watson, B.Sc., who completed the full term of five years as Examiner in Chemistry, but the Council had been fortunate in appointing Mr. D. J. Jardine, A.T.C., F.C.Sc., M.P.S.I., who held a very high record. In each of the four grades there had been an increase in the number of candidates over last year. The preliminary examination this year for the first time had been spread over two days instead of one, as formerly, one day being devoted to the papers and the other to oral work. In the Registered Druggist Examinations they had the largest increase for some years back, the number coming up being forty-one, whereas in the previous year they had only twenty-nine. Again, in the Assistants' Examinations there was an increase over that of last year.

Medals.

The gold medal had been awarded to Mr. W. H. Howse, L.P.S.I., for having obtained the highest number of marks during the year. Mr. Howse made the very creditable score of 243 out of a possible 300. The silver medal had been awarded to Mr. V. E. Hanna, M.P.S.I., he having gained 240 out of a possible 300.

His Majesty the King.

The King having visited the city last July, a loyal address of welcome was presented to him by the President and Mr. Wells, ex-President.

Registrar's Report.

Thanks were due to the worthy Registrar, Mr. Ferrall, who at all times rendered ready assistance. The following were the statistics for the year:—

	1903.
Candidates for Examination	88
Candidates rejected	40
Candidates passed	48
Candidates passed other Examinations	17
Total registered	65

Pharmaceutical Licence Examination.

	1903.
Candidates	86
Candidates rejected	51
Candidates registered as Pharmaceutical Chemists	35
B.A.H.I. registered as Pharmaceutical Chemists	2
	37

Registered Druggist Examination.

	1903.
Candidates	41
Candidates rejected	20
Candidates passed	21

Pharmaceutical Assistant Examination.

	1903.
Candidates	15
Candidates rejected	5
Candidates passed	10

Subscribers.

	1903.
Members	194
Associate Druggists	32
	226

Number of Persons on the Registers.

	1903.
Pharmaceutical Chemists	676
Chemists and Druggists	238
Registered Druggists	491
Pharmaceutical Assistants	64
	1,469

The chemists and druggists showed a reduction of twenty-three and the registered druggists a reduction of sixteen, largely due to erasures for non-reply to registered letters, and, deducting the increases in the number of pharmaceutical chemists and pharmaceutical assistants, there were fourteen fewer names on the Registers now than last year.

The Medals.

The President said he was sorry the winner of the gold medal, Mr. Howse, was not present to receive it. The medal would be left with the Registrar for him. He (the President) also regretted that the rules of the Society did not admit of a second gold medal being given to Mr. Hanna instead of a silver one.

Summaries of accounts were submitted by the Honorary Treasurer, Mr. Smith.

Discussion.

Mr. Bernard said he wished it to be clearly understood that his remarks were directed to the Council and members as a body, and should be accepted as devoid of any personality. The Vice-Presidentship had been most justly conferred on a northern member, and this gave one special satisfaction. He was glad to know that for the next three years, at any rate, an absence of Dublin pharmacists from the Council would not be noticeable, and that the principal pharmacies in this city would have an independent and straightforward representative in Dr. Walsh. The most striking feature of the report was the entire and absolute absence of any attempt on the part of the Council to carry out the provisions of the Pharmacy Acts in regard to safeguarding the lives of the public and in protecting its licentiates and members from the infringements of illegal trading by unqualified persons. It was for the performance of these functions that the Pharmacy Bill was passed, and so it was very strange that these duties have been absolutely neglected during the past year. He challenged the President to state that the lack of prosecutions had been due to the absence of infringements of both the Pharmacy Acts and of the Poison Act. To his personal knowledge, not alone in Dublin, but throughout the provinces, such illegal practices were rampant, and yet the Society posed as the guardian of the lives of the public, but did nothing. The Society was not a self-supporting one. It was not kept alive by its members, for, after deducting the sum spent on supplying the trade Journal, it had the magnificent income from members of about £150 per annum, which was not sufficient to pay Registrar's salary and rent and taxes. Still it spent something like £800 per annum. The Council took care that these accounts were not available for examination for fully three months hence, and thus no opportunity for their discussion was afforded for twelve months hence. But by the last published report it was shown that between £700 and £800 was annually supplied to the Society, not by members, but by the despised licentiates, who, when they dared to complain to the Council of infringements of their rights, and asked for bread, were offered a stone, accompanied, according to one of the convenient "unwritten laws," by a cool request to send on a guinea for the stone or for membership. Having now shown that the Society was supplied with ample funds to carry out their public duties, and that such sums came from the licentiates, it only remained to ask what return the licentiates got in the way of protection; and he said, without hesitation, none whatever. The accounts were no doubt correct, as showing the money received and expended during the past year, but they in no way disclosed the Society's exact financial position, for they only showed how much has been received and how much paid. Any insolvent or fraudulent trader could give such an account and appear well off, so long as he had not to disclose his unpaid debts. He moved that the reports and accounts be adopted with regret.

Mr. Conyngham, jun., formally seconded Mr. Bernard's motion.

Mr. Kelly: I move an amendment that the report be adopted.

Mr. Curham: I feel great pleasure in seconding that. I don't see the use of the word "regret" or what it means. It is absurd.

The President put Mr. Kelly's amendment, and declared it carried on a show of hands, and it was then formally passed as a substantive motion.

The President: Touching Mr. Bernard's charge against the Society, I may say, as well as its Council, I am sorry indeed that one who was so long on the Council and had his share of its work should have so disparaged the whole body. He has made a charge against the whole working of the Society, for he has said that we have done nothing and that we do nothing. He was an active member of the Council for some years, and therefore he did nothing according to his own making out.

Mr. Bernard: I spoke about the last year.

A passage then ensued between the President and Mr. Bernard, the former expressing his astonishment at Mr. Bernard's remarks. He was very sorry that an old member of the Society, who had held the position of Vice-President, should so far soil the nest in which he lay.

Mr. Bernard repeated his previous allegations, and challenged the President to say whether it was not a fact that the lack of prosecutions was owing to a cause other than because there was no scope for them. It was an acknowledged fact that the income of the Society depended on its licentiates and not on its members. The Society was not carrying out the objects for which it was established.

Mr. Wells said the charges made by Mr. Bernard answered themselves. The prosecution at Ballinasloe was one that the Council had under consideration before the police took it up. After the decision of the magistrates, the Council at once instructed their solicitor to bring the matter into the King's Bench. Fresh summonses were issued, however, and at the hearing the solicitor for the defendants said he could not defend the case, and the result was that two penalties of £5 each were imposed for each of the offences, with 1s. 6d. costs in each. He (Mr. Wells) thought that persons who made charges should know what they were talking about.

Mr. Kelly said all the members must know what great difficulty the Council had experienced in getting convictions. In every case that they took up the Society was at a loss.

Educational Matters.

On the motion of Mr. Cunningham, seconded by Mr. Corrigan, a report on the state of the Society's School was adopted.

On the motion of Mr. William Corrigan the following resolution was, after discussion, adopted:—

> That this meeting suggests to the Council that a two years' certificate in practical pharmacy, after passing the Preliminary Examination, be accepted by the Pharmaceutical Society of Ireland for the Assistants' Examination.

The reasons given in support of the above were mainly that the prospect of an examination at the end of two years was more likely to keep the student industriously to his work than an examination four years off; and that if he had to do four years he would go in for the Final, and not be an assistant at all.

Election of the Council.

Mr. J. J. Bernard moved the following:—

> That this meeting requests the Council to take such steps as are necessary to secure absolute secrecy in voting for members of the Council at annual elections.

His reason for doing so was that, according to the present system of taking the votes by ballot, the identity of the voters could be discovered. A more perfectly secret system would lead to a larger number of members of the Society exercising their votes.

Mr. Wells, Mr. Conyngham, the President, and others said the voting had been always kept practically secret. None of the gentlemen engaged in the scrutinies ever looked at the names of the voters.

The motion was carried.

Guardians and Drug Supplies.

Dr. McWalter moved the following resolution:—

> That this meeting suggests to the Council to consider that the preparation of drugs and chemical substances should, as far as possible, be encouraged in this country, in order to give students an opportunity for acquiring a practical knowledge of the subject; and that the Local Government Board be requested to give boards of guardians, and other public bodies, power to give a preference to drug contractors supplying articles of Irish manufacture when the prices are nearly the same as those of English contractors.

Under a recent regulation of the Local Government Board boards of guardians were obliged to accept the lowest tenders for drugs, and if they did otherwise they were surcharged. The result was that a house in England that did not contribute a penny towards Irish taxation would get the contract if its tender was threepence in the pound less than the others.

Mr. Curham seconded the motion, which was, after some discussion, passed unanimously.

The meeting terminated with a vote of thanks to the President.

BRADFORD CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Tuesday, October 6, 1903, Alderman Henry Dunn, President, in the chair.

Presidential Address.

The President, in the first place, expressed regret at his having been elected to the position, on the ground of his numerous responsibilities. The barrenness of the result of the attempt to pass the last Pharmacy Bill was a striking testimony to the wisdom of the policy of the Council in limiting the provisions of the Bill to a small number of the many amendments of the law which were desired. The staunch friends who had protested against the meagreness of the proposals of the Bill had not taken into due consideration the fact that every separate subject included meant an additional opportunity for attack from their opponents and a corresponding diminution of the chances of success. The fate of the Bill afforded yet another illustration of the fact that the whole system of private Bill legislation was extremely unsatisfactory. The so-called inquiry by the Poisons Committee and the extraordinary character of the Committee's report were sufficient to rouse the indignation of thoughtful men. This precious Committee held a quasi-judicial inquiry which had all the elements of a farce, but with results which might prove to be most tragical. It was said that at least one interested person acted as a judge, and that the bulk of the evidence submitted was given by prejudiced persons. The question of the constitution of the Pharmaceutical Council had been again brought to the front by the interesting and carefully-thought-out scheme of Mr. J. F. Tocher, recently submitted at the meeting of the Federation of Local Pharmaceutical Associations. His own opinion was that some such scheme would prove of immense value in promoting the best interests of the Society. One of the most effective means of bringing in registered men who had hitherto remained outside would be to provide that members of the Society in all parts of the country should have direct local representation on the executive authority. The recent decision of the Inland Revenue authorities as to the use of ailment names had caused a considerable flutter amongst the fraternity. The ultimate outcome of it was likely to be a substantial gain. The concession granted to chemists, who were "persons" within the meaning of the Pharmacy Act, was a valuable one. In this connection the Pharmaceutical Society had cast traditions to the winds, and had set about the compilation of a 'Compendium of Medicines' which would be of great value to chemists. It was necessary to distinguish between the proposed 'Compendium' and the 'Pharmaceutical Journal Formulary.' The *Pharmaceutical Journal* had announced that publication of recipes in the 'Formulary' would satisfy the Inland Revenue authorities if the initial letters "P.J.F.," with the numbers of the recipes, appeared upon the labels. Thus "P.J.F. 242" would be a sufficient description for the "Liver Pills," the formula of which appeared on page 14 of the Formulary. The step taken by the Journal in compiling such a list was a very commendable one, which was sure to be greatly appreciated. Going on to speak of the difficulty experienced by chemists in obtaining apprentices, which he said had become somewhat acute, he referred to the causes which have frequently been mentioned elsewhere; and, finally, he suggested that the Association might add to its present usefulness by instituting an arrangement for an interchange of goods over-stocked, making itself the medium for the collation of lists of such goods, so that members might be able to purchase from each other, and thus prove mutually helpful.

Discussion.

Mr. Waddington, after complimenting the President on his address, spoke of Mr. Tocher's scheme, and said that it appeared to him to be cumbersome, and defective in the respect that it only provided for triennial elections. He much preferred the scheme which he put before the Halifax and Wakefield Associations last year, and which provided for an election in some part of the country every year, and thus gave some opportunity of an expression of opinion in each year. He moved a vote of thanks to the President.

Mr. R. W. Silson seconded the vote of thanks, which was carried.

Alderman Dunn said that the reason why he preferred Mr. Tocher's scheme was that he thought it was so good a thing to have each member of the Council directly responsible to a certain number of chemists.

Mr. Waddington said the evil of having too small an area for a constituency was that it was difficult to get a suitable man within that area, and that they had to go outside, with the result of a want of touch with the constituency.

Other Business.

Mr. Dutton was elected to represent the Association on the Council of the Bradford Chamber of Trades, in place of Alderman Dunn, who is now on the Council by virtue of his presidency of the Association.

It was announced that the President of the Pharmaceutical Society had promised to attend a meeting of the Association on Wednesday, the 28th inst., and that on the 20th there would be a discussion on the stamp duties.

The following were elected as ordinary members:—Mr. W. E. Metcalfe, Mr. F. A. Wilman, and Mr. Foster Smith. Mr. F. A. Wilcock was elected an honorary member.

GLASGOW AND WEST OF SCOTLAND PHARMACEUTICAL ASSOCIATION.

ANNUAL MEETING.

Thursday, October 1, 1903, the President, Mr. W. L. Currie, in the chair. There was a good attendance of members.

The Conference and the Compendium.

Mr. Currie reported that he and several other members had attended the British Pharmaceutical Conference at Bristol. They had received a very hearty welcome, and the Conference was most successful. He thought, speaking of the Compendium, which would be considered later, that the Conference Formulary Committee would have been the proper body to take up this matter; and, besides, it would only have been a graceful recognition of the useful work that Committee had done for many years past.

Mr. Maben agreed with all the remarks made by Mr. Currie with regard to the Conference, which had been a distinct success. He also considered that the natural repository for the new recipes was the 'Year-Book of Pharmacy,' which could publish formulæ from year to year without any extra expense. It would have made the 'Year-Book' of some real commercial as well as scientific value.

Annual Report.

The annual report was submitted by the Secretary, Mr. J. P. Gilmour. Reference was made to the programme of work done last year, and attention was called to the co-option of Mr. Currie to a seat at the Council Board. They congratulated Mr. Currie on his selection, which was also a compliment to the Association of which he was President.

The Treasurer, Mr. Maben, submitted the balance-sheet, which showed an income, including the balance of £29 6s. from last year, of £37 1s. 5d., and an expenditure of £10 9s., leaving a balance of £26 12s. to be carried forward.

The adoption of the reports was moved by the Chairman and seconded by Mr. Boyd, and agreed to, whereupon Mr. Currie referred to his co-option to the Council. He wished to thank the Association for the efforts it had made, and all who had voted for him. He had, as they knew, strong opinions on certain subjects, and he hoped that ere long his voice would be heard in 17, Bloomsbury Square. He had received an exceedingly hearty welcome from his fellow-Councillors.

Election of Officers.

The following office-bearers were then appointed:—Hon. President, Mr. John MacMillan; Hon. Vice-Presidents, Mr. Robert

Macadam and Mr. J. W. Sutherland; President, Mr. W. L. Currie; Vice-Presidents, Mr. James Moir and Mr. John Murchie; Secretary, Mr. J. P. Gilmour; Treasurer and Librarian, Mr. T. Maben; Committee, Mr. A. Fraser (Paisley), and Messrs. H. P. Arthur, A. Boyd, R. Brodie, T. Dunlop, J. H. Riddell, and Geo. Robertson.

Other Matters.

Mr. Gilmour submitted a draft syllabus of a course which Mr. Maben had been mainly the means of getting up, of eight post-graduate lectures, which it was suggested should form the chief part of the programme for the coming season. These included lectures on "The Pharmacist as Optician," "The Pharmacist as Photographic Dealer," "The Pharmacist as Food Specialist," "The Valuation of Drugs," "Serums and their Preparation," "Vaccines and their Preparation," "Practical Methods of Urine Analysis," "Pharmacy and the Inland Revenue," the lectures to be delivered by members, each specially qualified to treat his subject. The idea was well received by the meeting, and it was remitted to the Council of the Association to carry out the details, and also to arrange for other meetings to consider the question on the Federation programme, particularly Mr. Tocher's paper on "Territorial Representation."

Mr. D. S. Robertson (Rutherglen) introduced the question of parochial outdoor dispensing, and said he thought that the Local Government Board should be approached to have certain grievances remedied. This discussion was adjourned, and the meeting closed with a vote of thanks to the Chairman.

TEES-SIDE CHEMISTS' ASSOCIATION.

ANNUAL MEETING.

Thursday, October 1, 1903, at the Albany Restaurant, Middlesbrough, the President, Mr. R. R. Bainbridge, of Stockton-on-Tees, in the chair, at 9 a.m.

The new rules of the Association were read over by the Secretary, and, on the motion of Mr. J. N. Robinson, were unanimously approved and adopted.

Medicine Stamps.

A discussion was inaugurated by Mr. Brackenbury on the latest phases of the Stamp Act. He dwelt upon the great laxity of the authorities in administering the Act in the past, and expressed the opinion that, in view of recent decisions in the Courts, a good time was in store for the duly qualified chemist and druggist. He recommended that all possible assistance should be given to the authorities who were endeavouring to correctly interpret the Act as it stood.

Mr. A. Lee agreed that the Act ought to benefit chemists, but considered that the suppression of ailment-names, such as "cough mixture," "liver pills," etc., would be to the disadvantage of the public, for, if sent out unlabelled, it would have a tendency to produce mistakes, if not accidents. He opposed the disclosure of formulæ as an injustice, and thought the course the average chemist would adopt would be to stamp his own special remedies. He admitted that it was very good of the Inland Revenue authorities to make a distinction between the qualified chemist and the ordinary trader, but he emphasised the importance of the fact that even this could be evaded. A large-sized unstamped package could be opened and the contents sold loose, just as is the custom with Beecham's pills in the poorer class districts. As an example of this, he handed round the meeting a small packet of Perry's pills, made by a firm in Leeds, and said these were sold from a stamped shilling box, and each pennyworth of pills was wrapped along with a labelled empty box in a paper wrapper recommending the pills for various ailments.

Other members took part in the discussion.

Election of Officers and Members.

The President having intimated that the year of office of the Executive Committee had now expired, Mr. J. M. Robinson moved, and Mr. Hornsby seconded, that they be re-elected *en bloc.* This was carried *nem. con.*, Mr. E. Denis Owen accepting office as Secretary for Middlesbrough, in place of Mr. J. C. Thompson, resigned.

The hearty thanks of the meeting were accorded to Mr. Thompson, who had worked so hard and so well for the interests of the chemists of Tees-side.

Messrs. E. Gregory and Weatherby were admitted as members of the Association.

SHEFFIELD PHARMACEUTICAL AND CHEMICAL SOCIETY.

ANNUAL GENERAL MEETING.

Wednesday, October 8, 1903, at the Montgomery Hall, Sheffield, Mr. J. Austen (President) in the chair.

Annual Report.

The Secretary read the annual report of the Council, which stated that the number of members is 53, as compared with 49 last year; the number of associates is 14, as compared with 16. The number of associates is still declining, through lack of apprentices. The finances of the Society are in a satisfactory state. There is a balance in hand of £26 8s. 2d., as against £15 15s. 3d. last year. Although this balance was shown, the Society had actually expended more than the normal income by £2 to £3, chiefly through special meetings and delegates in connection with the P.A.T.A., etc. This, however, was more than accounted for by the balance from the ball account. Seven Council meetings had been held during the year, five general and four special meetings. It was decided to ask the British Pharmaceutical Conference to visit Sheffield in 1904, and the invitation was accepted. The Society had had a discussion on the action taken by the Inland Revenue authorities in regard to the stamping of medicines, and decided not to take any further steps at present. Mr. Norman S. Goodyer was awarded the Newsholme Herbarium Prize, and he had since taken the silver medal of the Pharmaceutical Society.

The Chairman thought the report was a very satisfactory record of a year's work, and congratulated the Society upon it.

Mr. C. F. Carr moved that the report and balance-sheet be adopted. The report, though satisfactory, still left a good deal to be desired. They could not get over the fact that the number of associates was decreasing. During the coming year they would want a good deal of money in connection with the Conference, but next year, when they would have no such special object in view, he thought they might consider the advisability of reducing the subscription.

Mr. J. Gilbert Jackson seconded the resolution, which was supported by Mr. Parkes, and carried.

Election of Officers.

As the result of the ballot for the Council, all the old members were re-elected. They are Messrs. H. Antcliffe, J. Austen, C. F. Carr, P. Carr, R. D. Douglas, J. F. Eardley, A. R. Fox, J. Gilbert Jackson, G. T. W. Newsholme, J. B. Pater, G. Squire, and J. W. J. Turner.

The P.J. Formulary.

Discussion took place with regard to the formulary and private recipes now being prepared by the Pharmaceutical Society.

The Chairman said the parent Society had asked for formulæ, and he submitted to the meeting the question of sending, either privately or from the Society, any formulæ that members had to add.

It was decided to send up the formula of Jessop's Drops, under both that name and the name of American Colic Drops, by which the compound is also known.

Annual Dinner.

The annual dinner of the Society will be held at the Royal Victoria Hotel on Thursday, October 29. The chief guest will be Mr. S. R. Atkins, of Salisbury (President of the Pharmaceutical Society).

CHEMISTS' ASSISTANTS' ASSOCIATION.

The programme of the C.A.A. for the half-session, October to December, 1903, is as follows:—

October 8.—Inaugural Address: The President.
,, 15.—Musical and Social Evening: 73, Newman Street, W.
,, 22.—Paper: "The Pharmacy and Materia Medica of the 17th Century." S. C. G. Tweedy.
,, 29.—Visit to the London Hospital Dispensary.
November 5.—Paper: R. A. Robinson, jun.
,, 12.—Annual Reunion: Frascati Restaurant.
,, 19.—Paper: "Systematic Pharmaceutical Education: A Suggestion." C. E. Franklin Vallet.
,, 26.—Paper: "An Explanation of Trichromatic Photography, with Examples." F. Goldby.
December 3.—Cinderella, at Portman Rooms.
,, 10.—Paper: "Advance in Electro-Chemistry." Dr. F. Mollwo-Perkin.
,, 17.—Musical and Social Evening: 73, Newman Street, W.

PRESTON GROCERS' ASSOCIATION.

ORDINARY MEETING.

Monday, October 5, 1903, at the White Horse Restaurant, Preston.

Mr. E. Kay, the ex-President, drew the attention of members to a report of the Preston Chemists' Association meeting, held last month, in the course of which Mr. Williamson, the Hon. Secretary of the Chemists' Association, was reported to have said that the suggestion had been made that the Chemists Association and the Grocers' Association should meet and discuss the price question. He desired to know whether the Grocers' Association had really approached the chemists to that effect?

The Chairman and Secretary said that they had not done so, and had no intention of so doing.

Mr. Kay, proceeding, said the reason he brought the matter forward was because the trade reports of the meeting gave no indication as to who really had suggested the proposed conference. He wished to take that opportunity of making it clearly understood that the Preston Grocers' Association did not request the chemists to meet them on the question of fixing prices. Ever since the formation of the Grocers' Association he, as they knew, had taken a very strong position that they should not fix the selling prices of goods. They had seen so many associations failing over that matter, that in Preston they determined to leave it alone. At the same time, he had discovered from whom the suggestion for the proposed conference emanated—viz., the P.A.T.A., of which Mr. Glyn-Jones was the Secretary. Surely the chemists might have had the goodness to acknowledge that the proposal came from their own ranks. Personally, however, he was in sympathy with the P.A.T.A., but the plan as foreshadowed by the chemists would make the price question purely local, which was a very wide difference indeed. He did not wish it to appear that the Preston grocers were endeavouring to raise the price of proprietary articles.

Mr. Beardwood agreed that, according to the trade reports, it was made to appear that the grocers had asked the chemists to confer with them. He wished to make it clear that they had no need to ask the chemists to confer. The taste of one of the speakers at the chemists' meeting, Mr. Arkle, was equal to his logic, and his logic was very bad indeed. Mr. Arkle pointed out that grocers had no right to sell chemists' articles, for the simple reason chemists were registered, and had to undergo a special training; but he would like to tell Mr. Arkle that if he, as a chemist, were to confine himself to dealing in those goods only for which a special training was necessary, he would have fewer goods to deal in.

BRIGHTON ASSOCIATION OF PHARMACY.

ORDINARY MEETING.

Tuesday, October 6, 1903, at the residence of Mr. W. H. Gibson, 122, King's Road, Brighton, Mr. Gibson in the chair.

Divisional Secretary.

The first item was the selection of a Divisional Secretary of the Pharmaceutical Society.

Mr. Councillor Yates, Joint Secretary of the Association, read a letter from Mr. J. R. Gwatkin, the retiring Divisional Secretary, who said that, owing to his time being occupied so fully with other matters, he felt that he was unable to stand for re-election.

Mr. Councillor Yates, in the course of a few remarks, spoke of Mr. Gwatkin's good work in previous years, and expressed the opinion that if an Assistant Secretary could be appointed to assist Mr. Gwatkin in the work, he (Mr. Gwatkin) could probably be persuaded to continue if elected. It having been ascertained in the meantime that Mr. Gwatkin was agreeable, it was resolved that Mr. Gwatkin be recommended for Divisional Secretary. This was proposed by Mr. Blamey, seconded by Mr. Gibson, and carried unanimously.

Mr. Franklyn proposed, and Mr. W. W. Savage seconded, "That Mr. Blamey be recommended as Sub-Secretary, subject to the Pharmaceutical Society's sanction."

The B.P.C.

The arrangements for the proposed visit of the Pharmaceutical Conference to Brighton in 1905 were discussed, and a programme was decided upon provisionally.

The meeting terminated at a late hour with a hearty vote of thanks to the Chairman.

The next meeting was fixed for November 6, at the same place and time.

HUDDERSFIELD CHEMISTS' ASSOCIATION.

ANNUAL MEETING.

Wednesday, October 7, 1903, Mr. R. C. Walshaw in the chair.

Annual Report.

The annual report was read by the Secretary, stating that during the term seven meetings were held, and several interesting subjects were under discussion. The early part of the session saw the realisation of a scheme for the closer union of the Association and the West Riding Federation. The Association was honoured by the election of its President to the chair of the West Riding Federation. The attendances at the monthly meetings could not be considered all that could be desired, but most of the members were busy pharmacists, many having interests outside the sphere of their calling, which necessarily occupied much of their leisure time. It was stated that the membership of the Association now numbered thirty.

The Hon Secretary also presented the annual balance-sheet, which showed a balance to the good of £1 3s. 10½d.

The financial statement was endorsed by the meeting, on the motion of Mr. SYKES, seconded by Mr. BROADBENT.

Place and Time of Meeting.

A formal motion was adopted confirming the change of headquarters to the Queen Hotel, and it was resolved that the monthly meetings should be held on each second Tuesday, at 8.30 p.m.

Other Matters.

The meeting decided to defer the election of officers for the next year until the November meeting of the Association.

The President, Mr. Broadbent, and Mr. Stephens were appointed delegates to the next meeting of the West Riding Federation of Chemists' Associations.

Mr. Broadhead wrote with regard to the need of a thorough overhauling of the rules of the West Riding Federation, but in a discussion it was opined that the matter of rules was one which might well be left to the Federation members, including the delegates from Huddersfield.

A suggestion was supported that the President and Secretary should send out a pressing agenda on the occasion of the next meeting, with a view to a larger attendance.

LEGAL INTELLIGENCE.

Pharmacy Act, 1868.

Prosecution under Section 15 at Salford.

Pharmaceutical Society v. Elias Cohen.

On Friday, October 2, 1903, at the Salford County Court, before Mr. A. K. Smith, Deputy Registrar, Elias Cohen, an unqualified assistant in the employment of Messrs. J. L. Smith, Limited, was summoned for a breach of the Pharmacy Act, by selling a scheduled poison, on July 17 last, viz., morphine, contained in a bottle of "Kay's Compound Essence of Linseed."

The defendant was at the time of the sale engaged at one of Messrs. Smith's branch shops, situate at 89, Monmouth Street, Trafford Road, Salford.

Mr. Robson (Holt, Risque, and Robson), who appeared for the Pharmaceutical Society of Great Britain, said the defendant had made an admission of the claim, and offered payment by instalments, which the Society declined to accept. The claim being one for a penalty of £5, under Section 15 of the Pharmacy Act, 1868, the amount was recoverable by the ordinary process of the Court, except that it was one of the exceptions from the operation of Section 4 of the Debtors Act (abolishing imprisonment for debts in certain cases), and he intended to apply for an order of committal if the amount was not paid. He (Mr. Robson), therefore, asked for an order for payment in fourteen days, with an endorsement by the Registrar giving notice that unless the order be obeyed defendant would be held to have committed contempt of court, and be liable to imprisonment. In the event of the fine not being paid, application would be made for an order of attachment. Mr. Robson quoted the rules empowering this to be done, and the Registrar granted the order accordingly.

Prosecutions under Section 15 at Pontefract.

Pharmaceutical Society v. Blanshard; Same v. Lamacroft.

On Wednesday, October 7, 1903, at the Pontefract County Court, before his Honour Judge Raikes, these cases were heard, two penalties of £5 each being sought for in the case of each defendant under Section 15 of the Pharmacy Act, 1868, for the sale of a poison—*i.e.*, chlorodyne—the defendants not being registered under the Act.

Mr. Stephen Peckover, of Leeds, appeared for the Pharmaceutical Society, and the defendants were not represented by a solicitor. His Honour had the assistance of a jury.

Mr. Peckover, at the outset, applied for the cases to be taken together, if the defendants were willing, pointing out that the claim for penalties referred to the same transactions in each case, Blanshard being the master and Lamacroft the assistant; but his Honour held that he had no power to take the cases together, as the section spoke of a person, and not persons.

Mr. Peckover, in opening the case against Henry Clough Blanshard, said he was the owner and occupier of the shop, 105, Carlton Street, Castleford, where he carried on business under the title of Blanshard's Drug Stores, and the action was for keeping open shop for the retailing, dispensing, or compounding of poisons. The defendant admitted that the article purchased, Teesdale's Chlorodyne, was a poison within the meaning of the Act. Purchases of this article were made on June 29 and July 4 by Arthur Foulds, an agent of the Pharmaceutical Society, and the sales were made by the defendant Lamacroft. On the first occasion a bottle of castor oil which was purchased had Blanshard's label on, but the chlorodyne purchased at the same time had no label on. On the second occasion the chlorodyne similarly was not labelled with the defendant Blanshard's label, but it was wrapped in one of his wrappers. He thought the jury would have no manner of doubt that the sales were made by Lamacroft.

Mr. Harry Moon produced the authority of the Registrar of the Pharmaceutical Society for these proceedings, and deposed to the instructions having been given to Mr. Foulds to visit the defendant Blanshard's shop.

Cross-examined by Blanshard, Mr. Moon said it was neither customary nor necessary to give any warning to a person that poisons had been purchased at his shop, and particularly would nothing of the sort have been considered necessary in this case, because Blanshard was an old offender, who had paid two penalties previously. His shop had been visited not on account of any spite of a neighbour, but because it was customary to visit any person who had been fined about three months afterwards, to see whether he was repeating the offence.

The Defendant produced a stamped medicine licence, but his Honour pointed out that the date of the licence was subsequent to the date of the alleged offence, and Mr. Peckover observed that whatever the date might be, it did not help the defendant in the least.

The Defendant, however, still held that it was an open question whether a medicine licence did not cover the sale of chlorodyne; and he suggested that the object of the Pharmaceutical Society was to get as much money as it could out of people.

In answer to Mr. Peckover, Mr. Moon said the simple object of the Society was to prevent persons like Blanshard from selling poisons when the Act prescribed that they should not do so. Anybody who was willing to pay 5s. for it to the Excise authorities, could have a stamped medicine licence, and it did not confer the least right to sell poisons, whether contained in a proprietary article or not.

Mr. Arthur Foulds deposed to having made the purchases in question, and Mr. James Warnes, clerk in the office of Messrs. Peckover and Scriven, solicitors, of Leeds, proved certain correspondence which had passed.

The defendant Blanshard gave evidence on his own behalf, and said that he had been rather careless before the previous penalties were recovered from him in not removing from the shop some medicines containing poisons which had been taken over from the chemist from whom he had bought the business, but after that he gave the strictest instructions to Lamacroft that everything of the sort was to be cleared out of the shop, and he understood that this had been done, and had looked round the shop himself and found nothing of the sort left in it. He warned Lamacroft that if he again let him in for penalties he would have to pay them himself. If Lamacroft had since sold anything containing poison it could not be out of his (Blanshard's) stock, and he thought that it was very hard that the Society should endeavour to make him responsible for any such act. His information from Lamacroft, however, was that he had not sold anything of the kind.

W. H. Lamacroft corroborated the statement made by Blanshard, and said that to the best of his knowledge he had not sold any chlorodyne to Mr. Foulds.

In answer to Mr. Peckover, Lamacroft said he had no recollection of selling the chlorodyne, but he would not go so far as to swear that he had not done so, and he would not suggest that Mr. Foulds was perpetrating a fraud.

Addressing the jury, Blanshard then urged that it was necessary for the Pharmaceutical Society to prove that he had knowledge of the sale of poisons, and had wilfully participated in the sale. It was possible that Lamacroft had sold some from a supply kept in the house for his private use, and if that had happened it was not right that he (Blanshard) should be penalised for that.

Mr. Peckover said the jury would no doubt admire Lamacroft for refusing to swear that he had not sold the chlorodyne, when he knew that if he did so he would be swearing that which was not true.

His Honour informed the jury that the only question of fact for them to consider was whether there was this sale of poisons at the defendant's shop. He pointed out the necessity of poisons being sold only by qualified persons, and stated that in his opinion the Pharmaceutical Society had acted quite properly in bringing the actions in the performance of the duty imposed on them by Statute.

The Foreman immediately replied that they were perfectly satisfied that the sale occurred.

His Honour thereupon made an order for two penalties of £5 each against Blanshard. Lamacroft having intimated that he would abide by the decision of the jury in the other case, similar orders were made against him, His Honour stating that it was not in his power to mitigate penalties in any way.

Pharmacy Act (Ireland).

Prosecution at Ballinasloe.

Saturday, October 3, 1903, at the weekly Petty Sessions at Ballinasloe, before Messrs. O'Shaughnessy (chairman), J. A. Huggins, J. Hynes, Colonel Thornhill, and A. C. Newell, R.M. At the former hearing a few weeks ago the case was dismissed without prejudice, the magistrates holding that Cooper's sheep-dip might be classified as a "patent medicine." Mr. L. Conroy, J.P., chairman of the Urban Council, and Mr. T. B. Hibbitts, D.C., Kilconnell, were the defendants in both cases. The charges were that they (the defendants), not being duly authorised under the Act, did sell and expose for sale poisons contained in Cooper's sheep-dip, in the case against Mr. Conroy, and Mallin's sheep-dip in the case against Mr. Hibbitts. Professor Tichborne, of Dublin, proved the analysis of the packages, each of which contained as much white arsenic as would poison 800 adults, allowing three grains for each.

On the application of the Crown Solicitor, the summons in each case was amended by striking out certain words, so that the defendants were prosecuted for keeping open for sale, and the Bench imposed fines of £5.

Sale of Food and Drugs Acts.

Sweet Nitre.

On Monday, October 5, 1903, at Rotherham, Henry Geo. Wimbush, of Dinnington, was summoned for selling sweet nitre which was not up to the B.P. standard of strength. The sample only contained three-fifths of the minimum proportion of ethyl nitrite, and defendant stated that this was due to evaporation. A fine of 10s. and costs was imposed.

On Tuesday, October 6, 1903, at Nottingham, John B. Williamson, of 149, Denman Street, Nottingham, was summoned for selling sweet spirit of nitre which was not up to the B.P. standard of strength. The sample was certified to be deficient in ethyl nitrite to the extent of 51 per cent. The defence was that the deficiency was due to evaporation, and the Bench dismissed the case on payment of 6s. costs.

Revenue Act, 1889.

Prosecution at Dumfries.

On Monday, October 5, 1903, at the Justice of Peace Court, Dumfries, Frank Philip Moore, chemist, English Street, Dumfries, was charged with having sold a gill of methylated spirit to a street porter on Sunday, September 20. The prosecution was raised at the instance of the Inland Revenue, and two constables and the sanitary inspector deposed that they saw the man leaving the shop about ten or eleven o'clock with a bottle which had no label, but which was found to contain methylated spirit. The prosecutor said that druggists were allowed to sell methylated spirit only for use in arts or manufactures, but the police knew a good many people who drank it.

Accused's agent stated that on the Saturday evening the man to whom the spirit was sold went to the shop and left a bottle with threepence for the spirit, and said he would call for it later or the next morning. He therefore contended that the sale was completed on Saturday, and that there was no offence in handing out the bottle on Sunday.

The Prosecutor replied that according to that argument the Act against Sunday trade in excisable liquors could be easily evaded. A person would only require to leave his money on a Saturday to return next day for the drink.

The Court held the charge proved, and imposed a fine of £10, or two months' imprisonment.

Accused's agent thereupon asked to be allowed to state a case for the Court of Session, and it was agreed to delay execution of sentence for seven days.

LONDON GAZETTE NOTICES.

PARTNERSHIP DISSOLVED.

Frederick William Lewitt and Paul de Cressé Potter, medical practitioners, Leicester. Debts will be received and paid by F. W. Lewitt.

RECEIVING ORDER.

William Reader, trading as a druggist, Forest Hall, Northumberland.

BANKRUPTCY INTELLIGENCE.

Re **G. C. Robinson,** Chemist and Druggist, Hull.

The Official Receiver of the Hull Bankruptcy Court, in a report to the creditors, states that on October 12 he will pay a first dividend of 1s. 8½d. in the pound.

Re **R. J. Francis,** described as a Chemist and Druggist, Workington.

In connection with this failure, the Official Receiver of the Carlisle Bankruptcy Court reports that the estate has been realised, and the sum in hand will only allow of the payment of a first and final dividend of 3¾d. in the pound.

Re **William Reader,** described as a Druggist, Forest Hall, Newcastle-on-Tyne.

A petition in bankruptcy was filed in the Newcastle Court by the above on October 2, and the usual receiving order was made.

Re **Annie E. Coxon,** described as a Chemist, Chester-le-Street.

On Tuesday, October 6, 1903, at Durham Bankruptcy Court, the public examination of Mrs. Annie Elizabeth Coxon, Chester-le-Street, was formally closed.

Re **G. Valentine C. Last,** Pharmaceutical Chemist, Liverpool.

On Thursday, October 1, 1903, at the Liverpool Bankruptcy Court, before Mr. Registrar Cooper, the debtor, recently carrying on business at 80, Holt Road, Liverpool, came up for public examination. Mr. F. A. Greer appeared for the petitioning creditor, and Mr. Edwards for the bankrupt, who filed a statement of affairs showing liabilities of £471 14s. 11d. and assets of £40. There were two creditors only, one being Mr. Priest, who, a few months ago, recovered a verdict and damages against the bankrupt, and the other being the bankrupt's own solicitor, for costs in connection with the same action.

The bankrupt was examined by the Official Receiver, and said that prior to 1897 he had been a chemist's assistant, but in that year he bought an interest in the business at Holt Road, and in the following year bought out his partner. This was effected by money borrowed from the bankrupt's mother to the extent of about £900, of which about £700 had been paid off from time to time out of the profits of the business, which was in itself a paying one. In March, 1902, the bankrupt sold an india-rubber hot water bottle to Mr. Priest, but when this was used by Mrs. Priest it burst, and the lady was badly injured. The consequence was an action for damages, which was tried before Mr. Justice Walton, who held that the sale of the bottle implied a guarantee that it was fit to be used for the purpose for which it was sold. Judgment was given against the bankrupt for £40 and costs. In July, 1902, the bankrupt said he sold the business to his mother for £395, which was then owing on a promissory note. His reason for disposing of the business was that he wished to read for the medical profession. Another reason was that his mother at that time insisted that she should have the money due to her under the promisory note. This was in view of the action which was then threatened by Mr. Priest, who claimed £800 damages. The bankrupt since then had been employed by his mother at £2 a week, but had no interest in the profits of the business.

The bankrupt was examined by Mr. Greer at considerable length, more especially as to the sale to his mother. He denied that the object of the transaction was that his mother should be paid, and that the plaintiff in the action should not be paid, and said the real reasons were those he had given.—The examination was adjourned for a fortnight.

POISONING CASES AND INQUESTS.

The deaths reported during the seven days ended Wednesday, October 7, 1903, as due to poisoning, numbered eighteen :—

Poison.	Accident.	Suicide.
Arsenic	—	1
Carbolic Acid	1	5
Chloral Hydrate	1	—
Chloroform	2	—
Hydrochloric Acid	—	1
Laudanum	3	—
Nitrous Oxide	1	—
Oxalic Acid	1	1
Kind not stated	—	1
Total	9	9

Arsenic.—A leather worker at Worcester committed suicide it is supposed by taking arsenic.

Carbolic Acid.—A storekeeper at Bonnybridge, N.B., a man at South Shields, a labourer at Liverpool, and a domestic servant at Southport, committed suicide by taking carbolic acid, as did a gentleman from Heaton Moor in a Midland railway train. Mr. E. L. Henry, dentist, of Lewisham, accidentally took a fatal dose of carbolic acid.

Chloral Hydrate.—A man at Newry died from an accidenta overdose of chloral hydrate.

Chloroform.—Two men died under chloroform in the Manchester Infirmary and the North Stafford Infirmary respectively.

Hydrochloric Acid.—A street hawker in the City of London committed suicide by taking hydrochloric acid. The acid had been sold by a young female assistant to an oil and colourman in a wine bottle. The coroner at the inquest, Dr. F. J. Waldo, deplored, in strong language, the lack of restrictions on the sale of such acids, and stated that the coroners and the Pharmaceutical Society were both anxious that such substances should be included in the Schedule of Poisons. In spite of the remarks of one juror, who was a grocer by trade, and considered that an oilman was as qualified to sell poisons as a chemist, the jury added to their verdict a rider that stricter legislation was urgently needed in the control of the sale of such poisons as were not already in Schedule A of the Pharmacy Act, 1868.

Laudanum.—Three women died from overdoses of laudanum, at Liverpool, Sparkbrook, and Basford respectively.

Nitrous Oxide.—A child died under nitrous oxide in the Victoria Hospital for children, Chelsea.

Oxalic Acid.—A waiter at Ilfracombe died through taking oxalic acid in mistake for Epsom salt. A girl at Leeds committed suicide with the acid.

Kind not stated.—A woman at Barnsley died from the effects of a poison, the nature of which was not stated.

Inquest at Preston.—An inquest was held at Preston on Monday, October 5, on the body of a man who had died suddenly, some time after taking Epsom salt. It was suggested that possibly the salt was the cause of death, and the inquest was adjourned in order that the drug, which had been bought from a grocer, might be analysed.

Non-fatal Cases.—Reports are to hand of ill-effects from taking poisonous fungi, laudanum, and oxalic acid.

PERSONAL VIEWS ON CURRENT TOPICS.

The Practical Portion of the Minor Examination—(I).

BY W. LYON.

As It Was.

It is more than a decade now since I passed through the ordeal, but even yet the recollection of a part of it inclines me to indulge in a hearty laugh. I was the last of the candidates for the day, and had been sitting on the "funking form" for over an hour waiting for my last subject—chemistry. The candidates, with one exception, had disappeared, and most of the examiners had followed their example, when I was requested by the genial old chairman to step into the other room and have my knowledge of chemistry, practical and theoretical, weighed in the balances—there were not any there—but this by the way. The examiner "began the fray" by showing me two or three familiar salts, asking me to name them and state how they were prepared, then handed me a small piece of a metallic looking substance, and asked what it was. I couldn't identify it with certainty, and told him so. He then directed me to dissolve some of it in strong hydrochloric acid and apply some tests. I dissolved a small piece as directed, and on adding a little water to dilute it a whitish precipitate appeared. The examiner asked what was indicated by the precipitate, and, like a canny Scot, I replied that it might be antimony. He then asked the names of the principal salts of antimony and how one or two of them were prepared, and then told me that he was finished with me. Thus ended my examination in theoretical and practical chemistry, for the brevity of which I was duly thankful, for the cravings of the stomach for nourishment had not been calmed by the one small biscuit which the chairman kindly gave me any more than by hearing him, in the kindest possible manner, sentence half a dozen candidates to another three months' grind. It is not to be supposed that in certifying that my knowledge of chemistry was passable within the meaning of the regulations, and that it would be safe to let me pharmaceutically loose upon the public, the examiner felt any qualms of conscience; he was merely curtailing somewhat, owing to the other examiners having "gone before," the form of examination then in vogue.

As It Is.

Since then a considerable change has been made in the examination. Instead of twenty or thirty minutes for chemistry and one hour for dispensing, the candidate is now given three hours in practical chemistry and a similar period in dispensing and practical pharmacy work. Undoubtedly this is a great improvement, and, compared with the previous form of examination, is a distinct advance towards ensuring that those who now obtain the certificate have had a good training and education in the pharmaceutical art. The longer period now devoted to practical work enables the examination to be extended to important parts of the subjects, which under the old system were not touched. For instance, the hour given to practical pharmacy work was devoted entirely to dispensing, thus leaving the candidate's knowledge of practical pharmacy to be estimated by oral examination. At present the Edinburgh examination paper in dispensing and practical pharmacy consists of four or five items, usually the latter, which are supposed to be representative of these two subjects, but the great majority of these items must be described as dispensing pure and simple. The examination in practical chemistry usually consists of all or some of the following, viz.:—An analysis of one salt or a mixture of two salts, a volumetric estimation, which often involves two estimations, and a specific gravity determination, the number of items given depending upon the estimated time required for each. The Minor Examination, though, in its narrow legal sense, but a necessary preliminary to obtaining the privilege of dispensing and retailing scheduled poisons and using the title chemist and druggist, is now being made, and rightly so, a real test of a person's knowledge of the pharmaceutical art and his fitness to carry on public practice of it. This being so, it is unnecessary to argue, for surely it will be admitted as a logical necessity that the candidate ought to have a thorough practical knowledge of the Pharmacopœia, for it is the basis of the public practice of pharmacy.

Is Its Object Fulfilled?

Now let us consider whether the Minor Examination as at present constituted fulfils its intention, or whether it is contributory to the fact that practical pharmacy, in so far as the preparation of galenicals is concerned, is not progressing as it might reasonably be expected to do. Upon what grounds can we explain the large purchases of galenicals, especially of those which are standardised, or are somewhat difficult to make, from wholesale druggists? If it be due to incompetency, and is an educational and not an economic question, then we may well doubt the adequacy of the practical part of the Minor Examination. Of course, it may be argued that it is purely a matter of price and convenience, but whilst this may be true in some instances, it is not alone a sufficient explanation so far as some of the galenicals are concerned. It was stated in the Journal the other week, on the authority of a wholesale druggist, that the sale of tincture of opium had decreased to a considerable extent. Some two years after the issue of the 1898 Pharmacopœia, I inquired at a local wholesale house as to the effect of standardisation upon their overturn in tincture of opium, and was informed that in the course of the two years the overturn had been almost doubled. This may not be an average case, but judging by the information obtained elsewhere, it is not by any means an exceptional case. This increased wholesale overturn cannot be accounted for solely on the ground of increased consumption. Neither can it be satisfactorily explained on the ground of price, for, with a few exceptions, galenicals can be prepared by the pharmacist, provided he is possessed of the necessary ability and utensils, at a lower cost than that quoted by wholesale manufacturers.

A Panacea Wanted.

There does not appear to be much doubt that the main reason for this falling off in the status of the pharmacist—to become a mere middleman is undoubtedly a step below the position he ought to occupy—is a lack of practical knowledge of the pharmaceutical art, combined, perhaps, with an inclination to take things easy. Now, it may be affirmed that the average candidate only goes as far in his practical studies as he thinks will enable him to make the necessary marks for a pass, and that as a consequence of this imperfect knowledge of practical pharmacy he, when he does start practice on his own account, feeling his practical knowledge insufficient for the preparation of galenicals except the simplest, begins by buying some, but the habit increases, and "the some" gradually become "the whole." How is pharmacy going to keep pace with the advances of medical science if its followers are to act as mere "hand-overs"? Improvements in galenicals and pharmaceutical processes can only come from those having an intimate and practical acquaintance with these, and when these improvements are made by wholesale firms, they are usually kept secret and utilised for their own benefit, instead of being given publicly for the benefit of pharmacy and the healing art. Of course, all this has been emphasised over and over again, and the usual curriculum remedy prescribed. How much longer we will have to wait before obtaining this panacea I will not attempt to calculate, but since, to all appearance, it will be some considerable time, it may be profitable to pharmacy to consider whether by some alterations and extensions of the practical portion of the examination a partial remedy can be found for this drifting away of pharmacists from the essential of professional success—practical knowledge.

SELECT VETERINARY FORMULÆ.

BY A VETERINARY SURGEON.

The medical and surgical treatment of animals by modern practitioners is so much on the lines adopted by the more advanced practitioners of human medicine that a revision of formulæ will be found desirable if pharmacists are to keep up to date and obtain that share of business in animal medicines which should justly fall to them, but has hitherto been the monopoly of a few specialists whose goods are not exclusively handled by chemists, but to be seen in the saddler's and the grocer's window.

Abortion.

Abortion in cattle and sheep is frequently of an infectious character, and the modern treatment consists in uterine and vaginal irrigation and daily sponging over of the external genitals, including the tail.

For Injection.

℞ Hyd. perchlor.	1 part
Sodii chlor.	40 parts
Aqua dest.	4,000 parts

or,

℞ Hyd. biniodide	1 part
Potass. iodid.	1 part
Aq. dest.	1,000 parts

Animals which have been in contact with those which have aborted are to be dressed over genitals daily with the following:—

Ferri sulph.	5 parts
Aq.	95 parts

Abscess.

Fomentation and poultices where applicable, or use the following:—

Lin. ammon.	4 parts
Tinct. iodi.	1 part

Indolent abscesses are made to "point" ready for the lancet by lin. tereb. co. or lin. camph. co.

Abscess cavities are induced to fill up by the injection into them of

Iodum	5 parts
Pot. iodid.	5 parts
S. V. M.	10 parts
Aqua dest.	60 parts

Dogs showing acute pain during pus formation may receive an application of ext. balladonnæ, but care must be taken to prevent licking of the part.

Acari, Mites, Mange, or Scab.

The minute parasites which give rise to mange in animals, and receive the special appellation in connection with sheep of "scab," form a group of great importance to the agriculturist, and chemists should be prepared to advise remedies suitable for the various species of animals, no one substance being adapted to all. Cost must be taken into consideration, too, in dealing with large animals having a good deal of "coat." For horses and cattle may be prescribed:—

Flor. sulph.	1 part
Paraffin	1 part
Ol. lini vel. sesame	9 parts

or,

Hyd. perchlor.	1 part
Spt. vini meth.	5 parts
Tobacco juice	994 parts

Either of these dressings will answer both for mange and lice, but for the latter a sufficiently heavy dressing of oil alone will destroy them, as it fills up the breathing apparatus and suffocates them. The thick and woolly coverings of many horned beasts, and of hill ponies running wild during the winter, makes it difficult to get at such parasites as burrow beneath the surface skin, unless washed with a strong alkaline fluid or saturated with oily preparations. The large proportion of oil in the fleece of sheep is, of course, the reason why dips are preferred which contain either a large proportion of soft soap or an excess of alkali—more than enough to produce the arseniate of soda which is most fatal to the sheep acarus, mange mite or "scab" insect.

Sheep-dips are too well known to need formulæ here, and the price at which the most popular and effective ones are sold make it useless to compete unless on a large scale.

The mange mite of dogs may be destroyed by

Phenyl	1 part
Aqua	60 parts

A safe and effectual preparation may be made of

Hyd. perchlor.	1 part
Potass. sulphurata	30 parts
Aqua	870 parts

Little red-skinned or white dogs of the Maltese type should have the affected patches dressed with liniment of camphor, or be bathed with the potassa sulphurata solution without the mercuric chloride.

If an ointment is preferred, an elegant preparation may be dispensed by using

Sulph. precip.	1 part
Ol. rosæ	2 parts
Adeps	6 parts

"Nosed" with ol. eucalyptus, or other essential oil.

For cats, the last-named preparation may be recommended, but on no account phenyl or carbolic preparations, as they are quite easily killed by absorption.

Actinomycosis.

Tumours of the ray fungus are found among all the animals of the farm, and most commonly affect cattle with what is known as "wooden tongue." Iodine is practically a specific for it, and is employed in the form of tincture, painted on the sores or as a mouth wash composed of

Potass. iodid.	1 part
Aq.	4 parts

And internally in doses of from two to six drachms for two to six weeks.

A cheaper form to prescribe is that of

Hyd. biniodide	gr. v.
Pot. iod.	gr. x.
Aq.	ʒx. ft.

Haustus, bis die.

Sows generally show it in the form of tumours on the udder. They are too frequently supposed to be tuberculous and not treated. The measures recommended above, with dose modified to weight of the animal, may be recommended with confidence. Liberal diet is advised in all cases.

REPORT OF THE INTERNATIONAL COMMITTEE ON ATOMIC WEIGHTS.*

In the year 1900, an International Committee on atomic weights was organised, composed of more than fifty representatives from chemical and other societies. Its conferences were necessarily conducted by correspondence, and the delays and difficulties of the work proved to be both serious and annoying. Accordingly, the Committee, by vote, designated a smaller body of three representatives, and the latter now has the honour to report its recommendations.

On the fundamental question of standards, definite and formal action seems to be impracticable. By the original committee of the German Chemical Society, the oxygen standard was adopted, but that proposal, whilst receiving strong support, also met with serious opposition. In fact, opinion as expressed by individual voices seems to be somewhat evenly divided upon this question, and around it there has already grown up a controversial literature of formidable proportions. To force the adoption of either standard, oxygen, or hydrogen, appears therefore to be impossible, and for some time to come both are likely to be employed. Between them, experience must be the final arbiter. That standard which best serves to co-ordinate chemical and physical knowledge will ultimately be chosen, and the other will gradually fall into disuse. Meanwhile it is important that the most probable values for the several atomic weights should be indicated, and that every table of them should be consistent within itself. Such a table has been prepared by our distinguished predecessors and its revision, as knowledge advances, seems to be our proper function.

In order that our work may be of the most general service, we have prepared a table in which both standards of atomic weight are represented. In most of its details it is identical with the table which was reported by the previous committee at the beginning of the year 1902. Some changes, however, have, in our judgment, become necessary, and these may be briefly indicated as follows:—

Antimony.—In the former reports of the committee the value derived by Cooke from analyses of the bromide, Sb=120, was adopted. This, however, ignores the work of Cooke and of Schneider upon antimony trisulphide, and the still more recent determinations made by Friend and Smith. The true number being therefore in doubt, we recommend the use of an average value, and put Sb=120·2 (O=16).

Germanium.—The number 72·5 is more nearly in accord with Winkler's determinations than the former number 72.

Hydrogen.—In the column which represents the oxygen standard, hydrogen has heretofore been assigned the value 1·01. The number 1·008 is, however, much more exact, and the error in 1·01 is too large to be perpetuated. Each figure should be given to the nearest *significant* decimal.

Lanthanum.—During 1902 two new determinations of the atomic weight of lanthanum were published. According to Jones, La=138·77. Brauner and Pavlícek found La=139·04. Both investigations were conducted with great skill and care, and each one seems to have some points of advantage over the other. The average, La=138·9, appears to be the safest value to adopt. These data naturally influence our judgment in the case of cerium, and we retain Brauner's number, Ce=140, rather than adopt the lower estimates made by other observers.

Mercury.—Taking into account all the determinations which have appeared, and giving great weight to the most recent measurements by Hardin, we regard the value Hg=200 as best warranted by the existing evidence.

Palladium.—The atomic weight of this metal is in doubt. The best determinations give values ranging from 106 to 107. The mean between them, Pd=106·5, has been provisionally adopted.

Radium.—This element appears in the table for the first time. Madame Curie's determination of the atomic weight, Ra=225, is probably not far from the truth.

Selenium.—Judging from the work of Lenher and the very recent determinations by Jul. Meyer, the former value, Se=79·1, is probably too low. In order to give due weight to the newer measurements, we write Se=79·2.

Tin.—The determinations by Bongartz and Classen, which seem to be the best, make Sn=119. The former value, 118·5, is almost certainly too low.

Uranium.—According to the very recent investigation by Richards and Merigold, the atomic weight of uranium is 238·5.

Zirconium.—The figure Zr=90·6 is apparently the most probable.

In thus assuming the duties assigned to us by the larger International Committee, we act upon the conviction that the purpose of our appointment is to secure the promptness and efficiency which is only possible with a comparatively small working body. In order to carry out this purpose, we must depend upon the co-operation and assistance of our colleagues. We therefore beg that they, and also all other chemists who are interested in researches upon atomic weights, will aid us with their criticisms and advice. We especially ask that publications upon the subject shall be sent to us, in triplicate if possible, so that no matter of importance may be overlooked. Without support of this kind our work cannot be made fully effective.

The complete table of atomic weights, with foregoing changes incorporated, follows.

F. W. Clarke,
T. E. Thorpe, } *Committee.*
Karl Seubert,

International Atomic Weights.

		O=16.	H=1.
Aluminium	Al	27·1	26·9
Antimony	Sb	120·2	119·3
Argon	A	39·9	39·6
Arsenic	As	75·0	74·4
Barium	Ba	137·4	136·4
Bismuth	Bi	208·5	206·9
Boron	B	11	10·9
Bromine	Br	79·96	79·36
Cadmium	Cd	112·4	111·6
Cæsium	Cs	133	132
Calcium	Ca	40·1	39·8
Carbon	C	12·00	11·91
Cerium	Ce	140	139
Chlorine	Cl	35·45	35·18
Chromium	Cr	52·1	51·7
Cobalt	Co	59·0	58·56
Columbium (Niobium)	Cb	94	93·3
Copper	Cu	63·6	63·1
Erbium	E	166	164·8
Fluorine	F	19	18·9
Gadolinium	Gd	156	155
Gallium	Ga	70	69·5
Germanium	Ge	72·5	71·9
Glucinum (Beryllium)	Gl	9·1	9·03
Gold	Au	197·2	195·7
Helium	He	4	4
Hydrogen	H	1·008	1·000
Indium	In	114	113·1
Iodine	I	126·85	125·90
Iridium	Ir	193·0	191·5
Iron	Fe	55·9	55·5
Krypton	Kr	81·8	81·2
Lanthanum	La	138·9	137·9
Lead	Pb	206·9	205·35
Lithium	Li	7·03	6·98
Magnesium	Mg	24·36	24·18
Manganese	Mn	55·0	54·6
Mercury	Hg	200·0	198·5
Molybdenum	Mo	96·0	95 3
Neodymium	Nd	143·6	142·5
Neon	Ne	20	19·9
Nickel	Ni	58·7	58·3
Nitrogen	N	14·04	13·93
Osmium	Os	191·	189·6
Oxygen	O	16·00	158·8
Palladium	Pd	106·5	105·7
Phosphorus	P	31·0	30·77
Platinum	Pt	194·8	193·3
Potassium	K	39·15	38·86
Praseodymium	Pr	140·5	139·4
Radium	Ra	225	223·3
Rhodium	Rh	103·0	102·2
Rubidium	Rb	85·4	84·8
Ruthenium	Ru	101·7	100·9
Samarium	Sm	150	148·9
Scandium	Sc	44·1	43·8
Selenium	Se	79·2	78·6
Silicon	Si	28·4	28·2
Silver	Ag	107·93	107·12
Sodium	Na	23·05	22·88
Strontium	Sr	87·6	86·94
Sulphur	S	32·06	31·83
Tantalum	Ta	183	181·6
Tellurium	Te	127·6	126·6
Terbium	Tb	160	158·8
Thallium	Tl	204·1	202·6
Thorium	Th	232·5	230·8
Thulium	Tm	171	169·7
Tin	Sn	119·0	118·1
Titanium	Ti	48·1	47·7
Tungsten	W	184·0	182·6
Uranium	U	238·5	236·7
Vanadium	V	51·2	50·8
Xenon	X	128	127
Ytterbium	Yb	173·0	171·7
Yttrium	Yt	89·0	88·3
Zinc	Zn	65·4	64·9
Zirconium	Zr	90·6	89·2

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MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

Will.—The will of the late Mr. John Green, chemist and druggist, of Deal, has been proved at £7,488 gross.

Burglary at Nottingham.—At the resumption of the hearing of the charge against a man for breaking into the shop of Mr. C. A. Bolton, chemist, Nottingham, further evidence was given, and the prisoner was committed for trial.

Plymouth, Devonport, Stonehouse and District Chemists' Association.—The address of the Hon. Secretary of this Association is Mr. George Fairweather, 107, Embankment Road, Plymouth, not No. 11, as stated last week.

Guinea Postal Orders.—It is announced in the *Gazette* that the Postmaster-General has made regulations, with the consent of the Treasury, authorising the issue on and from the 15th inst. of inland postal orders for the sum of 21s.

Bournemouth Pharmaceutical Association.—The annual supper of the Bournemouth Pharmaceutical Association has been arranged for Friday, October 30. Full particulars may be obtained from Mr. Francis Rose, Hon. Secretary, Boscombe Pharmacy, Bournemouth.

North Kent and District Chemists' Association.—Referring to the information concerning the North Kent and District Chemists' Association, published last week, the Secretary now informs us that the Association is affiliated to the Federation of Local Pharmaceutical Associations.

Crime and Methylated Spirit.—The consumption of methylated spirit has become so general in Londonderry and district that a member of the Corporation brought the matter forward at a meeting on September 30. He said the practice was poisoning the rising generation, and was conducing to the increase of crime. The attention of the police is to be drawn to the matter.

Burglary at a Glasgow Chemist's.—On Sunday night the pharmacy of Mr. Harvey P. Arthur, M.P.S., Crosshill, Glasgow, was broken into by burglars. In their hunt for money the thieves opened all the drawers in the shop and a desk, but only succeeded in finding about 10s. in copper and small silver. Fortunately, no damage was done to the fittings, and none of the stock was taken. Two arrests have already been made.

Memorial to the late Alderman B. Robinson.—At a meeting of the Alderman Benjamin Robinson (chemist) Memorial Committee, Salford, on Friday, Sir Richard Mottram in the chair, it was resolved that the memorial take the form of a bust of white marble to be placed on a suitable pedestal and erected in the Technical Institute. The execution of the work has been placed in the hands of a Manchester sculptor, Mr. John Cassidy.

Annual Medical Service at St. Paul's.—This service, organised by the Guild of St. Luke, will take place this year on Wednesday, October 21, at 7.30 p.m., at St. Paul's Cathedral, when the sermon will be preached by the Rev. Prebendary H. Montague Villiers, Vicar of St. Paul's, Knightsbridge. As heretofore, graduates are asked to attend in academical robes. The music will be rendered by the London Church Choir Association. Admission to the space under the dome will be by ticket only.

Pills at Auction.—The sale of a pill at the Mart, Tokenhouse Yard, recently created quite a sensation in public auction business, and now another "patent" medicine has been brought to the hammer. On Wednesday, October 7, Messrs. Arthur Harris and Co. offered the recipe and business premises in Wardour Street of Dr. Blundell's gout and rheumatic pills, together with the recipe of Crowe's balsam of linseed and honey. The reserve of £500 was not reached, and the "lot" was withdrawn at £450.

A "Mountain of Alum."—In China, about twelve miles from the village of Lion Chek, there is, according to the *Liverpool Daily Post*, a mountain extraordinarily rich in alum. The mountain is not less than ten miles in circumference at its base, and has a height of nearly 2,000 ft. The alum is obtained by quarrying large blocks of stone, which are first heated in great furnaces and then in vats filled with boiling water. The alum crystallises and forms a layer about 6 in. in thickness. This layer is subsequently broken up into blocks weighing about 10 lb. each.

The Cost of Drugs in Hospitals.—No new development seems as yet to have been announced in connection with the action of the Committee of the Metropolitan Hospital Sunday Fund, in calling for a reduction in the drug bill of various London hospitals. The *Medical Press* has pointed out the danger to the poorer classes of the community that will probably result if any such course is insisted on. It is probable, however, that the Committee of the Fund has no wish to impair efficiency, but only a desire to give a general warning against undue extravagance.

The Duty on Alcohol.—In the course of a letter to the *Standard*, Mr. H. Wippell Gadd, of Exeter, gives a striking example of the crippling of British chemical industry caused by alcohol taxation. In England the cost of materials alone for the production of diethylaniline is 2s. 4d. per lb., while in Germany it is 4d. per lb. only. This is entirely due to the "unnecessary duty imposed by a paternal Government." Another correspondent observes that when it can be clearly shown that the use of denatured spirit is injurious in any manufacture, the Inland Revenue is empowered to allow the use of pure alcohol duty-free.

Supposed Cattle Poisoning.—An order was issued in Alderney on Monday, prohibiting the manufacture of explosives on the island. The order is the result of an official inquiry into a number of mysterious cases of death among the cattle on the island. Traces of mercury were found in the viscera of the dead cattle, and in many meadows and gardens. The herbage was impregnated with mercury, which is dangerous both to men and cattle. The presence of the mercury powder is attributed to an explosion at a factory where fulminate of mercury was being manufactured. The explosion occurred on September 10, at the time of the recent gale, which scattered the powder broadcast. Further losses of cattle continue to be reported. The chief industry of the islanders is the raising of cattle.

A Census of Homœopathic Physicians.—At or about the dawn of the twentieth century, says the *Pharmaceutical Era*, there were in the United States (exclusive of Alaska and other dependencies) 9,369 homœopathic practitioners, or one in 8,000 of its population; in Barbados, 5, or one in 38,000; in British America (including Newfoundland and all of Labrador) 87, or one in 64,000; in Uruguay 7, or one in 133,000; in Switzerland 22, or one in 151,000; in Australasia 29, or one in 155,000; in Spain 118, or one in 163,000; in Belgium 41, or one in 164,000; in France 211, or one in 192,000; in Germany 290, or one in 194,000; in Great Britain and Ireland 201, or one in 203,000; in Holland 17, or one in 300,000; in Denmark 8, or one in 306,000; in Mexico 32, or one in 423,000; in Brazil 33, or one in 428,000; in Italy 42, or one in 772,000; in Argentina 6, or one in 809,000; in European Russia 66, or one in 1,608,000; in Portugal 3, or one in 1,674,000. There were also 41 in India, two in China, one each in Cape Colony, Sweden and Venezuela, as well as three in the Hawaiian Islands and one in Alaska. This indicates there are not less than 10,635 disciples of Hahnemann in the world, of whom 88 per cent. reside within the limits of the United States proper.

SCHOOL AND COLLEGE NEWS.

Scotch Education Department.—Sir Henry Craik, in a letter from the Scotch Education Department, announces that a change is contemplated in the mathematics of the leaving certificate examination. With the object of encouraging thought on the part of students, and of diminishing the tendency to mechanical methods of instruction in mathematics, there will be introduced in the lower and higher grade papers of the examination of 1905, provisions by which higher arithmetic shall cease to be accepted as an alternative for lower mathematics.

School of Pharmacy.—On Thursday, October 1, 1903, at the Horseshoe Hotel, Tottenham Court Road, London, W., a students' smoking concert was held, Mr. R. A. Robinson, jun., in the chair. This was the fourth of a series of inaugural smoking concerts, which are arranged to take place at the beginning of the session of the School each year. There was a good attendance of past and present students, among the former being Messrs. W. Garsed, A. G. C. Paterson, J. C. Kent, F. Capel Hanbury, J. T. Cart, and P. Gale. Mr. F. G. C. Walker, in responding to the toast of the "School of Pharmacy," which was given from the chair, and received with musical honours, gave a brief account of the work of the Students' Association and the Football Club. It was due in great measure to Mr. Braham, a visitor, who kindly accompanied the songs, and also sang several times, that the proceedings went with a swing from start to finish. This annual smoking concert is of service in introducing new students to one another before the serious work of the session commences at the "Square."

Pharmaceutical Football Club.—The first general meeting of the season was held on Wednesday evening, in the Lecture Theatre, 17, Bloomsbury Square, Mr. Paterson in the chair. The minutes of the last general meeting were read and confirmed. The Secretary (Mr. J. T. Cart) then read the annual report for the past season. The report showed the season to have been highly successful. The Treasurer (Mr. G. E. Jones) presented the balance-sheet for the past season, and, this having been audited and found correct, showed a balance of £2 10s. 11d. on the year's expenditure. The election of the following officers followed:—President, Professor H. G. Greenish, Dean of School of Pharmacy; Vice-Presidents, Mr. S. R. Atkins, President of the Pharmaceutical Society; Dr. J. Attfield, Messrs. Bremridge, Browne, Carteighe, Professor J. Reynolds Green, J. C. Hewlett, Walter Hills, Professor Palmer Wynne; Captain, V. C. Hewlett; Vice-Captain, J. F. White; Hon. Treasurer, G. E. Jones; Hon. Secretary, C. J. M. Cole; Committee, Messrs. Cart, Clarke, Fox, Gorton, Roberts, and Walker. The Chairman thanked Mr. Jones for the interest he took as Hon. Treasurer of the club, an office which he had undertaken for the past twenty years. A vote of thanks to the Chairman concluded the business.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. John C. M. Love has taken over the business at 194, Battlefield Road, Langdale, lately carried on by Mr. W. Whyte.

Mr. S. C. McKee, chemist and druggist, has disposed of his business at 105A, High Street, Tunstall, to Mr. J. D. Melling.

Alderman T. C. Lamb, pharmaceutical chemist, Mayor of Chatham, has been elected a Vice-President of the local Tradesmen's Association.

Mr. T. H. Owain-Jones, M.P.S., has purchased the old-established business of Mr. Owen Jones at Abergele, N. Wales, which he intends running on modern lines.

Mr. P. J. D. Fielding, F.C.S., M.P.S.I., has been presented on the occasion of his marriage, with an illuminated address by the staff of the Cork Chemical and Drug Company, Limited.

Mrs. Fry, widow of Mr. W. C. Fry, chemist and druggist, of 18, Fore Street, Taunton, announces that the business will be continued on her behalf by her son, Mr. Albert Fry, M.P.S.

Mr. R. Ruthven P. Hamblen, M.P.S., has succeeded Mr. William B. Ellis in the dispensing business at 57, Brixton Road, S.W., carried on during the past year under the name of Ellis and Hamblen. Mr. Ellis retires after thirty-eight years at this pharmacy.

Mr. J. B. Ellisson, chemist and druggist, of Hoyland Common, President of the Barnsley and District Chemists' Association, met with a painful accident on Thursday, the 1st inst. Whilst alighting from a railway carriage he fell and sustained a severe shock. Mr. Ellisson is now reported to be progressing favourably.

Mr. Thomas Maugham, M.P.S., has been elected President of the Pharmaceutical Society of Queensland. Mr. Maugham, who was born in London, was apprenticed to Mr. R. Watkins, of Belgravia, and was afterwards assistant to Messrs. J. Bell and Co., Oxford Street. Later, he was in business at Clapham and at Peckham, subsequently, in 1882, settling in Brisbane. Mr. Maugham was one of the founders of the Pharmaceutical Society of Queensland, and joined the Council in 1901. Last year he was elected Vice-President.

TRADE NOTES.

S. Maw, Son and Sons, 7 to 12, Aldersgate Street, London, E.C. The quarterly price-list of medical, surgical and sundry appliances, and other pharmaceutical and medical requisites has just been issued. Like its predecessors it is well arranged and very complete, and is practically a necessary adjunct to every pharmacy

"Once Upon a Time."—Reference has already been made in this column to the interesting little booklets issued by Messrs. Wright, Layman, and Umney, Limited, 48, Southwark Street, S.E., in connection with their prize competition, and, as four-fifths of the issue has already been sold, any chemist requiring these books should make immediate application for them.

Almanacks and Calendars.—Samples of a series of artistic and useful almanacks for the year 1904 have been submitted to us by Messrs. Ford, Shapland and Co., 6, Great Turnstile, High Holborn, London, W.C. These little booklets, which vary in size from crown octavo to the tiny diaries for the waistcoat pocket, contain, in addition to blank pages of notes, tabulated information concerning those matters which one has daily need to refer to. They should prove a profitable medium for advertisements.

Ross's Catalogue.—Messrs. Ross, Limited, 111, New Bond Street, W., have just issued a new edition of their general catalogue, with a photographic supplement. Both publications are beautifully illustrated by reproductions of photographs taken with Ross, Ross-Zeiss, and Ross-Goerz lenses. These lenses can be fitted to almost any class of camera, and full particulars as to cost, etc., are given in the catalogues, which should be in the possession of all dealers desirous of cultivating a high-class photographic or optical business.

"Known, Admitted, and Approved."—Messrs. Matthews and Wilson, pill and tablet manufacturers, 46, Portland Road, South Norwood, London, S.E., offer to supply free 2,000 assorted labels bearing the names and addresses of individual chemists, giving the reference number to any of the formulæ mentioned in the "Pharmaceutical Journal Formulary" with fifty gross of assorted pills. This is a liberal offer, and will save chemists a great deal of trouble with regard to pill-box labels. Readers should apply to this very up-to-date firm for fuller particulars as to prices.

Science Note-Books.—Two handy and useful little note-books for the use of science teachers and students of science have been issued by Messrs. James Woolley, Sons and Co., Limited, the well-known firm of manufacturing chemists, of Victoria Bridge, Manchester. The one is entitled 'The Science Teachers' Pocket-Book and Diary, 1903-4,' and the other 'The Science Students' Note-Book, 1903-4,' and both of these little volumes contain a large number of tables, as well as concise information concerning those matters which both the teacher and the student have constant need to refer to. The price of the 'Students' Note-Book,' which contains a number of blank pages for additional notes, is 6d., and the price of the 'Teachers' Pocket-Book and Diary' is 1s. Either of the booklets can be carried in the pocket, and those interested would do well to procure copies.

COMPANY INTELLIGENCE.

Meggeson and Co., Limited.—The third annual meeting of this company was held at 118, Cannon Street, London, E.C., on September 30, when a final dividend at the rate of 10 per cent. per annum was declared on the ordinary shares. Warrants for the above and for the half-yearly interest on debentures and preference shares were posted on October 1.

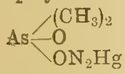
Hopkin and Williams, Limited.—Registered September 29. Capital, £25,000, in £1 shares (24,900 preference). Object, to adopt an agreement with D. Howard, T. Howard, A. G. Howard, D. L. Howard, B. F. Howard, and G. E. Howard, and to carry on at Stratford and elsewhere the business of manufacturing chemists, druggists, drysalters, oil and colour men, importers and manufacturers of and dealers in pharmaceutical, medical, chemical, industrial, and other preparations, makers of and dealers in electrical, chemical, photographic, surgical, and scientific apparatus and materials, etc. No initial public issue. The first directors (to number not less than three nor more than six) are D. Howard, T. Howard, A. G. Howard, D. L. Howard, B. F. Howard, and G. E. Howard. Qualification, one ordinary share. Remuneration, as fixed by the company. Secretary: E. White. Registered office, 16, Cross Street, Hatton Garden, E.C.

Howards and Sons, Limited.—Registered September 28 by Nussey and Fellowes, 1, Great Winchester Street, E.C. Capital, £150,000, in £1 shares (148,200 4 per cent. cumulative preference). Objects: To adopt an agreement with D. Howard, T. Howard, A. G. Howard, D. L. Howard, B. F. Howard, and G. E. Howard, and to carry on at Stratford or elsewhere the business of manufacturing chemists, druggists, drysalters, oil and colourmen, importers and manufacturers of and dealers in pharmaceutical, medical, chemical, industrial and other preparations, articles and compounds, cement and varnish manufacturers, drug, dyeware and colour grinders, manufacturers of electrical, chemical, photographic, surgical and scientific apparatus and materials, makers and vendors of proprietary articles, etc. The signatories are D. Howard, Devon House, Buckhurst Hill; T. Howard, Westleigh, Bickley, Kent; A. G. Howard, Burnt House, Chigwell, Essex; D. L. Howard, Little Friday Hill, Chingford; B. F. Howard, Devon House, Buckhurst Hill; G. E. Howard, Ardmore, Buckhurst Hill; F. G. Howard, Keynedon, Buckhurst Hill. No initial public issue. The number of directors is not to be less than three nor more than six; the first are D. Howard, T. Howard, A. G. Howard, D. L. Howard, B. F. Howard, and G. E. Howard. Qualification, 5,000 preference and 100 ordinary shares. Remuneration (including managing directors), £1,500 per annum, and any further sum voted by the company, divisible. A. G. Howard, D. L. Howard, B. F. Howard, and G. E. Howard are the first managing directors. G. E. Howard is the first secretary. Registered office, City Mills, Stratford, Essex.

NEW REMEDIES.

The Notes in this column embody recent suggestions in therapeutics, for the information of dispensers; they deal with novel applications of drugs and preparations in common use, in addition to new remedies strictly so-called.

Codeine Phosphate in Melancholia.—Clausse states that codeine phosphate administered in hypodermic injections in doses not exceeding ¼ grain, or given in pills in quantities of not more than ½ grain, is an excellent mental sedative in malancholia, relieving the abnormal mental distress in an analogous manner to that in which opium allays physical suffering.—*Bull. Gen. de Therap.*, **145**, 617.

New Mercury Salts for Injections.—L. Jullien and F. Berlioz have brought before the Société de Thérapeutique de Paris the following combinations of mercury, which are stated to give better results than the salts usually employed for hypodermic medication: — *Mercury cacocdyl*,  $\mathrm{As}\begin{matrix}/(\mathrm{CH_3})_2\\ -\mathrm{O}\\ \backslash\mathrm{ON_2Hg}\end{matrix}$ a compound of ammonium cacodylate with mercuric oxide, which occurs as a greyish-white powder, very soluble in water, containing 56 per cent. of mercury. It is well borne in doses of ⅙ to ⅓ grain when administered by hypodermic injection. *Ammonium chloro-mercurate*, $HgCl_2{\cdot}2NH_4Cl$, prepared by dissolving yellow mercuric oxide in a solution of ammonium chloride, is relatively but slightly toxic compared with sublimate, guinea-pigs tolerating from 8 Mgm. to 1 Cgm. for each kilo of body weight. It does not coagulate albumin, and is perfectly painless when used in hypodermic or intramuscular injection. *Mercuric oxychloride*, $HgO{\cdot}2HgCl_2$, which alone is insoluble and very acid, is readily dissolved by means of ammonium chloride as follows:—Mercuric oxychloride, 2; ammonium chloride, 6; distilled water, 100. It may be given in subcutaneous doses of ⅙ to ⅓ grain.—*Bull. Gén. de Thérap.*, **145**, 785.

PRACTICAL NOTES AND FORMULÆ.

White Heliotrope Bouquet.

Heliotropin, 120 grains; white rose extract, 1 fl. oz.; jasmin extract, 1 fl. oz.; essence of musk, 4 drachms; alcohol (90 per cent.), 4 pints.—*Spatula*, **9**, 413.

To Remove Picric Acid Stains.

J. Bougault finds that stains produced by picric acid may be easily removed by rubbing them with a little solution of an alkaline sulphide, followed by a thorough washing with soap and water. The latter process must be thoroughly performed, since, if any of the sulphide be left, it will, in its turn, give a black mark on contact with most of the common metals. If this occur the spot must again be washed with a little hydrogen peroxide acidified with hydrochloric acid. The method is based on the fact that the alkaline sulphides reduce the NO_2 group to NH_3. *Journ. Pharm. Chim.* [6], **18**, 158.

Folkestone Bouquet.

Musk, 30 grains; neroli oil, 30 minims; lavender oil, 30 minims; clove oil, 30 minims; sandal oil, 30 minims; otto of rose, 1 drachm; bergamot oil, ½ fl. oz.; millefleurs, 4 fl. oz.; jasmin extract, 4 fl. oz.; tincture of Tonka bean, 4 fl. oz.; tincture of orris, 4 fl. oz.; triple rose water, 10 fl. oz.; triple orange flower water, 10 fl. oz.; alcohol (90per cent.), 80 fl. oz.—*Spatula*, **9**, 413.

Frangipanni.

Sandal oil, 1 drachm; neroli oil, 1 drachm; rose geranium oil, 1 drachm; otto of rose, 2 drachms; essence of civet, 4 drachms; spirit of vetivert, 1 fl. oz.; tincture of orris, 3 fl. oz.; orange flower extract, 3 fl. oz.; tuberose extract, 3 fl. oz.; essence of musk, 5 fl. oz.—*Spatula*, **9**, 413.

Germania Bouquet.

Musk, 3 grains; coumarin, 6 grains; vanillin, 15 grains; storax, 10 drachms; oil of bitter almonds, 8 minims; oil of orris root, 15 grains; otto of rose, 30 minims; neroli oil, 30 minims; oil of rose geranium, 1½ drachms; tuberose extract, 15 fl. oz.; jasmin extract, 15 fl. oz.; alcohol (90 per cent.), 5 pints. Macerate for one month, then filter.—*Spatula*, **9**, 413.

Carnation Pink.

Clove oil, 5 minims; cassie extract, 4 fl. oz.; jasmin extract, 2 fl. oz.; orange flower extract, 4 fl. oz.; rose extract, 8 fl. oz.; essence of civet, 2 fl. oz.; essence of vanilla, 2 fl. oz.; tincture of storax, 1 fl. oz.; spirit of ylang ylang, 4 fl. oz. The spirit of ylang ylang is a solution of ylang ylang oil, and 2 drachms in alcohol (90 per cent.), 20 fl. oz.—*Spatula*, **9**, 411.

[The odour of clove or carnation may be much improved by substituting iso-eugenol for clove oil.—Ed. *P.J.*]

Chypre.

Oil of rosemary, 100 minims; oil of bitter orange, 240 minims; oil of petit grain, 120 minims; oil of bergamot, 150 minims; oil of limetta, 240 minims; alcohol (90 per cent.), 80 fl. oz. Mix. After four days add distilled water, 10 fl. oz. Allow to stand for a fortnight, then filter.—*Spatula*, **9**, 412.

Esterhazy Bouquet.

Clove oil, 15 minims; sandal oil, 15 minims; essence of ambergris, 1½ fl. oz.; tincture of orris, 6 fl. oz.; essence of vanilla, 6 fl. oz.; tincture of Tonka bean, 6 fl. oz.; spirit of vetivert, 6 fl. oz.; spirit of neroli, 6 fl. oz.; orange extract, 1 fl. oz.; spirit of rose, 6 fl. oz. Spirit of vetivert is composed of vetivert oil, 2 drachms; alcohol (90 per cent.), 40 fl. oz.—*Spatula*, **9**, 412.

Nightblooming Cereus.

Essence of civet, 2 fl. oz.; tincture of tonka bean, 2 fl. oz.; tincture of benzoin, 4 fl. oz.; spirit of rose, 4 fl. oz.; jasmin extract, 4 fl. oz. Mix. The essence of civet in the above is thus prepared: Civet, 1 drachm; powdered orris, ½ oz.; ammonium carbonate, 10 grains; alcohol, 15 fl. oz.; water, 1 fl. oz. Rub the civet with the orris. Dissolve the ammonium carbonate in the water; add to the spirit, and mix with the civet and orris. Bottle, and macerate for one month.—*Spatula*, **9**, 411.

Caroline Bouquet.

Lemon oil, 15 minims; bergamot oil, 1 drachm; rose extract, 4 fl. oz.; tuberose extract, 4 fl. oz.; violet extract, 4 fl. oz.; tincture of orris, 2 fl. oz.; essence of ambergris, 1 fl. oz. Mix and filter after ten days.—*Spatula*, **9**, 411.

Saratoga Nosegay.

Musk essence, 4 fl. oz.; bergamot oil, 1½ drachms; jasmin extract, 2 fl. oz.; lavender oil, Mitcham, ½ drachm; neroli oil, ½ drachm; patchouli oil, 5 minims; pimento oil, 5 minims; otto of rose, 1½ drachms; verbena oil, 8 minims; cassia oil, 5 minims; alcohol, 90 per cent., 80 fl. oz. Macerate one month, then filter. This resembles, but is superior to Mona bouquet.—*Spatula*, **9**, 411.

Buckingham Bouquet.

Oil of lavender, 10 minims; oil of neroli, 10 minims; cassie extract, 8 fl. oz.; jasmin extract, 8 fl. oz.; otto of rose, 20 minims; orange flower extract, 8 fl. oz.; rose extract, 8 fl. oz.; essence of ambergris, 4 fl. oz.; tincture of orris, 4 fl. oz.—*Spatula*, **9**, 411.

Bouquet d'Amour.

Lavender oil, 2 drachms; clove oil, 1 drachm; bergamot oil, 1 drachm; otto of rose, 2 minims; essence of ambergris, 5 drachms; essence of vanilla, 5 drachms; alcohol (90 per cent.), 1 pint.—*Spatula*, **9**, 410.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

General Markets.

London, Thursday, October 8, 1903.

The tone of the markets in Drugs and Chemicals has been decidedly flat during the week ended to-day. Few changes have occurred, and the volume of business transacted has not been large. On Mincing Lane and in drug and chemical circles generally, Mr. Chamberlain's speech has been freely discussed; it is impossible, at present, to summarise in a few words the general impression it has produced. It is the opinion in some quarters that if the proposed scheme were adopted a great stimulus would be given to certain manufacturing industries. Chemical manufacturers would, of course, welcome, more than anything else, a reduction in the duties on spirit used for manufacturing purposes. Peppermint Oil continues to be an interesting article, and sales of American brands have been made at good prices. Japan Oil has further advanced. Menthol is again dearer, and shows signs of advancing. Ipecacuanha is dearer, and it is reported that the whole of the Minas on the spot has been cleared. In spite of the fact that higher rates may possibly be expected in the Opium market, the price of Codeine has been slightly reduced; this is due to the foolish competition of synthetic makers on the Continent. The reduction, which is due to purely artificial causes, may not, however, be of long duration. There is no change in Morphine. Quinine, at the time of going to press, is in an unsettled condition; holders are undecided what prices to ask in view of the higher prices which have been obtained at to-day's Bark Auctions (the mid-auction rise was at the rate of 5 per cent) in Amsterdam. Higher prices are expected. Particulars of other articles of interest are recorded below:—

ACID CITRIC.—At 1s. 0½d. to 1s. 1d. per lb., according to quantity.

ACID TARTARIC.—English on the spot, 1s. 1d.; foreign, 1s. 0¼d. to 1s. 0½d.

ALUM.—Lump, £5 12s. 6d.; powder, £6 2s. 6d.

ARROWROOT.—At the auctions on Wednesday 250 barrels St. Vincent were offered, and 140 sold at steady rates. Good manufacturing, 2⅛d.

BISMUTH CARBONATE.—8s. 1d. per lb.; subnitrate, 7s. 4d.

BLEACHING POWDER.—English, £5 2s. 6d.

BORACIC ACID.—Crystals, 22s. 6d.; Powder, 24s. 6d.

BORAX.—Crystals, 13s. 6d. to 14s. 6d. per cwt., according to quantity; powder, 15s. 6d. to 16s. 6d.

BROMIDES—Are unaltered. Potassium Bromide is quoted at 1s. 11½ per lb.

CANTHARIDES.—Some holders are asking as high as 3s. 6d. for new Russian, but 3s. 3d. is the selling price.

CARBOLIC ACID.—The general condition of the market continues quietly steady. Crystal, 34° to 35° C., 5¼d.; 39° to 40° C., 5½d.; detached crystals, 39° to 40° C., 7d. per lb.; crude, 60° F., 1s. 6½d. per gallon; liquid (95 to 98 per cent.) of pale straw colour, 1s. 2d. per gallon.

CASCARA SAGRADA.—The quotations are nominally unchanged.

CASSIA OIL—Is rather better. 3s. 2d. has been paid for 80 to 85 per cent.

CHAMOMILES—Are firmer. A few brown are to be had at 25s. c.i.f. For No. 2 Belgian the price is 35s. and for No. 1 45s.

CLOVES.—At the auction on Wednesday 37 cases Penang were offered, and 10 sold at higher prices, fair bright picked at 11d., dark ditto at 9¼d. In the private market Zanzibar have advanced, and a large quantity has changed hands.

COCAINE.—The reduced prices are 15s. 6d. to 16s., according to quantity, for the hydrochloride, and 18s. to 18s. 6d. for the pure alkaloid.

COCOANUT OIL.—Slightly easier. Ceylon spot, £25 10s.; Cochin spot, £31.

CODEINE.—A reduction of 7d. per oz. has been made through the foolish competition of synthetic makers on the Continent. This reduction may not be permanent. The price is now 9s. 5d. for the pure alkaloid.

COD LIVER OIL.—Norwegian, 480s. to 520s., according to brand.

CREAM OF TARTAR.—87s. is the price for 98 per cent.

ERGOT—Is again dearer. Business has been done at 1s. 6d., c.i.f.; 1s. 9d. is the spot price.

GINGER.—At the Spice sales on Wednesday nearly 700 packages Cochin were offered, and 280 sold at lower rates. Jamaica was neglected.

GLYCERIN.—£3 8s. per cwt. for ½-ton lots. Schering's double distilled, 1·260, 73s. per cwt.; ditto, distilled, 71s.

HYDRASTIS ROOT—Is again firmer at 3s. 4d. spot.

IODIDE OF POTASSIUM—Unchanged at 8s. 9d. per lb.

IODINE—Unaltered at 9s. 9d. to 10s. per lb., for the resublimed, according to quantity.

IODOFORM.—11s. 8d. per lb., for the pure crystals or powder.

IPECACUANHA—Is dearer. Rio has been sold at 5s. 3d., and 5s. 6d. is now the price. All the Minas on the spot has been disposed of.

KOLA NUTS.—At Wednesday's sales 23 packages found buyers at prices ranging from 1d. to 6d. per lb.

LINSEED OIL.—London spot pipes £18 12s. 6d.; barrels £18 17s. 6d.

MENTHOL.—There is nothing to be had on the spot under 23s., and sales have been made at this price. To arrive, 19s. is the figure quoted.

MERCURIALS.—Calomel, 2s. 8d.; corrosive sublimate, 2s. 4d.; red precipitate, 2s. 11d.; white precipitate, 2s. 11½d.; mercuric sulphate, 2s. 4d. per lb.

MORPHINE.—The price is unchanged, at 4s. 6d. to 4s. 8d. per oz.

NUTMEGS.—Penang were firmly held at the Spice auctions. West Indian sold at dearer rates.

OLIVE OIL.—Mogador, £33.

OPIUM.—Very little business is doing in any of the varieties. News is to hand from Smyrna to-day to the effect that the drought continues, and that higher prices may be looked for.

OXALIC ACID—2⅝d. to 2⅞d., delivered free London.

PALM OIL.—Lagos on the spot is quoted £28 15s.

PEPPERMINT OIL.—A sale of H.G.H. has been made at 16s., but it is still possible to buy at a little below this figure—say 15s. 9d. to 16s. Tin oil is rather quieter, owing to a better supply in the second-hand market; nominally the same price is quoted. Stilwell's is quoted at 13s. For Japan oil 7s. 9d. has been paid and 8s. is asked.

PIMENTO.—Some sales have been made of fair at 4d.

QUICKSILVER.—The following is abstracted from the monthly report issued by Mr. Alex. S. Pickering:—Imports: September, 1903, 100 bottles; January/September, 1903, 33,881. September, 1902, 200 bottles; January/September, 1902, 32,359 bottles. Exports: September, 1903, 1,089 bottles; January/September, 1903, 14,967 bottles. September, 1902, 1,466 bottles; January/September, 1902, 16,509 bottles Average Price: September, 1903, £8 8s. 6d.; September, 1902, £8 15s.

QUININE.—Large sales have been made in the second-hand market, and, at the time of going to press, 1s. 0½d. is the spot price. But it is anticipated that the Amsterdam Bark auctions will affect the position of this article to a noticeable extent. In fact, some holders are already asking a fraction over 1s. 1d. per oz.

SENEGA.—Is firmer at 3s. 3d. c.i.f., and 3s. 4d. spot.

SHELLAC.—The market is quiet. Sales of fair TN Orange have been made at 188s. AC Garnet is dearer.

SODIUM BICARBONATE.—£7 5s. per ton landed. Howards', 45s. per cwt.

SULPHATE OF AMMONIA.—£12 12s. 6d., Beckton terms prompt.

TURPENTINE.—American spot 42s.

Foreign Markets.

THE DRUG TRADE IN BRITISH INDIA.—The value of the drugs and medicines imported into British India by sea from foreign countries during the year 1901-2 was £397,531, this figure showing a decrease of £13,775 on that of the previous year. The drugs and medicines, excluding opium, which were exported during the same period, were valued at £142,558, which is lower than in any year since 1896-7. The value of the opium exported also shows a reduction compared with the year 1900-1, the value in 1901-2 being £5,681,990. The value of exported gums and resins is still much less than in some previous years, but a slight improvement was manifested as compared with 1900-1, which was a particularly dull year, the value in 1901-2 being almost exactly £100,000. There is a considerable increase in exported seeds and spices, and a decrease in oils and oil-cake. Nearly £36,000 worth of chemicals, drugs, and medicines was imported during the year for Government stores. Of the drugs and medicines imported into India, just over one-half comes from the United Kingdom. The last two years have seen great increases in the value of castor-oil seed and linseed exported from British India to the United Kingdom, the value of the former having more than doubled since 1899-00. Of the opium, the quantity exported to China, Hong Kong, and the Treaty Ports during the year was valued at a trifle over four million pounds, a figure which is lower than any for some years past. Java, on the other hand, seems to be taking more opium from India than in former years, the value being £80,418; but Cochin China, the Straits Settlements, and other countries have taken much less Indian opium than in 1900-1. 607,418 acres of land in British India is under cultivation for opium. The land under cultivation for linseed is stated to exceed 2¼ million acres in extent; this acreage has decreased very considerably during the last decade.

A TAX ON MORPHIA.—The new import tariff (says the Commercial Attaché to His Majesty's legation at Pekin), agreed upon between China and the Treaty Powers in terms of the Final Protocol of 1901, substitutes for a 5 per cent. *ad-valorem* charge on morphia a specific duty of 3 Haikuan taels per ounce, equal to 181 per cent. *ad valorem;* and in Article XI. of the new Treaty negotiated by Sir James Mackay, the British Government agree to a prohibition forbidding its general importation into China, except under certain conditions, for medical use. It ought, therefore, shortly to disappear from the list of imports, in which the quantity imported last year is put down at 195,133 oz., an increase of 56,566 oz. over 1901.

THE IMPORTATION OF INDIAN OPIUM INTO CHINA.—According to the report on the foreign trade of China for the year 1902, there has been a drop in the importation of Indian opium into China in the course of the last ten years of 28·4 per cent., but since 1897 the average annual quantity imported has remained steady at about 61,000 cwt. Last year shows a slight increase, 1,526 cwt. over 1901. High exchange did not curtail imports to the extent anticipated. That such should have been the case is mainly attributable to the complete failure of the poppy crop in many districts of Ssuch'uan.

UNITED KINGDOM IMPORTS AND EXPORTS OF DRUGS, ETC.—During the month of September, 1903, there was an increase in the value of drugs, chemicals, dyes, and colours imported into the United Kingdom to the extent of £21,346, as compared with September, 1902. The exports for the United Kingdom during September last were £50,938 more than in the same month of 1902. The following figures show the quantities of various articles imported into this country during the month of September last. Glycerin, 6,994 cwts.; Borax, 45.020 cwts.; Peruvian Bark, 2,469 cwts.; Quinine and its salts, 45,950 ounces. The following are the export figures for the same period:—Glycerin, 12,023 cwts.; Quinine and Quinine Salts, 127,587 ounces; Bicarbonate of Soda, 23,627 cwts.; Caustic Soda, 113.167 cwts.

PHOTOGRAPHIC NOTE.

BY A PHARMACIST-PHOTOGRAPHER.

Bromide Printing.

Now that the summer light is failing and the days are becoming short, development printing is likely to supersede the ordinary method of printing-out on gelatino-chloride papers. A simple and excellent developer which I have found suitable for use with all descriptions of bromide paper can be prepared as follows:—

Amidol	2 grains
Sodium Sulphite	30 grains
Potassium Bromide	1 grain

to each ounce of water. With a fairly correct exposure this will be found to produce prints of a rich black tone, and of good quality, and it may as well be here stated that the whole secret of successful bromide printing lies in correctness of exposure. It is generally taken for granted that any poor, flat negative is good enough to yield a bromide print, but, in my experience, this is not so. A negative of good printing quality on P.O.P. will also yield a good print on bromide paper, but considerable care and skill is necessary to obtain a good result from a poor negative. The above developer will not keep in solution, and should be freshly prepared as required, but probably a convenient method of keeping it in readiness for use or sale would be in the form of packets or cartridges. In this case the anhydrous sodium sulphite will be found preferable to the crystalline salt, and of this 15 grains, instead of 30, to each fluid ounce of developer will be sufficient. The same formula will also be found useful for the development of lantern-plates, but will only yield black-toned slides.

PATENTS AND TRADE MARKS.*

New Patent Applications.

PROCESS FOR PRODUCING HYDROCYANIC ACID (No. 19,804, of 1902).—H. C. Woltereck, 3, Edinburgh Mansions, Howick Place, Victoria Street, S.W. Hydrocyanic acid is manufactured by passing a mixture in equal volume of gaseous ammonia, a volatilised or gaseous carbon compound and hydrogen over a suitable catalytic agent, such as platinised pumice, strongly heated. The temperature to which the catalytic agent should be heated varies with the nature of the carbon compound employed. The gases before they enter the reaction chamber or tube are carefully dried and preferably mixed. In a variation—one volume of dry ammonia and two volumes of dry water gas are passed over platinised pumice or other heated catalytic agent, to form hydrocyanic acid.

DRYING AND PRESERVING MILK (No. 21,617, of 1902).—J. R. Hatmaker, 4, Down Street, London. (Communicated by J. A. Just, 116, East Castle Street, Syracuse, New York, U.S.A.) Consists in preparing the milk by adding thereto a proportionate quantity of sodium phosphate or equivalent salt and, if necessary, a quantity proportionate to the amount of butter fat present of sodium hydroxide or equivalent alkali, drying the milk so prepared in an extended volume at a temperature not less than boiling water, and at atmospheric pressure, and then in removing the resulting solids from the region of high temperature whilst they still contain sufficient moisture to supply the requirements of the cooled material, and preventing the milk sugar or other constituents of the dried milk from deteriorating in the process of cooling.

MEANS FOR THE CURE OF SKIN DISEASES (No. 22,644, of 1902).—R. H. Gould, 1, Windsor Terrace, Whitley Bay, Northumberland. Relates to the cure of skin diseases; for instance, that known as lupus, by a new and improved method and apparatus. The method consists in submitting the diseased surface of the skin to the action of a vacuum, and applying a suitably medicated fluid to the surface in question, the substrata of which has thus become opened up, and therefore more susceptible to the action of the fluid. Such fluid is applied to the skin without in any way interrupting or diminishing the action of the vacuum. Suitable apparatus is described for carrying out the above method, which will produce, prolong, and vary in intensity the vacuum required, at the will of the operator.

SOLID SOLUBLE ANTISEPTIC (No. 23,460 of 1902).—B. J. B. Mills, 23, Southampton Buildings, London. (Communicated by La Société Anonyme des Produits Chimiques Spéciaux, 25, Rue Saint-Victor, Lyon-Monplaisir, France.) Relates to the production in a solid form (which shall be soluble in water) of formic aldehyde. Consists of a mixture of trioxymethylene and sulphite of soda. The proportion of sulphite is increased according to the desired solubility of the trioxymethylene.

LINIMENTS AND EMBROCATIONS (No. 25,112 of 1902).—E. Smith, The Kennels, Quorn, Leicester. Consists of an admixture in equal parts by weight of tincture of opium, chloroform, spirits of camphor, spirits of turpentine, soft soap, and soft water. Is intended for use in the case of cold, strains, sprains, bruises, rheumatic pains, swellings, and the like ailments, where outward application only is efficacious.

LINIMENTS AND EMBROCATIONS (No. 25,112A of 1902).—E. Smith, The Kennels, Quorn, Leicester. Consists of the following ingredients mixed in preferably equal proportions:—Oil of amber, oil of origanum (thyme), spirit of sal ammoniac, spirit of hartshorn, and spirit of wine, well shaken together. For use in the case of enlargements, strains and sprains, and other like ailments.

NOTE.—Opposition to the grant of any of the above patents must be lodged at the Patent Office, on or before November 16, 1903.

New Trade Mark Applications.

"**SAPOSILIC**" ("Sapo" disclaimed), for chemical substances used in manufactures and anti-corrosives in Class 1; substances prepared for preserving and disinfecting, etc., in Class 2; pharmaceutical preparations and medicinal soaps in Class 3; and perfumery and toilet articles in Class 48, by Chemische Werke Hansa Gesellschaft mit beschränkter Haftung, Am Bruggeweg, Hemelingen, near Bremen, Germany. 255,351-3 and 255,355.

"**ULMARENE**" ("Ulmaire" disclaimed), for a pharmaceutical preparation, by La Société Parisienne de Produits Chimiques (Société Anonyme), 4, Rue Chauchat, Paris. 251,557.

"**KING OF AMERICAN OILS,**" label, with signature. (Signature only claimed) for a medicine for human use, by F. Merritt, 11, Motley Street, Curtain Road, E.C. 255,335.

RUBENO, for chemical substances prepared for use in medicine and pharmacy, but excluding effervescent powders and ointments, by T. Stainton, 122, Oxford Road, Reading.

BROWNIES, for medicinal capsules, by J. Durant, Murray Road, Bedminster, Bristol. 256,332.

CITROLIA ("Citro" disclaimed), for medicinal and hygienic preparations, eucalyptus oil, etc., by the Tasmanian Eucalyptus Oil Co., Limited, 138, Leadenhall Street, E.C. 256,469.

LYFENE tablets ("Life" disclaimed), for medicinal tablets, by T. Winterburn, 14, St. Andrew's Villas, Bradford. 256,800.

ASEPTURIN, for a drug for human use, by R. Sumner and Co., Limited, 50A, Lord Street, Liverpool. 256,890.

CAVITINE, for chemical substances prepared for use in medicine and pharmacy, by J. W. Epps, 45, Craven Road, Paddington, W. 256,903.

KANGAROO AND LION DEVICE, for eucalyptus oil, by Australian Agency Association, Limited, 18, Gladsmuir Road, Upper Holloway, N. 256,990.

SOFSO, for perfumery, toilet articles, etc., by Lever Bros., Limited, Port Sunlight, Cheshire. 256,694.

VELCUTIS label, for a preparation for the skin, by J. G. Ross, trading as the Velcutis Antiseptic Co., 35, Slade Lane, Longsight, Manchester. 255,960.

ALBODONT, for tooth paste, by T. C. White, M.R.C.S. and L.D.S., 26, Belgrave Road, Pimlico, S.W. 256,760.

NOTE.—Opposition to any of the above trade marks must be lodged at the Patent Office, on or before November 7, 1903.

MARRIAGE.

Bowling—Cole.—On September 29, by the Rev. R. C. Roberts, Elizabeth M. Bowling, daughter of the late John H. Bowling, chemist, Pembroke Dock, to Charles H. Cole, A.M.I.C.E., Malta.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and 'Patent Notes for Inventors' free on application.

LETTERS TO THE EDITOR.

Barnard Simpson Proctor.

It was one of the most fortunate events of my life that I was apprenticed to the late Mr. Barnard Proctor—not only for the excellent training in pharmacy which I received, but also that for five or six years—during the most receptive time of life—I was in daily contact with a man of exceptionally fine qualities of mind and heart. I never saw Mr. Proctor in a passion, or in any manner ill-natured; he could be severe, very severe, but it was the severity of the judge: always balanced by justice. Although it may seem an ungracious thing to say—considering Mr. Proctor's services to pharmacy—I think he would have been a greater success and a greater power had he occupied the position of an editor of some paper or magazine worthy of his abilities, or as a free-lance in journalism, giving the world the benefit of his thoughts. There was an audacity and dash in his thinking, and the thoughts were conveyed in terse, nervous, vigorous English, enlivened by a particularly fine humour which compelled attention. He had the vision of the seer, the zeal of the reformer, and the passionate love of truth and justice of the old prophets. His mind was free from the fetters of tradition, his outlook unclouded by the mists of custom.

The following incident shows that I have not over-estimated the man. In October, 1891, Mr. Proctor read a paper at a trade meeting at Newcastle-on-Tyne. I was so struck with the whole thing that I sent it to my brother—at that time editor of one of the monthly magazines. He made free use of it, and in writing to me said, "I did not know you had a Carlyle in Pharmacy." During the Conference week at Bristol I saw Mr. Proctor in his pleasant home at Westbury, cared for and happily surrounded by his children and grandchildren. I did not anticipate that one of the last—perhaps the last—of the old guard of pharmacy was to be removed so soon. The world is better for the example of a man who, during a long and busy life, refused to allow his soul to be buried beneath the bricks and mortar of a materialistic commercialism. He has bequeathed to pharmacy the labours and the teaching of a lifetime. His family have had bequeathed to them the priceless heritage of a good name.

Godalming, September 30, 1903. J. H. Mather.

A Dispensing Question.

I had the following prescription handed in the other day. The quantity of extract being unusually large I had great difficulty in getting them turned out well.

℞ Hamamelin .... gr. iss.
Ext. Hyoscyam. .... gr. vi.
Ft. suppos. Tales xii.

Perhaps some of your readers will give their experiences.

September 26, 1903. "Senegæ" (96/18).

The P.J. Formulary.

I congratulate you on the success of your enterprise in publishing "Recipes." May I suggest to your readers that they file the pages as they appear on a "Stanley ("Stolzenberg") file, and they will find the formulæ then very handy for the desk?

October 3, 1903. "Kronos" (227/18).

Caffeine Salts.

Your note on caffeine salts is interesting. If caffeine citrate were merely a mixture we would expect that on treatment with chloroform the base would dissolve and the acid be, for the most part at least, left behind. On the contrary, the supposed mixture readily dissolves, and on evaporation leaves a crystalline residue. If this residue consists of homogeneous crystals, and not of crystals of caffeine alongside crystals of citric acid, the proof of the existence of a definite salt seems conclusive. That a weak base like caffeine should only form a monobasic citrate is not at all surprising. The alkaloids are often regarded as fairly strong bases, but with polybasic acids they scarcely exhibit that character. Strychnine only readily forms the mono-strychnine phosphate; the bibasic only forms by special persuasion, and tends to pass into the more stable mono-salt. The same occurs with others of the alkaloids. In the case of quinine, the dibasic phosphate is almost insoluble in water, a circumstance which favours its ready formation.

Edinburgh, October 3, 1903. D. B. Dott.

The West Riding Federation.

I am sorry that your correspondent, Mr. Gledhill, is so angry with me about a statement made at our annual meeting. I am inclined to adopt Mr. Chamberlain's well-known phrase, "What I have said I have said." At the same time, I wish most emphatically to disclaim any intention of saying or implying anything at all disagreeable, disrespectful, or annoying to any member (more especially, perhaps, my old friend Mr. Stead, who drafted the suggested rules) of the Association over which Mr. Gledhill has the honour to preside. With the more personal part of the letter I shall not deal. Mr. Broadhead's letter bears out my statement; my colleague at the Dewsbury meeting and I were very far from satisfied with the suggested scheme and rules, but, having proposed (I take his figures as correct) sixteen resolutions or amendments, I think, Sir, you will admit it would have been rather awkward to do much more in that line, and, without imputing any unfairness to the chairman, I still maintain there was a difficulty in getting amendments carried, as the two Bradford representatives were in a very decided minority on many occasions. My two friends have taken umbrage at a very innocent remark, made without any intention to wound the susceptibilities of either.

Bradford, October 3, 1903. Alfred H. Waddington.

An Explanation by Mr. Giles.

In reference to your courtesy in publishing my opinions as given to your representative, on the medicine stamp difficulty, I must apologise to you and your readers for omitting to point out that the Sanguinetti case has an even stronger bearing upon the question of the sale of unstamped proprietary medicines by persons other than chemists than the Glyn-Jones case, but as your readers are fully acquainted with the particulars in the case of Ransom *v.* Sanguinetti, I need not trouble you with full details, but simply ask the favour of a brief mention of the case.

London, October 8, 1903. Arthur J. Giles.

DEATHS.

Coates.—On September 24, Henry Coates, Chemist and Druggist, York. Aged 62.

Henry.—On September 26, Edward Laurence Henry, Chemist and Druggist, Lewisham. Aged 63.

Jenkins.—On October 1, Thomas Henry Jenkins, Chemist and Druggist, Stone, Staffordshire. Aged 67. Mr. Jenkins had been a member of the Pharmaceutical Society since 1899.

Walsham.—On October 5, at 77, Harley Street, W., William Johnson Walsham, F.R.C.S. Aged 56. Mr. Walsham passed the Minor Examination of the Pharmaceutical Society in 1866. He took the diploma of L.S.A. in 1870, M.R.C.S. in 1871, and M.B., C.M. (Aberdeen), in the same year. Mr. Walsham took the Fellowship of the Royal College of Surgeons in 1875, and was afterwards placed on the staff of St. Bartholomew's Hospital as surgeon and lecturer on surgery. He was the author of numerous books and articles on surgery.

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Labels (A. A.—96/34).—The labels you submit will not render the preparations liable to duty.

Softening Water (P. S. T.—96/30).—Use soda crystals, or a mixture of slaked lime, 1, and dried sodium carbonate, 2.

Waste Products (H. J.—97/7).—Your question is too vague. What "waste products" do you wish to know about?

Dentist (H. G. M.—96/31).—(1) An unqualified individual may not assume the title, but a company can do so. (2) We are not aware that there is any limit. (3) No.

Pyranum (W. A. B.—97/2).—It is also known as "pyrenol," and, as in the case of most other new remedies, you can obtain it from W. Martindale, 10, New Cavendish Street, London, W.

Non-Deposit Beer (C. G. P.—96/29).—Why not obtain a specimen of the material and examine it in order to ascertain whether it is fit to use for the purpose? We have no information on the subject.

Black Ink for Stamps (A. B.—97/6).—Water-soluble aniline black, 180 grains; acetic acid, 2 fl. drachms; alcohol (90 per cent.), 1½ fl. oz.; distilled water, 1¼ fl. oz.; glycerin, *q.s.* to produce 10 fl. oz.

Removing Hairs (S. E. A.—97/3).—(1) We have not seen the preparation. Try a depilatory such as the following: –Barium sulphide, in fine powder, 1; starch powder, 3. Make into a cream with water, spread on the skin, and remove with a blunt knife, after remaining for five or ten minutes.

Veterinary Work (S. R. B.—97/1).—There is nothing better for your purpose than the veterinary section of Beasley's 'Druggists' General Receipt Book' (Churchill, 6s. 6d.), and 'Veterinary Counter Practice' (3s. 6d. net), both of which you can obtain from H. Kimpton, 13, Furnival Street, London, E.C.

Oil of Rhodium (S. E. A.—97/4).—We are not aware that it possesses any peculiar medicinal properties. True oil of rhodium is rarely seen, what is sold under that name, as a lure for rats, being often nothing more than a mixture of rose oil with twenty times its volume of oil of sandal-wood, cedar-wood, or copaiba.

Indigo Plant (A. J. D. B.—97/8).—Your best course will be to apply for information to the Director of Kew Gardens. Probably, though this must not be taken as definite, Mr. J. H. Hart, F.L.S., of the Botanic Station, Tobago, Trinidad, could supply you. The rumour respecting the action of the Indian Government sounds improbable.

Labels (W. H. G.—227/24).—It is probable that you will be able to continue to sell the preparations unstamped if you register the formulæ in the 'P.J. Formulary,' and indicate that fact on the labels. But we are in communication with the Inland Revenue authorities on the subject, and hope to give you a more definite reply shortly.

Mixtures (C. B.—96/27).—(1) The change in colour is due to the presence in the mixture of free citric acid, which acts upon the scale compound. If the mixture be heated, the change in colour will probably take place at once, and you may thus prevent the patient from becoming alarmed. (2) Because they react to form some magnesium carbonate.

Recipes (E. W.—226/39).—(1) Disclosure of the composition of the articles, by publication of the recipes in the 'P. J. Formulary,' and indication of that fact upon the labels, will exempt them from liability to stamp duty, provided they have not previously been rendered liable apart from the special exemption, and you do not claim any proprietary rights in the preparations, on the labels or elsewhere. (2) The fact that the Inland Revenue authorities have agreed to recognise the 'Formulary' as a well-known book of reference should be a sufficient answer to your query.

Corrections.

Bell Scholarship.—At page 492, column 1, line 51, *for* "£30" *read* "£80."

Adulterated Milk.—In the report of a prosecution for selling milk containing boric acid, at p. 495 of last week's Journal, *for* St. Albans *read* Luton.

PUBLICATION RECEIVED.

Hardy Perennials. By D. S. Fish. Rural Handbooks, No. 9. Pp. 36. Price 6d. net. London: Dawbarn and Ward, Limited, 6, Farringdon Avenue, E.C. From the Publishers. This handbook is a companion to No. 8 of the series, "Propagating Plants," and gives all information necessary for selecting hardy perennials and for arranging flower borders, etc., with hints on labelling, staking, and watering; backgrounds for foliage, mixtures of bedding plants with perennials, etc., and lists of best plants.

Calendar for the Week (October 11—17, 1903).

Days of M	Days of W	Events of the Week.	Sun Rises	Sun Sets.
11	S	**Eighteenth Sunday after Trinity.**	6.18	5.17
12	M	Dewsbury and District Chemists' Association, at 8.30 p.m.	6.20	5.14
13	Tu	☾ Last Quarter, 7.56 p.m. Oxford and District Chemists' Association.—Opening Meeting of the Session.	6.21	5.12
14	W	East Sussex Pharmaceutical Association, at 8 p.m.—Opening Meeting. Manchester Pharmaceutical Association, at 7 p.m.—Annual Dinner. Newcastle-on-Tyne and District Chemists' Association, at 9 p.m.—Annual Meeting. North-East Lancashire Chemists' Association, at 9.15 p.m.—Annual Meeting. North Kent and District Chemists' Association, at 4 p.m.—General Meeting.	6.22	5.10
15	Th	Chemists' Assistants' Association, at 8.30 p.m.—"Social" Evening. Lincoln and District Chemists' Association, at 8 p.m. North Staffordshire and District Chemists' Association, at 6.30 p.m.—General Meeting.	6.24	5.8
16	F	Cambridge Pharmaceutical Association, at 9.15 p.m.—Annual Meeting.	6.26	5.6
17	S		6.27	5.4

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Amos, Andrew, Antcliffe, Armitt, Arthur, Atkins, Austin, Bailland, Barker, Bellamy, Bingham, Birkbeck, Blackburn, Bowling, Brauer, Butterfield, Campkin, Chatwin, Chell, Clarke, Coghlan, Croft, Dickinson, Dott, Downing, Duncan, Ekins, Eldred, Elstob, Fairweather, Ferrall, Finlayson, Gibson, Grace, Harrison, Izon, Jackson, Jones, Kent, Kirkby, Laverock, Minshull, Mollinson, Morrison, Norman, Park, Philp, Pinchbeck, Pinchen, Priestley, Rees, Richardson, Rigby, Robinson, Rollett, Rose, Ryley, Samuel, Saunders, Shillinglaw, Spence, Spencer, Stanley, Stooke, Summerfield, Summers, Swan, Swire, Thomas, Waddington, Walker, Walsham, Ward.

Telegrams "…NAC LONDON"
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Annual Subscription, 20s. Post Free; Single Copies, 4d. each, by Post, 4½d.

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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, October 15, 1903.

Chemists' "Recipes" are still being published in increasing numbers.

The Article on "Free Trade," by Mr. Thomas Tyrer, is concluded in this issue.

A Number of Scientific Articles of unusual interest from foreign sources are concisely abstracted.

Local Associations throughout the country have, during the week, freely discussed the medicine stamp question. The Manchester Pharmaceutical Association held its annual dinner on Wednesday night.

The Results of the October Examinations of the Pharmaceutical Society in Edinburgh show that there were forty successful candidates for the Minor and eighty three failures. The only candidate who presented himself for the Major was successful.

The Evening Meetings at Bloomsbury Square will in future be rendered more popular. Whilst preserving the scientific character of the gatherings, it has been decided to introduce several novel features, particulars of which are given elsewhere. The first meeting will be held on November 10.

Mr. R. Lord Gifford, in a speech to the members of the North-East Lancashire Chemists' Association, deprecated the dissipation of energy caused by a multiplicity of organisations, and referred to the benefits which have resulted from the increased influence of the Pharmaceutical Society in the provinces.

An Inland Revenue Concession is announced this week, as the outcome of representations made to the Board of Inland Revenue by the Editor of the *Pharmaceutical Journal*. It will now be sufficient to name the 'P. J. Formulary' on a label for a duly registered cough mixture or liver pill, without identifying the formula absolutely.

The Lay Press has been taking an increased interest in matters pharmaceutical. The *Daily Mail* has again discussed the drug habit, and *Truth*, the Editor of which reads his *Pharmaceutical Journal* to some purpose, commends to the attention of chemists and druggists the advisability of warning their customers against advertising quacks.

An Ironmonger has been prosecuted at Ayr (at the instance of the Pharmaceutical Society) for selling Cooper's Sheep-Dip in contravention of Sections 15 and 17 of the Pharmacy Act, 1868. On the local ironmongers, including defendant, giving an undertaking not to sell poisonous sheep-dips in future, the Society withdrew the charge.

At the Recent Meeting of the Council of the Pharmaceutical Society of Ireland, Mr. Johnston Montgomery, of Belfast, was elected President in succession to Mr. Beggs; Mr. W. F. Wells was elected Vice-President, and Mr. John Smith was selected as Honorary Treasurer. The other business was, for the most part, of a formal nature.

Mr. G. T. W. Newsholme has been elected President of the Sheffield Pharmaceutical and Chemical Society for the ensuing year. That Society will entertain Mr. Batty Langley, M.P., on the occasion of its annual dinner on October 29, when the President of the Pharmaceutical Society and the Lord Mayor of Sheffield will also be among the guests. Mr. Batty Langley is one of the members of Parliament who blocked the Pharmacy Bill last Session.

At To-Day's Drug Auctions the supply of goods was heavy and the sales continued until late in the afternoon. Senna realised full prices, higher rates were obtained for honey, and coca leaves were rather dearer. Aloes sold fairly well and cardamoms were again cheaper. Ipecacuanha was dearer and ergot was held at very high rates.

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MEDICINE STAMP DUTY—A CONCESSION.

Chemists and druggists will be pleased to learn that a further important concession has been made by the Board of Inland Revenue, in respect of what will be regarded as an adequate disclosure of the composition of "known, admitted, and approved" remedies, sold with a recommendation. The Board had previously intimated that medicines composed of drugs, the denominations, properties, qualities, virtues, and efficacies of which are known, admitted, and approved, may be sold unstamped by a duly qualified chemist and druggist, though held out or recommended for ailments, provided that either:—

(1) The names of all the active medicinal ingredients contained in the medicine are stated upon the label; or

(2) That the medicine is prepared in accordance with a formula in the British Pharmacopœia or other well-known book of reference, and this fact is stated or otherwise indicated on the label, in such a way as to enable the formula to be absolutely identified.

Neither of those alternatives, however, has entirely met the views of chemists and druggists. Exception has been taken to the first on the ground that the seller will thus be obliged to disclose the composition of the medicine to the public; the second plan has also failed to commend itself generally, because the chemist adopting it will be obliged to disclose his trade secrets to his competitors. In fact, while many chemists and druggists were fully prepared to disclose the composition of all their ailment-named remedies, others have protested that such disclosure ought not to be requisite. It appeared extremely unlikely that the Board of Inland Revenue would make any further concession in this direction, but representations on the subject have been addressed to the Board by the Editor of the *Pharmaceutical Journal*, and this week a letter has been received intimating that the Board has decided not to insist that such information should be given on the label as will enable the formula to be absolutely identified. The result of this latest concession by the Board is that, in the case of any preparation registered in the 'Pharmaceutical Journal Formulary,' it will be sufficient to indicate on the label, after the name of the medicine, that it is prepared in accordance with the 'Formulary.' Or, any existing label may be utilised, if a separate slip label be also used, bearing the words "Prepared according to the 'Pharmaceutical Journal Formulary.'" Presumably, the initials "P. J. F.," after the name of the article, will also be sufficient indication, but—if preferred—the letters "P. J. R.," followed by the registered number of the recipe, may be used on the label, as previously explained in the Journal.

The object of the concession which has now been made is to prevent the Board's change of practice from interfering unduly with freedom of trade, and it must be understood that the concession may be withdrawn if it should be found necessary in the interest of the public revenue. Meanwhile, however, chemists and druggists may congratulate themselves on the condition of affairs being virtually restored to what it was before the Board of Inland Revenue found that the decision in the case of Ransom *v.* Sanguinetti left no alternative but to regard such titles as "Cough Mixture" or "Liver Pills" as *per se* involving liability to stamp duty. The only difference is that, whereas a chemist's formula for cough mixture was formerly known only to himself, he must now disclose it to a certain limited extent. For example, if he chooses to disclose it to the Editor of the *Pharmaceutical Journal*, the formula will be published in the pages of the 'P. J. Formulary,' in such a way that no one can identify it except the person who sent it. The statement of the Board is very definite on this point, being worded as follows:—"As regards the case in which several different formulæ for a preparation appear in a recognised book of reference under the same name, the Board will not insist on a disclosure of the precise formula from which the preparation is made up." The only important point now requiring elucidation is the attitude of the Board with regard to the use of personal names—with or without possessive case endings—in the descriptions of compounded medicines, and definite information on that subject will be published shortly.

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THE CENTENARY OF THE PARIS SOCIETY.

On the occasion of the celebration of the centenary of the Paris Society of Pharmacy, which takes place on Saturday of the current week, the Pharmaceutical Society of Great Britain will be represented by its President, Mr. S. R. Atkins, whilst Mr. T. H. W. Idris will represent the British Pharmaceutical Conference. The celebration will take the form of a meeting in the afternoon, at which M. Léger will preside. After the presentation of addresses by delegates from various provincial associations, Professor Bourquelot will read a paper dealing with the origin of the Paris Society and its history from 1803 to 1824. In the evening a banquet will be held at the Continental Hotel. The English chemists resident in Paris propose to take advantage of the visit of the English delegates to France, and it is probable that these gentlemen will receive and present their compliments to the two Presidents at a suitable place of meeting. As a result of the Arbitration Treaty signed on Wednesday last, the relations between England and France are more cordial than ever. Pharmaceutically, the bonds will be drawn closer by the visit of Messrs. Atkins and Idris to Paris.

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CHEMISTS' ASSISTANTS AND ORIGINAL WORK.

At the opening meeting of the Chemists' Assistants' Association on Thursday, October 8, attention was directed to the fact that for several years past the members of the Association have made no serious effort to secure the practical prize offered each year by the Association. The conditions of the competition are by no means such as to debar the ordinary chemist's assistant from competing, the prize being offered "for the best pharmaceutical work done by a member of the Association during the previous twelve months . . . . original dispensing notes, improvement in apparatus or pharmaceutical methods, investigation of a drug, etc." Surely conditions with which almost every member of the Association could comply! Yet the fact remains that since the session 1896-97 there has been no competition for the prize, which, apart from the honour conferred upon the recipient, is one of the most valuable offered by any pharmaceutical association in Great Britain. This is regrettable because it would seem to show that, either assistants now lack that spirit of investigation which imbued the minds of pharmacists like the late Barnard Proctor and Dr. J. Wilson Swan, in their early days, or that the conditions of modern pharmacy prohibit the ordinary assistant from prosecuting original work.

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THE DISCOURAGEMENT OF QUACKERY.

The attention of *Truth* has been aroused by the exposure in the columns of this Journal (see page 450), of the methods of one Kidd, an advertising medical quack in the United States. *Truth* remarks that chemists and druggists are probably often able to warn their customers against placing themselves in the hands of "medical" charlatans, and calls special attention to a man who, under different names, is said to offer medical advice by advertisement from a number of south-coast watering-places. Our contemporary further comments unfavourably on a postcard issued to chemists and druggists by the Diabetes Flour Company, which offers to pay a sum of money in return for the names of persons suffering from diabetes. There does not seem to be any means of preventing this shady method of conducting business, but when the company finds, as it is to be hoped will be the case, that it has placed too low an estimate on the honesty of chemists, and that its post-cards are ignored, doubtless another mode of advertising will be adopted. The company will be consulting its own interests if its future advertisements are of a less objectionable character.

PHARMACEUTICAL MEETINGS IN LONDON.

IT has for some time been felt that the evening meetings of the Pharmaceutical Society in London have not attracted as large audiences as could be desired, and it may be remembered that in February of the present year a highly successful experiment was made, when an exhibition of pharmaceutical apparatus, together with two short lectures, illustrated by experiments and lantern-slides, attracted some three or four hundred visitors to the Society's headquarters. Profiting by the experience thus gained, the Evening Meetings Committee, which met on Wednesday the 14th inst., has decided to introduce, during the coming session, various changes calculated to arouse additional interest and to render the meetings more useful to a larger number of members of the Society than has always been the case. It is proposed that, as usual, one or more important papers dealing with pharmacopedics shall be read at each meeting, and that the scientific character of the gatherings may thus be maintained. But, in addition, short papers of a technical nature will also be welcomed. These may be read, or "taken as read" as time permits, publication in the official Journal of the Society following as a matter of course in either event. In addition, at each meeting, additions to the Museum and new books added to the Library will be specially arranged for the inspection of members after the reading of the papers, while at each evening meeting there will also be an exhibition of novel scientific apparatus and pharmaceutical appliances. Any such exhibit as may be of any particular interest may be exhibited a second time before the larger audience which may be expected to grace the general exhibition, which it is proposed to hold after the Annual Meeting of the Society in May next. The proposed changes will be accompanied by improvements affecting the social side of the meetings, and it is trusted that a greatly-increased attendance of members and friends may justify the hopes of the Evening Meetings Committee, which is endeavouring, by the means indicated above, to make the meetings appeal to the social tastes of those to whom the reading of a scientific paper is not *per se* a sufficient inducement to spend an evening away from home.

YEAST AND ITS MEDICINAL USE.

THE use of yeast as a remedial agent and food appears to be extending in various ways. Among food products several extracts are prepared as substitutes for meat extracts (see *P.J.*, October 10, p. 516), and sold under fancy names. They appear to be made by subjecting compressed beer-yeast to steam heat, filtering the liquefied product, and evaporating the filtrate *in vacuo*. Such extracts, which form the subject of an article by Dr. A. KWISDA in the *Oesterr. Zeitschrift für Pharmazie*, contain a large proportion of proteids (about 40 per cent.) and have a savoury smell and strong flavour. BUCHNER and GRUBER'S yeast proteid is made by subjecting purified yeast to the action of ether-vapour, which causes the exhalation of the nitrogenous cell contents, and these are separated by filtration from the cell remains. The filtrate, diluted with water, deposits the coagulated proteid when the liquid is heated. Yeast has recently been recommended as a remedy for a variety of ailments, various forms of skin disease, smallpox, anthrax, and gastric complaints. It may be used as fresh yeast or in the dried form. Zymin is a variety of dried yeast produced by dehydrating yeast by means of acetone, which is stated not to reduce the activity of the yeast enzymes to which part of their curative properties are believed to be due. Other varieties of yeast preparations are produced by growing the organism in culture media containing iron or arsenic, these elements appearing to be taken up by the yeast cells in some form of organic combination. Such yeast, after being transferred to successive media containing increasing proportions of iron or arsenic, is finally separated and dried. The nuclein of yeast has also come into commerce under the name of nucleol, and combinations of this with copper, mercury, silver, or iron are known respectively as cuprol, mercurol, nargol, and ferrinol.

THE SALE OF POISONOUS SHEEP-DIPS.

THE sale of proprietary and poisonous sheep-dips by unqualified vendors was recently the subject of legal action in Ireland, where, after a preliminary failure caused by a misunderstanding on the part of the magistrate of the meaning of the term "patent medicine," two convictions were secured by the police, acting on behalf of the Pharmaceutical Society of Ireland. Last week a case was called at Ayr (see page 562), where proceedings had been initiated by the Registrar of the Pharmaceutical Society of Great Britain, against an ironmonger of Girvan, for a breach of those provisions of the Pharmacy Act, 1868, which restrict the sale of poisons to registered persons and require the observance of the statutory precautions in the sale. Cooper's Sheep-Dip was the preparation which had been sold. The case came to an abrupt but quite satisfactory termination, all the ironmongers of the town, including the respondent, having given an undertaking that poisonous sheep-dips would not be sold by them in future. It is to be hoped that the example set by the ironmongers of Girvan will be followed elsewhere, and that the futility of "kicking against the pricks" may be generally recognised. It is interesting to refer to the evidence given before the Committee on Poisons by the Secretary to the Scottish Chamber of Agriculture, who thought that it was contrary to common sense to suppose that an ironmonger who dealt in poisons would be more apt to injure the public than a chemist. When Mr. CONNELL is able to show that chemists and druggists sell arsenical sheep-dips to unknown persons without labelling the poison with the name and address of the seller, and without making an entry of the sale or taking a signature, his remarks may have more weight than can now be claimed for them by even the most interested of would-be poison-sellers.

TO LOCAL ASSOCIATIONS.

A CORRESPONDENT of the Journal is prepared to offer to a local association, preferably in the eastern counties, a complete series of the earlier volumes of the *Pharmaceutical Journal* and of the 'Year-Book of Pharmacy.' He wishes the volumes to be of use, and for that purpose shelf-room should be provided. The difficulty of providing permanent accommodation has already prevented one local association from availing itself of the kind offer of our correspondent. Secretaries of any association to whom the gift would be welcome should communicate in the first instance with the Editor.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Characters of Chaulmoogra Oil.

Hirschsohn has examined chaulmoogra oil obtained from the seeds by cold pressure, by warm pressure, and by extraction with petroleum ether, and compared it with commercial oils. Only one sample out of four agreed with the genuine oil. He gives the following as characters of genuine oil:—Iodine number from 96 to 99; saponification number 198 to 210; melting point 26° to 29° C.; it should give a clear solution with 83 per cent. carbolic acid, and a somewhat cloudy one with acetone.—*Pharm. Centr.*, **44,** 627.

Purification and Determination of Iodine.

The method of iodine purification used by Stas in his researches on the atomic weight of iodine consists in dissolving iodine in a solution of potassium iodide, precipitating the iodine with water, drying over calcium nitrate, and subliming the dried mass. A. Goss, as a result of experiments with this and other methods, concludes that the Stas method, above described, gives the purest iodine. He thinks, however, that sulphuric acid is the best drying agent, although the iodine is not contaminated when dried over calcium chloride. The iodine, when pure, may be satisfactorily determined by converting into zinc iodide and titrating with silver nitrate, potassium chromate being used as an indicator.—*Journ. Amer. Chem. Soc.*, **25,** 987.

Determination of Bismuth as Molybdate.

H. S. Riederer suggests, as preferable to the usual method—precipitation as basic carbonate—a method of volumetric determination for bismuth, by making use of the molybdate. When a solution of ammonium molybdate in nitric acid is added to a nitric acid solution of bismuth nitrate and the whole is neutralised with ammonia, all the bismuth is precipitated as a molybdate in a finely flocculent form. The precipitate, after heating and washing with ammonium sulphate solution, is dissolved in dilute sulphuric acid and run through a Jones reductor with suction; after this, it is strongly acidified with sulphuric acid and immediately titrated with standard potassium permanganate. A number of details in manipulation require to be observed; for these the original paper must be consulted.—*Journ. Amer. Chem Soc.*, **25,** 907.

Viscosity of Soap Solution in Oil Analysis.

H. C. Sherman and Herbert Abraham have determined the viscosities of solutions of the potassium soap of several vegetable and a few animal oils. They find that olive and almond oils yield soap solutions of considerably greater viscosity than those obtained from the other more common fatty oils. The "viscosity figure" is apparently higher in the better than in the poorer grades of olive oil. The lowering of the viscosity figure by admixture of other oils furnishes an additional method for the detection of adulteration in olive and almond oils, and will be specially useful for the detection of lard oil. The characteristic high viscosity figure of olive or of almond oil may be largely lost on sufficiently long exposure of the oil to air at ordinary temperatures. The explanation of the high figures shown by olive and almond oils is thought by the authors to lie in the quantitative relations of the fatty acids present rather than in the presence of any peculiar constituent.—*Journ. Amer. Chem. Soc.*, **25,** 977.

Fractional Separation of Petroleum Hydrocarbons.

K. Kharitchkoff has compiled a brochure on the separation of petroleum hydrocarbons in a cold state by means of alcohol. The work appears as a supplement to the *Neftiannae Dielo*, and is being reproduced in a series of articles in the *Petroleum Review*. It is possible that the process described may lead to many new applications of petroleum hydrocarbons which hitherto have been practically unknown.

Oil of Datura Stramonium.

J. W. Baird and F. Sleeper have determined the physical and chemical constants of this oil. The following figures are given:—Yield of oil from seed, 32 per cent.; sp. gr. at 15° C., 0·9199; iodine number (Hübl's), 109·1; Koettstorfer number, 194·02; saponification equivalent, 288·8; acid number, 3·307; solidifying point, −19°. Exposed to the air at room temperature, the oil did not change in forty-four days, nor indeed when heated at 50° for thirty hours, but it dried to a varnish when heated at 100° for twenty-four hours.—*Proc. Amer. Pharm. Assoc.*, 1903.

Rubber Plaster.

For an adhesive rubber plaster, made without machinery, C. S. N. Hallberg recommends the following formula:—

Rubber, cut in small pieces	20 Gm.
Petrolatum	20 Gm.
Lead Plaster	960 Gm.

Melt the rubber at a temperature not exceeding 150° C., add the petrolatum, and continue the heat until the rubber is dissolved. Add the lead plaster to the hot mixture, continue the heat until it becomes liquid, then let it cool and stir until it stiffens.—*Proc. Amer. Pharm. Assoc.*, 1903.

Colorimetric Determination of Potassium.

L. A. Hill suggests a colorimetric method for the determination of small quantities of potassium. The method is fitted primarily for use in the analysis of soil extracts and drainage waters, or in other cases where gravimetric methods are impracticable. The method depends on the precipitation of the potassium in the usual way with chlor-platinic acid, and the subsequent reduction of the potassium chlor-platinate with stannous chloride in the presence of free hydrochloric acid. A distinct colour is imparted on adding the latter solution, even though the original solution contains not more than one part of potassium oxide per million.—*Journ. Amer. Chem. Soc.*, **25,** 990.

Preparations of Cannabis Indica.

L. W. Famulener and A. B. Lyons, as the result of the application of exhaustive physiological tests, have come to the conclusions that the only preparations of cannabis indica which can be recommended are the fluid extract and the extract. Both of these are stable preparations, and if made of fresh Indian hemp of good quality, are to be depended upon. The tincture is probably equally stable, but it contains a needless amount of alcohol, and presents no advantage whatever over the fluid extract. None of the preparations which purport to represent in concentrated form the activity of cannabis can be recommended. Most of them are practically inert. The few that have activity are relatively far more costly than the official preparations. Powdered preparations of cannabis indica are too easily oxidised to be of any value. Most of them are nearly inert. The only method known for determining the relative strength of preparations of cannabis is the physiological method. This method is capable of yielding quantitative results sufficiently exact for all practical purposes.—*Proc. Amer. Pharm. Assoc.*, 1903.

Solubility of Picric Acid in Ether.

J. Bougault finds the statement met with in works of reference, that picric acid is more soluble in ether than in water, to be incorrect. The solubility in anhydrous ether, sp. g. 0·721, does not exceed 1·08 in 100 volumes at 13° C., whereas its solubility in water is about 1·2 : 100. The solubility greatly increases, however, with the hydration of the ether; when that solvent has the sp. g. 0·725, 100 volumes dissolve 3·68 parts of picric acid, and at the sp. gr. 0·726, 4·0 parts. It is curious that the solution in anhydrous ether is colourless, while that in ordinary ether is of an intense yellow colour. From this it follows that picric acid affords a ready and convenient test for the freedom of ether from water. If the acid imparts no colour, the ether is anhydrous, and from the depth of colour obtained with ether containing water an approximate idea of the degree of hydration may be obtained. This reaches its maximum with ether of the sp. gr. 0·725.—*Journ. Pharm. Chim.* [6], **18,** 116.

Kilangit.

A fish poison bearing this name, and used in the Indian Archipelago, has been examined by H. W. Bettink and J. L. Heyl. The plant yielding it is supposed by Dr. M. Greshoff to be *Polyscias nodosa*, an Araliaceous plant, but it is possible that more than one plant is used under this name. The leaves are usually reduced to coarse powder and mixed with wood ash and then thrown into the water. The leaves contain a body having the physical characters of a saponin, and when treated with dilute acid afford a sapogenin insoluble in water. This, with sulphuric acid, gives a purple coloration, which, in contact with bromine vapour, becomes violet. The leaf-stalks do not appear to contain any appreciable quantity of saponin.—*Pharm. Weekblad*, **40,** 591.

Occurrence of Saccharose in Plants.

By observing the action of invertin on the sugar-containing portions of various plants, E. Bourquelot has been able to demonstrate the presence of saccharose in fifty-seven species. Since invertin causes the hydrolysis of certain polysaccharides, such as gentianose, raffinose, hexotriose, and hexotetrose, when these bodies are present the observed rotation, after inversion, will be higher than is theoretically required for saccharose. Thus, invertin transforms one molecule of saccharose into a molecule of levulose and glucose; gentianose into levulose and two molecules of glucose; raffinose into a molecule of glucose, levulose and galactose, and so on. Invertin may, therefore, be considered a specific reagent for saccharose either free or combined; but, when combined, the observed rotation of the inverted sugars will be higher than the theoretical requirements for a simple molecule of saccharose. From these data the presence of cane-sugar has been demonstrated in the fresh subterranean parts of the following plants:—*Medicago sativa*, *Pæonia officinalis*, *Tamus communis*, *Gentiana lutea*, *Neottia nidus-avis*, *Colchicum autumnale*, *Orobanche cruenta*, *Carum bulbocastanum*, *Scrophularia nodosa;* in the fresh bark of *Betula alba* and *Fraxinus excelsior;* in the fresh herb of *Pellia epiphylla;* in the fresh male catkins of *Alnus glutinosus;* in the fresh pericarp of *Cocos yatay* and of *Amygdalus communis;* in the dried fruits of *Phellandrium aquaticum*, *Coriandrum sativum*, *Carum carui*, *Petroselinum sativum;* and in the dried seeds of *Asparagus officinalis*, *Ruscus hypoglossum*, *R. aculeatus*, *Convallaria majalis*, *Schœnocaulon officinalis*, *Allium cepa*, *A. porrum*, *Asphodelus ramosus*, *Tamus communis*, *Cocos yatay*, *Chamærops excelsa*, *Areca catechu*, *Erythea edulis*, *Astrocaryum vulgaris*, *Œnocarpus bacaba*, *Sagus rhumphii*, *Phytelephas macrocarpa*, *Pæonia officinalis*, *Myristica moschata*, *Sterculia fetida*, *Ricinus communis*, *Hydnocarpus heterophyllus*, *Tropæolum majus*, *Pistacia vera*, *Ervum lens*, *Ceratonia siliqua*, *Trigonella fœnum-græcum*, *Gleditschia triacanthos*, *Medicago sativa*, *Melilotus leucantha*, *Medicago lupulina*, *Amygdalus communis*, vars. *dulcis et amara*, *Aucuba japonica*, *Anamirta cocculus*, *Strychnos potatorum*, *Cucurbita maxima*, and *Sesamum indicum*. The following plants showed the presence either of saccharose accompanying polysaccharides or of those complex bodies which yield saccharose to the action of invertin:—*Helianthus tuberosus*, *Loroglossum hircinum*, *Allium cepa*, *Ficaria ranunculoides*, and *Hibiscus esculentus*.—*Journ. Pharm. Chim.* [6], **18,** 241.

New Form of Micro-Balance.

The micro-balance exhibited by Professor Nernst at the Berlin Congress is described in a recent number of the *Berichte*, and a number of results are given which illustrate its remarkable sensitiveness and accuracy. The control is a stretched quartz fibre, and the pointer moves over forty small divisions, each of which represents 0·03763 Mg., and can be read to a twentieth part. The scale pan is a tiny platinum tray weighing only 20 Mg., and in this the analyses are carried out. Three analyses of calcite, in each of which less than 3 Mg. was taken, gave CO_2 = 43·80, 43·66, and 43·81 per cent., theory 43·96, and the ignition of a single milligramme of yttrium sulphate gave the atomic weight as 88·0 and 87·8, theory 89. The balance is specially suited for the analysis of traces of rare earths, and an attempt was made to carry out a fractional distillation of the chlorides of yttrium, erbium, and ytterbium in a platinum tube, but analysis showed that the sublimate had the same composition as the residue. Even where considerable quantities of material are available, as in the analysis of the salts of organic acids, the use of the micro-balance would lead to a great reduction of time and trouble, as it would only be necessary to read the deflection before and after igniting a trace of the salt. The balance, in a portable form, is manufactured by Messrs. Spindler and Hoyer, at Göttingen, and is sold at 70 marks.—*Nature*, **68,** 421.

Aluminium Succinate in Orites Excelsa.

In a communication to the Royal Society of New South Wales, H. G. Smith records the occurrence of large quantities of aluminium in one of the "silky oaks," *Orites excelsa*, N.O. Proteaceæ, which is plentiful in New South Wales and Queensland. A section of the tree, three feet in diameter, was found to contain a large deposit of basic aluminium succinate, $Al_2(C_4H_4O_4)_3Al_2O_3$. The ash of the wood furthest removed from the deposit contained 79·61 per cent. of alumina, a larger amount than has been previously recorded in any of the Cryptogams, in which alone aluminium has been supposed to occur. This specimen was exceptionally rich in the aluminium salt, but the amount of alumina in the ash of three other specimens was found to range from 36 to 43 per cent. A large proportion of the alumina was present as potassium aluminate, and as no potassium carbonate was found, it is probable that the potassium aluminate exists, as such, in the tree. In the ash of one specimen from Mullimbimby, cobalt and 3 per cent. of manganese were found, so that probably cobaltiferous manganese occurs in the district. Free normal butyric acid was found to accompany the deposit of aluminium succinate; from this the succinic acid is probably formed by oxidation, and then combines with the alumina to form the basic succinate. The ash of *Grevillea robusta*, *G. hilliana*, and *G. striata*, was found not to contain alumina. The previously recorded occurrence of alumina in the ash of these trees is probably due to the wood examined, erroneously attributed to them, being derived from *Orites excelsa*.—*Chem. News*, **88,** 315.

PERSONAL VIEWS ON CURRENT TOPICS.

Some Reflections on "Free Trade."—2.

BY THOMAS TYRER, F.I.C., F.C.S.

Imports of Manufactories.

"Free Trade" is not only a sentiment, or an idea, but a *force*. That is, so far as it involves the principles of freedom and equalisation. If conditions are one-sided there cannot be either Freedom or Free Trade. It may be worth considering what would happen should free-er trade or any approach to "retaliation" result from the present fiscal controversy. First, it is highly probable that foreign manufacturers whose export business would be threatened by the adoption of such a policy of free-er trade within the Empire would establish their industries in this country. Their experience would be ripe, their machinery and plant maturely thought out, their staff of managers, chemists and labourers complete and efficient. An alien tax would not, however absurd or high, prevent their immigration. German workmen would probably set an example to ours for at least an appreciably harmful period of steady, quiet, and sober industry. Their saving habits might, under the influence of British freedom and unrestraint, result in a measure of independence, for it must be remembered that Germans are not against military service. It is doubtful in which country those savings would be invested, the Fatherland or Britain; at any rate, years would pass before any appreciable change in life or associations would be effective from the British standpoint. This is seen daily in the attitude of those who have already settled here. Would anything from the labour point of view be gained? Or from the managerial or scientific aspect? Money would circulate, but, as certainly as there is now disturbance in the political atmosphere, so certainly would the profits, whether taxed for income or evaded, go to the home of the maker. One must not be surprised at this result, since where tariffs have been raised against British products, British manufacturers in not a few cases have similarly established works abroad within the ring fence of Protection to the detriment of British labour in two ways; one, by displacement here, and using cheaper and equally efficient native labour where they have gone. The chances are in the reverse case that the foreigner would bring his more disciplined labour with him. In the wood-distillation, tar, alkali, anilines, silk, cotton and steel and iron industries, factories and mills have followed the trade, not the flag, or the "brains." This has received an illustration this week—where British potters are setting up works in Germany, Russia, and even America to avoid competition. Now, it will be no surprise to learn that (illustrating Sir Wm. Ramsay's statement at the Bradford meeting of the Society of Chemical Industry in July as to the secret organisation of commerce in Germany) provisional detailed arrangements exist to do what is considered applicable to its needs.

Defensive Organisation.

Sir Wm. Ramsay's speech may usefully be quoted as a stimulus and warning:—"It would be remarkable if, having succeeded so well in their military organisation, no attempt was made to establish a similar commercial organisation; and we should not go wrong if we were to assume that there was a council which took into consideration the statistics obtainable and as far as possible legislated, or endeavoured to legislate, upon the basis of these statistics. Where fiscal duties were found to be wanted, such a council would put them on. Where there was an advantage in taking them off, they would take them off. Where cheap transit was possible they would let it be given, for the railways and canals were the property of the State. Was it to be expected that any country could fight such a combination as that without adopting, at all events, something of their methods, or without studying those methods, and without combining together, if not to imitate them, at all events to thwart them? Russia was imitating Germany. Her chief work was now to develop her home industries. By inviting foreign capital and offering facilities for the foreigner to start commercial enterprises in Russia, and these were heavily protected, enormous production would result and exportation take place. Enterprises of this nature must go on. Was Great Britain to be the last to follow? They ought to take very serious counsel with themselves as to what policy should be pursued. The policies of foreign nations forced a serious question upon them. There was a military campaign against them, and they had to defend themselves."

The Differentiation of Manufactures.

This is a contingency to prepare for so far as is possible, but are our experts, our young chemists, our labourers equal to the task, if even our capitalists are? In some cases emphatically yes, in others, and too numerously, equally emphatically no. Heads without eyes and ears, bodies without hands or feet are odd fighting machines. It is, therefore, a question of time, while late convictions take the form of adaptation to pressing needs. So we welcome those who shelter under our friendly "umbrella," pending their gradual absorption into freedom's home. By the way, they ought to be "registered," if not taxed, and made in all respects to conform to the laws of the country, and be compelled to take out letters of naturalisation, if only for business reasons. The German agent here need not be alarmed. He has his clients, and if he cannot sell German goods, he may British, and he will. He never throws up the sponge. All this assumes that tariffs will be raised on at least some portion of manufactured imports. Enormous difficulty awaits the statesman or any board or council which attempts the task of scientific and sensible discrimination. It would be comparatively easy to discriminate between raw products for manufactures and manufactured goods not yet nor likely to be manufactured in Great Britain, and those manufactured in the country. But what about half-manufactured goods? Mr. Levinstein, in his Bradford address, referred to our position as vendors of half-manufactured goods to Germany. Take the case of tartars or argols, lime citrate and lime juice for instance, bismuth, silver, gold, antimony, metals, and semi-purified products from regions where complete economical purification is impossible. Instances occur to everyone. What about paper and wood pulps? Are "treated" salad, castor, cod liver oils to be classified as manufactured or semi-ditto? Some degree of treatment, for economic reasons, must be given. Shall these be appraised as "raw," or "half," or what? To anyone who peruses American trade journals or the reports which appear from time to time in, say, the *Board of Trade Journal*, it will be evident that due weight must be given to these considerations. Great weight, too, first, because of their serious relation to free industrial application and progress, and, secondly, because of their influence on revenue. Great differentiation and variety will inevitably mean great expense in collection of revenue and repetition of daily disputes such as occur in the United States, and, indeed, in every country where tariffs on imports are levied. If the duties are light, the cost of collection will be disproportionate to the gain; if heavy, then the supine, indolent and unenterprising will fail to raise the standards of home efficiency. In 1829 enormous import duties, almost equal to present values, were levied, yet British manufacturers were few comparatively and sparse to a degree. (See our contemporary, *C. and D.*, October 3, "Duties in 1819.") Foreign competition will still be benefited, unless the margin between the preference on British goods is made much larger than has yet been proposed and the British producer wakes up, in fact and in deed.

Equalisation.

A possible consideration may be put forward as a "sweet morsel" to the thoughtless. What would be the effect upon themselves of removing industries from Germany or Russia here? Certainly, to the extent that they produced for sale in Great Britain or the Empire, the profit would be untaxed as regards those countries, in which all profit is taxed, it is stated, from servant girls' wages upwards, and so lost to those nations. The circulation of money from wage-earners and staffs being here would seriously diminish there. These, to say the least, are not insignificant considerations, and will not have been overlooked by the astute ones in that great secret commercial council of organisation in Berlin, to which Sir Wm. Ramsay referred. No, the very threat of equalisation, hopelessly, perhaps, now as regards real Free Trade, or hopefully, possibly, in the direction of Reciprocity, Bargaining, or vile Retaliation, will give pause to many. Again, one may urge "readiness." Probably two or three years will be required to effect anything on well organised lines, yet how very much could be done towards equipment by all concerned in that time against the "great" day? It is worth considering, after the recent declarations of "the" leader, what some facts mean. It is stated that if a duty was placed on imported manufactured goods to the extent of one-half those placed by America on some of our goods a revenue of £40,000,000 a year would accrue. That statement is accompanied by another—"or the equivalent in further wages for our workers." Is this, on the face of it, a certain inference? Again, while our wheat acreage is only about *one-third* of what it was in *1851*, we paid out of income £58,000,000 for imported cereals alone! Why only one-third? With all the defects of our land system and transport, justice demands the admission that they both are vastly improved. The real root of the matter is the reluctance to adopt thoroughly out and out scientific modern methods and machinery. The great need, of course, is new or enlarged markets (better still, open ones). If these are not forthcoming at home and within the Empire, and by multiplication of the race, there will be little increase in consumption without increased consuming power. President Roosevelt has strong opinions on the value of population. If we are squeezed out by competition, and where areas are closed one after another by our competitors, the question of population and all affecting it will assume serious proportions. This fiscal question, as it at present stands, involves after all that traders, irrespective of consequences, may take advantage of low prices, and, broadly, it is true that the lowest are obtainable for foreign goods. Under this system, capital invested in home industry suffers, labour suffers, and, assuming no bounties on imported goods existed, possibly things might be equalised. They, however, do exist, and will continue to exist so long as the balance of political parties abroad remains anything like it is now, and so "dumping" of surplus products into this country will go on. "Dumping" does not necessarily involve loss to the "dumper," yet it may, and does, involve loss here. Will an import duty of ten per cent. sufficiently protect the British producer? It is doubtful. Are we, then, to really become "a nation of shopkeepers"—of mere dealers? That contemplation is to an extent bearable, if we did the carrying and transport, with the consequent building repairs, and industry related to transport, and created by it.

Preference, Reciprocity, and Alcohol Duties.

Then we have the "Preferential" proposals, by which the Colonies are to admit British goods at lower duties than foreign. This is obviously a question of margins—*vide* America and Canada, under which Canada gains by American goods. Then Britain is to admit Colonial corn at a lower duty than foreign. Why not free? Again, under this system, a tax (10 per cent., they say) on foreign manufactured goods. Think of the machinery of collection and precaution against fraud. Remember "piano" cases full of rifles (see Dr. Thorpe's report on sundry "semolina" imports). Then there is the "Reciprocal" proposal, which is defined as "no tax on foods of any kind." Imposition of duties on imported manufactured goods, *just to keep the markets for British labour without handicapping the labourer in any way.* Not one of the proposals will work smoothly, and disturbance will prevail for many a day. Again, one urges equalisation and readiness. One naturally thinks of what one wishes most, and while one does desire a sounder, deeper education and a more serious spirit of mental acquisitiveness among responsible workers, one is compelled to demand for chemists relief as to the working of patents and transport, and almost before all, relief as to spirit suitably denatured. Let any reader—and all are competent—make out a list of half-manufactured products imported, and also those in which alcohol is molecularly contained, and of those to the manufacture of which alcohol is a necessity. He may leave out of consideration the enormous quantities of organic colouring matters—which may be classed by themselves, some idea of which the writer gave in his paper on Spirit before the Society of Chemical Industry in June. Your columns might usefully be open to such lists, and one suggestion is made for your invitation for such a list, especially in view of the determination to press the denatured alcohol for technical purposes at an early date. This very question illustrates an absurdity in fiscal politics. Rebates are now given on certain saccharine substances used for the production of spirit. Why? To free raw material? Then there is and to spare of at least one raw material for this purpose which at certain seasons can be had for all but the asking. What would be thought and said, not to say done, if Germany or another Continental nation exported here potatoes, or even beet, and both *could* be so treated, being regulated as to growth. Dates have not been tabooed. Why should anything? Nothing should, unless and until our own resources are unequal to manufacturing needs. One reads of that distressful island—so distressful all the same that it can govern us, as things are. Yet no potato nor beet is grown from an industrial point of view. Have potatoes ceased to have value for starch? Have they no value as a source of industrial alcohol? The story is propagated that potable stuff cannot be made from potatoes. Well, let industrial stuff be permitted. Oh! the pity of it, that in some important respects we have not got free trade even within our own borders. The great and critical question of the hour is many-sided, and one must be wary of the "mazing" jugglery of figures and look to principles. These may be fairly disputed, but it can scarcely be denied and reiterated again and again that, whatever the decision of the country through its accredited representatives, our own weapons of defence—not attack—must be sharpened on the grindstone of necessity, experience, education, industry, and the strenuous cultivation of all our resources. May one to-day refer to the position of the cotton trade in Lancashire, the home of Free Trade? No better illustration of the 1862 motto in your last issue is needed. The Empire in three of its great divisions can grow good cotton. Why should capitalists have waited till famine stares us in the face? Why should any Government claiming any paternity have left alone to private initiative these sources? No need to tax American cotton at all; only encourage our own lands—Africa, Australia, and even Egypt. Again one repeats that the only solution of the enormous difficulties of fiscal adjustment is universal Free Trade, but admittedly that is "Utopian." It is argued that "if we may protect ourselves against the hired soldiery of a foreign power acting aggressively, we may protect ourselves against their cheaper labour acting in the workshop. It is the highest absurdity to say that we may protect ourselves by armies, but must not by commercial regulations. If we can rightfully guard our commerce by our navy, we can do it by legislative restrictions." Excellent, granted the premiss!!! Why not abolish all armies, all warlike navies, all tariffs?

Freedom, while now an idea, a grand sentiment, is yet a "force," and before another century wanes will have its ascendant star in every department of human energy and enterprise. Mr. Chamberlain has spoken. He has not "juggled." His figures can or cannot be disputed, but one thinks he has more than made out the case for *full inquiry*, and happily he has clearly, but very briefly, adumbrated Free Trade Within the Empire!

THE RATIONALE OF PHOTOGRAPHY (3).

BY C. F. TOWNSEND, F.C.S.

Metallic Printing Processes.

In making a positive print or picture from the negative, it is again the sensitiveness of the haloid salts of silver which comes to the aid of the photographer. To a large extent it is almost accidental that the usual process of exposing a plate in the camera and developing yields a "negative." As I shall show directly, when using iron salts instead of silver, the obtaining of a positive or a negative depends upon a very slight modification of the method employed. If the ordinary negative be coated on the film side with black varnish, you have at once a positive, for the silver deposit which, when viewed by transmitted light, appears black, now reflects lights, and appears white, whilst the varnished background shows through the interstices between the silver particles as black. This process is much used by the itinerant "as you are for ninepence" photographer, to obtain a positive in a few moments. After coating the negative with black varnish to convert it into a positive, the operator on Margate or Hastings sands then clips a little metal frame round the edges of the glass, and there is his picture, neatly framed and glazed.

Silver chloride and bromide are the principal salts used in making printing papers, although the citrate must not be left out, as it plays an important part in the so-called gelatino-chloride, or printing-out papers. The ordinary sensitised, albuminised paper is first coated with egg albumin, to which ammonium chloride has been added. Shortly before use it is sensitised by floating the paper upon a solution of silver nitrate. A somewhat complicated reaction ensues, the silver being partly converted into silver chloride and partly into albuminate. This albuminate is reduced by light in a similar manner to the chloride, so that, before washing and toning, the paper which has been exposed in the printing-frame shows a picture which consists of a mixture of silver photo-chloride and reduced silver albuminate. These reduced compounds give a wide variety of colours, ranging from pale lavender or flesh colour, through red to a deep bronze hue. The silver albuminate is very insoluble, and diffusion does not take place readily between the salts entangled in this leathery compound and the water in which it is floating. Consequently a somewhat prolonged washing is necessary to rid the print of the last traces of "hypo" after fixing. As the tint of the reduced silver compounds is not a very pleasing one, the paper is toned with gold. In this case a process of electro-deposition occurs. Gold is deposited from the alkaline solution of chloride of gold, silver being dissolved in its place, and a toning bath which has been in use for some little time contains quite a notable proportion of silver. It is necessary before toning to wash the print free from all unreduced silver salts, as these would cause toning to take place generally all over the print.

Gelatino-chloride paper and the very similar collodio-chloride papers are coated with emulsions of silver chloride and silver citrate in either gelatin or collodion. Alpha paper is practically a gelatin emulsion of silver citrate. These papers are treated in much the same way as the ordinary albuminised paper, but the gold toning bath for the former contains ammonium sulphocyanide, instead of sodium acetate, which is the usual salt employed with the so-called gold chloride in the toning bath used for albuminised paper. It should be noted that the sulphocyanide dissolves gelatin, and for this reason it is not advisable to increase the strength of this salt in the toning bath beyond the amount usually recommended in the manufacturer's formulæ. In these solutions almost any alkali can be used which will not immediately reduce the gold, and in addition to sodium acetate and ammonium sulphocyanide, sodium bicarbonate, carbonate, tungstate, and borate (borax) are sometimes used. As I have explained above, "toning" is really a process of electro-deposition or electrotyping, and gold is therefore not the only metal which can be used for this purpose. Theoretically, any readily reducible metal can be employed, but the only ones which are used in practice, besides gold, are platinum, palladium—very occasionally—and lead. In the case of platinum a very weak solution of potassium chloro-platinite, to which a few drops of nitric acid have been added, is the bath employed. Some photographers adopt the very objectionable method of using a combined toning and fixing bath—that is to say, after washing the print free from excess of silver chloride they immerse it in a solution containing ammonium sulphocyanide, sodium thiosulphate ("hypo"), and gold chloride, with sometimes other constituents. In this bath the print is supposed to tone and fix at the same time, and it does so; but as there is nearly always a certain amount of free sulphur present, owing to the decomposition of the hypo, the greater part of the "toning" which takes place is frequently due to the formation of silver sulphide rather than to the deposit of any gold, and such a bath will apparently go on toning beautifully long after every particle of gold has been removed from the solution.

In regard to this question of fixing, it will not be out of place to say a word or two about washing the print free from the last traces of hypo. It must be remembered that the process of so-called "washing" is really only diffusion. The salt which is held in solution in the paper diffuses into the clear water in which the print is lying. This is a comparatively slow business, and the speed at which the diffusion proceeds diminishes rapidly as the strength of the hypo. in the print becomes weaker. It is obvious that all that can be done is to supply the print with a slow current of clean water, and that nothing is to be gained by running the tap into a washing tank at full bore. The last traces of hypo. are very difficult, if not impossible, to remove by the ordinary washing or soaking method, and some photographers, who are very anxious as to the permanency of their prints, employ a substance such as hydrogen peroxide, or a persulphate, to oxidise the hypo at once. The drawback to this procedure is that this oxidising substance has the effect of partly bleaching the print, so that it should be employed with the greatest care.

For reasons which it would be difficult to explain in this article, silver chloride prints which have received a partial exposure cannot be developed further, but bromide prints can be treated in this manner. Consequently, when it is necessary for any reason to develop a partially printed out chloride print, it is necessary before doing so to soak it for a few minutes in a 10 per cent. solution of potassium bromide, which changes the silver chloride and citrate into bromide, which can then be developed with hydroquinone or metol in the usual way. Such prints look very well when toned with platinum.

Bromide paper is coated with an emulsion which is merely a less sensitive variety of the emulsion used for coating ordinary dry plates. It is exposed for a short time behind the negative and developed and fixed in the usual way. The only difference is that the developer and fixing bath are employed somewhat weaker than in the case of negatives, and a developer such as metol or hydroquinone is employed, so that the paper does not become stained. Bromide papers can be toned with platinum, and some of the bromide papers on the market contain platinum, which is reduced by the silver on development. Bromide can also be toned with uranium nitrate, which gives a reddish tone. Schlippe's salt (sodium sulph-antimoniate) is occasionally used for toning bromide paper to a reddish tint.

All the processes for printing in salts of iron depend upon the fact that ferric salts are reduced to ferrous salts when exposed to light. If a sheet of paper be coated with ferric oxalate and gum and exposed behind a negative, a faintly distinguishable image will be formed in the ferrous salt. If the paper be now washed with a solution of potassium ferricyanide the reduced portion will turn blue through formation of Prussian blue, and will thus be rendered clearly visible. If on the other hand the paper be washed with potassium ferrocyanide, the reduced portion will remain practically colourless, whilst the unreduced ferric salt will be turned blue, so that in this case a negative print will be secured instead of a positive. In practice the paper is coated with a mixture of ammonio-citrate of iron and ferricyanide if a positive result is required, and all that is necessary is to wash the paper free from the unreduced salt. If on the other hand a negative print is required, the paper is simply coated with ammonio-citrate of iron and gum, and is afterwards developed, so to speak, in a solution of ferrocyanide of potassium. The completed print can be treated in a variety of ways to change its colour. Potassium sulphocyanide turns it red; a solution of tannic acid, such as weak tea, forms an ink, changing the colour to a sort of purple; whilst various other reagents give different colours with the iron image.

It is a natural transition from iron to platinum. Salts of this metal are not readily reducible, and it is necessary to coat the paper with a mixture of ferric oxalate and the platinum salt. The iron is reduced first by the light, and then reduces the platinum in its turn. If ordinary platinic chloride were used an image would certainly be produced, but it would be a very faint one, because so much of the energy of the iron would be expended in reducing the salt from the platinic to the platinous state before it could be further reduced to the metallic condition. For this reason the double chloride, known as potassium chloroplatinite, in which the metal is in the platinous state, is used. On examining the paper when it comes out of the printing frame, only the iron image should be visible. On developing it in a bath of weak potassium oxalate the iron reduces the platinum, and a grey image is formed. One or two washings with weak hydrochloric acid removes the iron from the print, and leaves only the platinum. It is necessary to keep the paper almost absolutely dry before development, otherwise a certain amount of reduction goes on all over the paper. The toning of platinum prints with catechu has been recommended, and it should be noted that the addition of mercuric or cupric chloride to the oxalate developing solution gives the print a sepia colour. This change seems to be due to an allotropic modification of the platinum itself rather than to any compound with the mercury or the copper.

THE STUDENTS' COLUMNS.

BOTANY.—1.

One so often finds that the young pharmacist has, during his apprenticeship, neglected the study of botany, that one cannot help asking the question, "Why is this the case?" Many a man enters upon his course of final preparation for the Minor almost or quite ignorant of this important subject. Maybe he has purchased some elementary text-book; he may perhaps have read the first few chapters, but with what result? He has been confronted by an array of technical terms, many of them unmeaning to him and hard to be remembered; he has taken no pains to gain a knowledge of the things for which they stand, and he has never gained an acquaintance with the outward appearance of the plants of his neighbourhood. But what pleasure will be aroused and what interest the study of botany will assume if only the student's senses can be awakened to the wealth of interest and beauty which exists in the vegetable world. His walks will become more delightful, he will begin to wonder at his former indifference, and the study which was formerly a task to be avoided as long as possible will become a real pleasure.

But how is this to be effected? How can the apprentice who is unable to attend a class in botany begin to learn the names of the common wayside plants? First, let him purchase a copy of John's 'Flowers of the Field' (S.P.C.K. 6s.). This is a work which professes simply to teach the unscientific how to find out the names of the flowers they fall in with in the course of their country ramble. As the author of the work truly says, such a knowledge is not botany, but, nevertheless, it is a step towards botany; and soon the student will learn, not only the names of the plants he meets with, but he will begin to study them scientifically. He will dissect the flowers he finds, and before long the A B C of botany will be mastered. One of the first troubles that confronts the would-be field botanist is to know how to begin his study; he sets out upon his first specimen-hunting expedition; he is overcome by the number and diversity of the plants he sees around him, and he cannot decide what to take as spoil.

Just at the present season, when Nature has run to seed and flower time is passing with the falling leaf, the student may not perhaps meet with this difficulty. Although in sheltered spots in a mild season many flowers may be found blooming freshly, they are mostly belated stragglers; yet one is sure to find such enthusiastic plants as the shepherd's purse, the common chickweed, and the groundsel, and others which flower more or less all through the year; they are designated "weeds," but each one will serve to give an instructive lesson to the young botanist. Let the student take home with him one or more specimens of the shepherd's purse *(Capsella bursa-pastoris)*. This is one of the commonest weeds, and will be found on almost every patch of waste ground and by every wayside in all localities; it does not refuse to grow and to leave seed even in the poorest soil, while it luxuriates in the richest. It is well marked by its inversely heart-shaped pods, which, when ripe, separate into two boat-shaped valves, thus exposing the numerous yellow seeds. From the fancied resemblance of these pods to some ancient form of purse the name "shepherd's purse" is derived.

When taking specimens for examination, choose if possible, those upon which there are flowers, as well as the fruit pods, and be careful to get the root, as well as some of the lower leaves. This advice should be followed in nearly all cases when dealing with small herbs, as the character of the root is often important, and we shall see that in very many cases the shape of the root leaves differs greatly from the shape of the stem leaves. Now let the specimen be examined in detail. The character of the root must first engage attention. It will be found to consist of a long tapering primary root axis. A root of this type is described by the text-book as a tap root, and as such is directly opposed to the fibrous root found on pulling up a tuft of grass. Next turn to the text-book for a description of the outlines of leaves. In the specimen it will be found that the lower leaves, which spring directly from the root stock, and which often lie closely pressed to the ground, fit in with the description of a pinnatifid leaf, while those on the stem, which vary in shape to some extent, are oblong or lanceolate, generally toothed, and are arrow-shaped at the base. The character of the stem itself must also be described; note whether it is rounded or angular, give its direction, whether upright, creeping, climbing, also if its surface is smooth or hairy. Next pass on to a consideration of the inflorescence—that is to say, to the arrangement of the flowers upon the stem. Look carefully to see whether the stalk is capped by a flower which is the first to open, the younger ones budding below it, or whether the oldest flowers are towards the base, the younger ones being towards the apex.

Obviously, the inflorescence of *Capsella* falls in with the second description, and, upon reference to the text-book, it will be found that this type of inflorescence is styled "indefinite," as opposed to the first type, which is known as "definite." Now, it must be decided what kind of indefinite inflorescence it is we are dealing with. It will be readily seen that the main axis is lengthened, and that each flower is stalked, and to such a variety the name of "raceme" is given. Next pass on to the examination of the different parts of each individual flower. As the flowers are small, a hand-lens and two or three needles mounted in wooden penholders will be indispensable. First dissect away the green outer leaves, which are collectively known as the calyx; note that they are four in number, and are separate from one another. Next pull away the white petals; it will be found that there are four of these also; they are separate from one another, and are arranged cross-wise. This cruciform arrangement should be carefully noted; it is typical of a very large and important natural order—viz., the Cruciferæ—of which our *Capsella* is a member. The stamens will be found to be six in number, and it must be noted that two opposite ones are shorter than the rest. To this arrangement of four long stamens and two short ones the term "tetradynamous" has been applied, and it is another diagnostic character of the natural order Cruciferæ. Finally pass on to the examination of the ovary, fruit, and seeds. The ovary (Lat., *ovum*, an egg) is the innermost of the floral organs; in our specimen it is solitary and two-celled. The first is a pod divided into two cells by a thin partition, from which the valves separate at maturity. The seeds are attachd in each cell, alternately to the right and left edges of the partition. Some little trouble may be experienced in dealing with the flower of *Capsella* on account of its same size, but it will be excellent practice to make out the above characters as far as possible. Soon wallflowers will be plentiful, and then the student will have a larger flower belonging to the same natural order; but it may be mentioned here that in the garden plant there is a tendency for all the stamens to become the same length, an instance of the influence which cultivation has upon plant form.

To the young beginner the method suggested above may sound long and tedious, but it is the only true road to an intelligent study of plant form. Soon he will begin to recognise readily the various types of leaf outline and of inflorescence, and, although winter is drawing near and there will be but little choice of flowers to study, this may be an advantage, inasmuch as he will not be overwhelmed by the multiplicity of specimens around him, and he may be in a position to deal more readily with the numbers that will be found on every hand when spring again awakens plant life.

When choosing a text-book, Edmond's 'Elementary Botany' (Longmans, 2s. 6d.) will be found an excellent work with which to commence the study of vegetable life.

SOME HUMOURS OF BOTANY.

At a time when all our schools and colleges are preparing for the serious work of the winter session, it may not be out of place to give, by way of warning to intending students, a few notes on the way not to do it. The following are verbatim extracts from the note-books of some members of a class in economic botany, collected by the lecturer from time to time:—

(1) Cajuput oil is used as a stimulant and also for bad joints by outward application. It is imported to this country in empty wine bottles. (2) Cruciferæ: The plants are biting and accurate (acrid). (3) The outside of the fruit of *Anacardium occidentale* is a fleshy periodical (peduncle). (4) *Crotalaria juncea* stems are woody, they are lacerated (macerated), containing a quantity of fibre. (5) Malt; grains of barley; they germinate out of the spout, converted into sugar. (In allusion to their sprouting in the course of germination.) (6) Galls; the insect is in the tree, and the tree keeps on growing, and then the insects get out before it is shut in. (7) Ammoniacum exudes naturally by holes made by insects in tears, which dry on the stem. (8) From Paraguay tea an effusion is obtained. (9) Cochineal; the insects are placed on the plants in August and left to feed for four months, after which they have become carmine inside. (10) Salicine is an antisceptic. (11) Areca nut is used as a preventive against decentry. (12) Euphorbia juice keeps away barnacles and other sea urchins. (In reference to its former use for painting ships' bottoms to prevent corrosion.)

One member of the class had a crude sense of humour, of which he was apparently proud, judging from the following:—"*Mucuna pruriens*, the hairs are called cow-itch, they once had a reputation as a vermifuge, taken internally they stick into the poor beggars." "The fermented juice of the vine has been known and appreciated from antiquity. Even Noah got drunk on this."

Another member, referring to the temperance beverage, coffee, wrote as follows:—"Liberian coffee was thought that it would withstand all insect ravishes."

Another, describing the pulping of coffee, said it was "pupped in a machine," and yet another, speaking of *Coffea arabica*, stated that "numerous insects prayed on the leaves."

It is not a little remarkable that notwithstanding these glaring blunders, the scientific names of most of the plants described in the lectures were correctly spelt. A few of the most absurd mistakes in this respect were the following:—*Tiliodendron & flaxuosum* for *Eriodendron anfractuosum*, *Citrus orangeum* for *Citrus aurantium*, *Russ waxcdonia* for *Rhus succedanea*, and beauty of frondosa for *Butea frondosa*.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

LIBRARY, MUSEUM, SCHOOL, AND HOUSE COMMITTEE.

At a meeting of this Committee, held on Wednesday, October 14, 1903, the following reports were presented :—

The Curator reported on the meeting of the Museums Association at Aberdeen.

Attendance in the Museum.

	Total.	Highest.	Lowest.	Average.
London, July	245	25	1	9
August	41	7	0	1
September	177	20	6	12

Donations to the Museum.

Messrs. Wright, Layman, and Umney, London :—Specimens of Guadeloupe Jaborandi.

Messrs. Hodgkinsons, Clarke, and Ward, London :—Specimens of an Unnamed Brazilian Root used in Medicine.

Messrs. Lewis and Peat, London :—Specimens of Zirishk Fruit and Shirkisht Manna.

Mr. Finnemore, London :—Specimens of a Spurious Bark sold as that of *Prunus serotina*.

Mr. G. Baker, Technological Museum, Sydney :—Specimen of the Bark of *Orites excelsa*.

Messrs. Clay and Abraham, Liverpool :—Specimens of a Medicinal Root and Bark from Hayti.

Dr. A. Voigt, States Botanical Institute, Hamburg :—Specimens of an Oil Seed used in the Gaboon, *Ochocoa gabonensis*, Peene.

Donations to the Herbarium.

Mr. J. Cryer, Bradford :—Specimens of the new British Plant, *Polygala amarella*, Crantz.

Messrs. Harrison and Sons, Grantham :—Specimens of *Salix* cultivated in Lincolnshire as osiers.

Dr. E. A. Heath :—Living Specimen of *Ocymum viride*.

Mr. W. B. Cowie :—Three Specimens of *Salix*, cultivated in the Netherlands.

Messrs. Veitch and Son :—Specimen of *Codonopsis tangshen*.

Mr. F. Moore, Curator of the Botanic Garden, Dublin :—Specimens of *Salix*, cultivated in the Dublin Botanic Gardens.

Attendance in Library.

	Total.	Highest.	Lowest.	Average.
London, July	224	17	1	8
August	52	8	0	2
September	157	18	5	11

Circulation of Books.

	Total.	Town.	Country.	Carriage Paid.
London, July	161	79	82	17s. 1d.
August	76	39	37	9s. 5d.
September	160	76	84	17s. 7d.
Edinburgh, July	339	195	144	5s. 7d.
August	311	184	127	4s. 0d.
September	315	179	136	4s. 4d.

Mr. Knapman also reported on the meeting of the Library Association at Leeds.

Donations to the Library (London).

University of Glasgow :—Calendar, 1903-4.

University of Durham College of Medicine :—Calendar, 1903-4.

University College, Bristol :—Calendar, 1903-4.

Yorkshire College :—Calendar, 1903-4.

St. Bartholomew's Hospital, London :—Statistical Tables of Patients during 1902.

Wellcome Physiological Research Laboratories :—Description, etc.

Wellcome Chemical Research Laboratories :—Papers, Nos. 35-39.

Geological Survey of Canada :—Annual Report for 1899; Catalogue of Canadian Birds, part 2, 1903.

Smithsonian Institution, Washington :—Fourteen Reprints of Papers from the Smithsonian Reports for 1900-1.

Surgeon-General, U.S. Army :—Index Catalogue of Library, second series, vol. 8, 1903.

Royal Society of New South Wales :—Journal and Proceedings, vol. 36, 1902.

Ecole Supérieure de Pharmacie de Paris :—Thèses par MM. Antoine, Blancher, Carette, Col, Faure, Grotard, Lecorneur, Lerat, Liénard, Poissonnier, Reyes, Weill.

Dr. J. Attfield, Watford :—Chemistry, 18th ed., 1903.

Mr. T. Hart, Greenwich :—Stereoscopic Phenomena of Light and Sight, by T. Brown, 1903.

Mr. W. M. Holmes, London :—Translation of London Pharmacopœia, by R. Phillips, 4th ed., 1841.

Mr. R. T. Baker, Sydney :—Contributions to a Knowledge of the Flora of Australia, pt. 4; On *Eucalyptus melanophloia*, and its Cognate Species; On a New Species of *Symplocos*; On a New species of *Ardisia*.

Mr. J. H. Maiden, Sydney:—A Critical Revision of the Genus Eucalyptus, part 3.

Dr. K. Dieterich, Helfenberg :—Helfenberger Annalen, 1902.

Imperial Botanic Garden, St. Petersburg :—Acta Horti Petropolitani, tom. 21, part 2.

Kaiserliche Akademie der Wissenschaften, Vienna : — Sitzungsberichte, Chemie, Bd. 111, Heft 4-10, 1902.

Dr. O. Hesse, Feuerbach:—Beitrag zur Kenntnis der Flechten und ihrer charakteristischen Bestandteile, 1903; Zur Kenntnis der Opiumbasen, 1903.

Dr. P. Carles, Bordeaux :—Les Dérivés Tartriques du Vin 3e éd., 1903.

Donations to the Library (Edinburgh).

American Pharmaceutical Association :—Proceedings, 1902, vol. 50.

Ontario College of Pharmacy :—Annual Announcement, 24th session, 1903-4.

Purchase of Books.

The Committee authorised the purchase of the undermentioned books :—

For the Library in London.

Bloxam, Chemistry, 9th ed., 1903.
Wright, Oils, 2nd ed., 1903.
Attfield, Chemistry, 18th ed., 1903.
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EXAMINATIONS IN EDINBURGH.

October, 1903.

Major Examination.

One candidate was examined, and passed.

Willox, Leonard, S.; Edinburgh.

Minor Examination.

Candidates examined 123
„ failed 83
„ passed 40

Anderson, James; Glasgow
Anderson, William P.; Edinburgh
Buchan, William; Kirkcaldy
Burn, William B.; Whitley Bay
Butchers, William H.; Newark
Campbell, Alexander; Kilmarnock
Cassie, Rhona C. H.; Hopeman
Cran, William S.; Peterhead
Crosbie, Andrew; Galashiels
Davidson, Alexander H.; Stranraer
Doig, John A.; St. Andrews
Elliot, Thomas; Edinburgh
Galbraith, Thomas H.; Kilbarchan
Gammie, Alexander; Lochgelly
Hendry, Stuart M.; Aberdeen
Kipling, Joseph B.; Malton
McCreath, William F.; Leven
McDougall, Jean I.; Montrose
McLaren, William B.; Newport
McMillan, Robert G.; Glasgow
Matthews, Joseph; Kelso
Meakin, William; Eastwood
Michie, David C.; Edinburgh
Milne, Alexander; Fettercairn
Moffat, George H. C.; Ecclefechan
Moffat, Irving A. C.; Ecclefechan
Moffatt, Wm.; Butterknowle
Muir, Thomas H.; Prestonkirk
Nightingale, Herbert R.; Edinburgh
Noddings, Arthur W.; Leeds
Paisley, Scott; Langholm
Reid, William; Paisley
Richardson, Geo.; Bishop Auckland
Robertson, Alexander D.; Oban
Robertson, Harry B.; Br'ghty Ferry
Shield, William; Stanley
Sprott, Charles E.; Maryport
Steven, George; Edinburgh
Wilson, George Bell; London
Wood, John G.; Berwick-on-Tweed

PHARMACEUTICAL SOCIETY OF IRELAND.

MEETING OF THE COUNCIL.

Wednesday, October 7, 1903, at 67, Lower Mount Street, Dublin, Mr. G. D. Beggs in the chair.

Election of Officers.

The Chairman briefly stated the results of the late Ballinasloe prosecutions, and then proposed that Mr. Johnston Montgomery, of Belfast, should be appointed President. There was no reason why the office of President should not go round the country. Formerly he was of opinion that the President of the Society should be a Dublin man, but he did not hold that opinion now. The British Society had had a President from Sheffield, which was a long way from London, but was not as far from that city as Belfast was from Dublin. He was aware that Mr. Montgomery was not anxious to take the position, but, nevertheless, he had great pleasure in proposing him.

Mr. Smith, in seconding, said he was sure that Mr. Montgomery would make a most efficient President.

Mr. Kelly and Mr. Doig supported the proposal.

Mr. Wells said there was a strong feeling amongst the members of the Council that Mr. Beggs ought to retain the position of President for another year. He (Mr. Wells) would be the last man in the world to nominate anyone in opposition to Mr. Montgomery, but he knew from that gentleman that he would not accept the office. He proposed that Mr. Beggs be re-elected.

Mr. Tate said that Mr. Montgomery would on no account accept the presidentship. That gentleman appreciated very highly the feeling in the North and in Dublin which had been manifested towards him; and on his behalf he (Mr. Tate) asked them to allow him to nominate Mr. Beggs for the office. In the North they appreciated the good work that Mr. Beggs had done for the Society, and they knew that he had discharged the duties of the office as few men could.

Mr. Jameson having spoken in similar terms,

Mr. Beggs said he was extremely obliged to them for the honour they wished to confer on him, but he feared he must decline it. His time would be very fully occupied next year, and he would ask them to allow him to retire, for a while at least.

Mr. Wells said that Mr. Montgomery was a conscientious man, and his difficulty was that he could not attend all the Council meetings, and devote all the time and attention to the duties of the office that he thought ought to be devoted to them. However, they might pass the resolution for his election, and he could decline afterwards.

The motion for the election of Mr. Montgomery as President was then put and unanimously carried.

Mr. Beggs nominated Mr. Patrick Kelly for the office of Vice-President.

Mr. Moffitt seconded.

Mr. Tate said that Mr. Montgomery lived at a considerable distance away, and the Vice-President should therefore be a man well up in the routine work connected with the chair. He moved that Mr. Wells be elected Vice-President.

Mr. Vincent Johnston seconded.

Mr. Kelly having declined to stand, the motion for the election of Mr. Wells as Vice-President was put and unanimously carried. Mr. Wells then took the chair, and thanked the Council for electing him.

The Vice-President then moved the re-election of Mr. John Smith as Honorary Treasurer.

Dr. Walsh seconded the motion, which passed unanimously.

Messrs. George Brown and Patrick Kelly were re-elected Auditors; and the several Committees were elected.

Thanks to Mr. Beggs.

The Vice-President said they should pass a hearty vote of thanks to their late President, Mr. George Beggs, for his services whilst in the chair during the past three and a-half years. He had thrown himself into the work of the office, and performed its duties well. He was a universal favourite with the members of the Society, and had upheld its honour and dignity, not only at home, but on several occasions at conferences in England.

Mr. Kelly said that, as one of the longest in the "shop," he desired to second the motion. It was with great regret that they saw Mr. Beggs out of the chair.

The motion passed unanimously, and Mr. Beggs gracefully returned thanks.

The Government Visitor.

The Vice-President referred to the resignation of Sir George Duffey of his position as Government visitor, which he had held for eighteen years, and moved a formal vote of thanks and regret.

Mr. Beggs seconded, and the resolution was unanimously adopted; and it was ordered to be entered on the minutes and a copy sent to Sir George Duffey.

The Vice-President said they had a good successor to Sir George Duffey in Sir John William Moore, a gentleman who had already shown himself more than friendly to the Society. He had attended for the first time at the examinations on the previous day.

Other Business.

In reference to a letter from the Curator of Trinity College Botanical Gardens,

The Vice-President mentioned that for some years the Society's Lecturer in Botany had been giving demonstrations in the College Gardens. As there was no authority for this, it had become necessary to write to the Curator, whose reply was that there would no difficulty about granting the required permission.

On the motion of Mr. Brown, seconded by Mr. Watson, thanks were voted to the Smithsonian Institution for a donation of fourteen pamphlets.

On the motion of Mr. Beggs, Mr. Arthur H. Laird, who had been temporarily appointed Lecturer in Botany, was reappointed.

The Vice-President congratulated Dr. Walsh on his re-election to the Council, and Dr. Walsh returned thanks.

Messrs. E. F. Flood, Dundalk, and Mr. R. J. Hayes, Dublin, were elected members of the Society.

Approval of a New Regulation.

The Lords Justices and General Governors of Ireland, by and with the advice and consent of His Majesty's Privy Council in Ireland, have approved the following regulation:—"That the Preliminary Examinations shall be held on the first Thursday and following day in January, April, July, and October, instead of on the first Tuesday and following day."

PRELIMINARY EXAMINATION.

The following have passed:—W. T. MacConnell, C. V. Bolton, R. Gubbins, W. J. Stevenson, J. Hall, T. Montgomery (D. O. McKinney and A. F. White).

Seven candidates were rejected.

CHEMISTS' ASSISTANTS' ASSOCIATION.

OPENING MEETING.

Thursday, October 8, 1903, the President, Mr. A. B. Britton in the chair. At this, the first meeting of the session 1903-4, there was a very good attendance, and after the Secretary, Mr. Town, had read the minutes of the general meeting, eight new members were proposed.

Presentation of the Essay Prize.

The President said it was now his pleasant duty to present the Essay Prize, consisting of the Association's silver medal, a copy of Remington's 'Practice of Pharmacy' and £5, the book and money being presented by Messrs. Burroughs Wellcome and Co., to Mr. S. T. Frost for his paper on "The Products of the Bee." He congratulated Mr. Frost on having won the prize. It was a honour that one might well be proud of, and he hoped that during the ensuing session there would be a keen competition, not only for the Essay Prize, but also for the Practical Prize, which was offered for work on pharmaceutical subjects.

Mr. Frost, in acknowledging the award, supported the President's remarks concerning the Association's prizes. He pointed out that during the seven years that he had attended the meetings of the Association the prize for practical work had been awarded on one occasion only —session 1896-97—although many of the members of the Association during those years had been men of ability quite capable of doing practical work worthy of the prize.

The Inaugural Address.

The President then delivered an address, in which he referred to the fact that this was the first meeting of the twenty-seventh session, and took a backward glance at the list of former Presidents, remarking that the list was a source of legitimate pride. Referring to the programme of the session, he mentioned that the Association's subscription to the *Chemists' Assistant* expired in September, and the Council had decided not to continue that subscription. Several methods of publishing the proceedings of the Association were under consideration, but nothing definite had been arranged, and the Council would be glad to have suggestions. Coming to matters pharmaceutical, the President said it was gratifying to find a general awakening all along the line, and he thought that for the chemist the prospect ahead, while still difficult enough, was gradually assuming a brighter tint. The evil which had come near wrecking the craft during the past few years, he said, was not competition, but panic. Competition had to be met and hurt nobody, but why throw away a title so hardly earned and descend to the level of a third-rate toy-shop or an indifferent imitation of Madame Tussaud's, by displaying "Store" this, "Store" that, and "Store" the other? The only explanation possible of such a surrender was panic. He then referred to the increased activity of local and other organisations as a hopeful sign of returning confidence. In his opinion there was now as good a high-class pharmacy trade to be done and as good a social position for the pharmacist as ever there was, provided he was not afraid to lay himself out to do it, and at the same time knew how to treat his customers, to gain not only their custom, but their respect. After touching upon the early history of pharmacy and the art as practised by the ancient Egyptians, the President expressed his conviction that just as pharmacy has had an honoured name in the past, so it should have in the future, and one of the best means of promoting that desirable end was by association and organisation.

On the motion of Mr. Latreille, seconded by Mr. Lownsbrough, a hearty vote of thanks was accorded to the President for his address.

WEST HAM AND DISTRICT CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Thursday, October 8, 1903, at the Earlham Hall, Forest Gate, Mr. Harold Mitchell in the chair.

Correspondence.

The Secretary read the correspondence, which dealt mostly with early closing.

Mr. Blades said how pleased he was that this arrangement had been brought about, as it was the first time in his twenty years' experience that he had been able to enjoy an evening to himself. He thought that early closing in no way interfered with business.

The Chairman read a letter from Dr. Anden, Head of the Chemical Department of the Technical Institute of West Ham, stating that a class had been formed affording students an opportunity for taking up work for such examinations as those of the Pharmaceutical Society and Apothecaries' Hall. As he had only had eight entries, he wrote asking if it was thought desirable to continue the classes.

The Chairman said he thought that, in a district such as West Ham, eight entries was certainly encouraging.

Mr. Soper said he quite agreed with the Chairman, and he moved that Dr. Anden be written to by the Secretary urging him to continue the classes, and saying that the members would do all in their power to make the classes a success. This was seconded by Mr. W. Barnes, and carried *nem. con.*

Medicine Stamp Duty.

The Chairman then called upon Mr. Forbes to read his paper, "A Résumé of the Stamp Act." This dealt with the stamping of proprietary medicines in the light of the new reading of the Act. The paper, which was of a particularly interesting nature, was listened to with marked attention. At its close a discussion was invited, which led to the clearing away of many difficulties which had hitherto existed in the minds of chemists on this question.

Mr. Savage moved, and Mr. White seconded, a hearty vote of thanks to Mr. Forbes for the very lucid explanation he had given in regard to the Stamp Act.

Mr. Forbes said he wished to mention that he was greatly indebted to Mr. Peter MacEwan for the great assistance he had obtained from him in preparing his paper, and it was moved by Mr. Soper, and seconded by Mr. Johnson, that the Secretary should write to Mr. MacEwan tendering him the thanks of the Association.

Divisional Secretaries.

It was unanimously agreed to suggest to the Council of the Pharmaceutical Society the following gentlemen as Divisional Secretaries for the ensuing year:—Mr. F. Walter Gwinn, West Ham (N.); Mr. W. R. Barnes, West Ham (S.); Mr. J. H. Matthews, Walthamstow; Mr. J. W. Lasham, Romford.

Mr. Savage gave notice of motion for the December meeting with regard to the opening of packed medicines.

NORTHAMPTON CHEMISTS' ASSOCIATION.

SPECIAL MEETING.

Friday, October 9, 1903, at the Black Boy Hotel, Wood Hill, Northampton, the President, Mr. W. D. Mayger, in the chair.

The Post of Divisional Secretary.

The Hon. Secretary, Mr. F. Cowdery, said that some time ago the Association honoured him by unanimously recommending him for the post of Divisional Secretary for Northampton, an office which Mr. John Bingley, J.P., the present holder, was relinquishing. Since then he had suffered a serious illness, and he now felt that he could not undertake any more work. In these circumstances, he asked the Association to nominate someone else for the Divisional Secretaryship.

Mr. W. McKinnell said that all the members of the Association would join with him in expressing sorrow at the illness which overtook their Secretary. He hoped that Mr. Cowdery would not relinquish the duties of Secretary of the Association. He moved that a vote of congratulation be passed to Mr. Cowdery upon his recovery.

Mr. Evan C. Ashford seconded, and the vote was cordially adopted, and ordered to be recorded on the minutes.

The President suggested for the post of Divisional Secretary Mr. Donald McKinnell.

Mr. Cowdery, Mr. G. Ingle, and Councillor Ashford cordially supported the nomination of Mr. McKinnell.

Mr. Evan C. Ashford thereupon moved that the Association recommend the Pharmaceutical Society to appoint Mr. Donald McKinnell as Divisional Secretary for Northampton. Mr. A. Armitt seconded, and the resolution was carried unanimously.

Mr. D. McKinnell, in reply, assured the Association that he would try hard to carry out the duties well, and thanked Mr. Cowdery for his generous offers of assistance in the work.

HARTLEPOOLS AND DISTRICT CHEMISTS' ASSOCIATION.

In preparing the list of local pharmaceutical associations published in the Journal for October 3 last, one association was inadvertently overlooked, viz., the Hartlepools and District Chemists' Association. This Association was founded in May, 1903, and meetings are held monthly on the second Thursday in the month, or oftener if necessary, sometimes at Hartlepool, and at other times at West Hartlepool. The Association is affiliated with the Federation of Local Pharmaceutical Associations. The officers are:—President, Alderman Thos. Clarkson; Vice-Presidents, Alderman J. Horsley and G. A. Watt; Hon. Vice-Presidents, Edward Evans, jun. (Liverpool), Dr. A. E. Morison, Dr. S. Biggart, Dr. A. V. MacGregor, P. R. Sibson, J. A. Turnbull, Dr. Scott Gibb; Executive Committee, J. B. Barker, G. S. Gibson, J. Hill, R. Leithead, J. G. Denton, H. Buckle; Hon. Solicitor, M. Harrison; Hon. Secretary and Treasurer, A. Timmins, 68, Murray Street, West Hartlepool.

DEVONPORT AND STONEHOUSE CHEMISTS.

SPECIAL MEETING.

Monday, October 12, 1903, at the Temperance Hall, Devonport, Mr. J. A. Lamble in the chair.

Nomination of Divisional Secretary.

The Chairman, in explaining that the meeting was called to nominate a gentleman to act as Divisional Secretary for Devonport and Stonehouse, said the duties had been well carried out by Mr. Weary. He hoped that gentleman would stand again.

Mr. Cocks appreciated the manner in which Mr. Weary had done the work, but thought the hands of the Society would be strengthened if the office were only held for two years, for once a man had been an official of the Society he would naturally take greater interest in its work.

Mr. Weary said he quite agreed that two years was quite long enough. At first he was not in favour of a new Secretary being elected annually, as he would not get accustomed to the duties, but as these were so light, he felt that the Society would be much better served if the post be only held for one or two years.

Mr. Cocks proposed that Mr. Lamble should be nominated, and regretted it was no longer the duty of the Divisional Secretary to collect the subscriptions.

The vote was carried unanimously.

Mr. Lamble, in reply, said he appreciated the honour of representing the Society in Devonport and Stonehouse; it was nearly twenty-nine years since he commenced business, and he had always met with most courteous treatment from the officers of the Society; he proposed a hearty vote of thanks to Mr. Weary for the manner in which he had carried out his duties of Divisional Secretary for the past three years.

Other Business.

Mr. Cocks said Mr. Glyn-Jones had written him, asking for further support to the P.A.T.A. It was decided that the Chairman and Mr. Weary should interview the local chemists, with the view of appointing one of them to represent the P.A.T.A. in Devonport.

SCARBOROUGH CHEMISTS' ASSOCIATION.

FIRST MEETING OF THE SESSION.

Thursday, October 8, 1903, at Scarborough, Mr J. Whitfield, F.C.S., in the chair.

Election of Officers.

The following officers were elected:—President, Mr. H. Chapman; Vice-President, Mr. F. Foster; Secretary, Mr. R. Gilchrist (73, Newborough).

Other Business.

It was decided to hold meetings more frequently in future.

The question of earlier closing was discussed. Several of the chemists in the north and north-west districts had agreed to close at 9 p.m.; some of the others were desirous to close earlier if the shops in the main street would close. Finally, Mr. Whitfield and Mr. Parker promised to turn window lights out at 8 p.m., shop lights and lock the door at 9 p.m.

Varied opinions were expressed on the new stamp regulations. It will be further discussed at the next meeting.

DEWSBURY AND DISTRICT CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Monday, October 12, 1903, Mr. R. Gledhill in the chair.

The P. J. Formulary.

A discussion took place respecting the 'Pharmaceutical Journal Formulary,' the question being raised as to whether the right to sell articles included in the work would be restricted to chemists. A fear was expressed that the several formulæ would get into the hands of other than chemists, who would be allowed to make up the articles and sell them.

The President said it was understood that the formulæ could only be used by registered chemists. He should like to know for certain whether any person would be able to make up an article provided it was stated on the label where the formulæ came from.

Mr. A. B. Barker said he thought the publishing of these formulæ would be detrimental to chemists, as they would get into the hands of all sorts of people. The only advantage that chemists would gain was that they would be allowed to make up these compound medicines and sell them without any stamp, whereas grocers would have to affix a stamp.

Mr. W. Stead said this was why grocers were complaining.

After further discussion, a resolution was adopted recommending individual members to forward formulæ to the Secretary to be included in the Compendium.

Divisional Secretaries.

It was decided to recommend Mr. G. N. Gutteridge for election as Divisional Secretary for Dewsbury, Mr. J. Rhodes for the Morley Division, and Mr. A. B. Barker for the Spen Valley Division.

STOCKPORT CHEMISTS' ASSOCIATION.

FIRST MEETING OF THE SESSION.

Wednesday, October 7, 1903, at the Albert Hall, Wellington Street, Mr. Wm. Dodge in the chair.

Nomination of a Divisional Secretary.

After the usual routine business, it was proposed by Mr. Orrell, seconded by Mr. Wilson, and carried unanimously, that Mr. Orton be nominated for the position of Divisional Secretary of the Pharmaceutical Society.

The Pharmacy Bill.

Mr. Roberts tendered the thanks of the Midland and Public Dispensers' Association for the resolution *re* amendment to the Pharmacy Bill.

ROYAL PHOTOGRAPHIC SOCIETY.

FIRST GENERAL MEETING OF THE SESSION.

Tuesday, October 13, 1903, at 66, Russell Square, W.C., the President, Sir William Abney, in the chair.

An interesting feature of the occasion was the presentation of medals won in the various competitions in connection with the Society's Exhibition, now being held at the New Gallery, Regent Street.

President's Address.

In the course of his address, the President announced that at a Council meeting held earlier the same evening, a committee had been appointed to formulate plans for the establishment of the proposed extensive laboratory in connection with the Society. He hoped that, through the action of this committee, they would soon obtain sufficient funds to carry out the scheme.

WOLVERHAMPTON AND DISTRICT CHEMISTS' ASSOCIATION.

ANNUAL SMOKING CONCERT.

Wednesday, October 7, 1903, at the Star and Garter Hotel, Wolverhampton, Mr. F. A. Willcock, President, in the chair.

A good programme of vocal and instrumental music was performed, at the conclusion of which the President proposed, Mr. Gibson seconded, and Mr. Berry supported, a hearty vote of thanks to the artists.

Mr. G. H. Cox suitably responded.

NORTH-EAST LANCASHIRE CHEMISTS' ASSOCIATION

ANNUAL MEETING.

Wednesday, October 14, 1903, at the White Bull Hotel, Blackburn, Alderman Shorrock in the chair.

Mr. Joseph Hindle presented the annual report, stating that, through the illness of the Secretary, Mr. Pickworth, and the Assistant-Secretary, the work of the Association had fallen into arrears; but the ensuing winter session promised to be very busy. One important matter dealt with during the year was the new reading of the Medicine Stamp Acts, and the result of the work done would doubtless be beneficial to them individually and as an Association. Educational work had not been neglected, but this winter the Technical School Committee had made conditions so onerous that there would be no classes for pharmaceutical students. Next year Mr. Lord Gifford's period of office on the Pharmaceutical Council expired, and members would have to consider the question of nominating him again. The number of members remained at thirty-one.

The report was adopted, on the motion of Mr. Jepson, seconded by Mr. Gifford.

The Hon. Treasurer, Mr. Charles Critchley, reported there was a small debit balance on the year's working.

Election of Officers.

The officers for the year were elected as follows:—President, Councillor Critchley; Vice-Presidents, Alderman Shorrock, Messrs. R. L. Gifford and W. Wells; Secretary, Mr. Jos. Hindle; Treasurer, Mr. C. A. Critchley; Executive Committee, Messrs. Highton, Holt, Standing, and Pickup.

The Federation.

The Secretary brought up a recommendation from the last general meeting that the Association should rejoin the Federation of Local Pharmaceutical Associations.

Mr. Hindle proposed that the recommendation be adopted. Mr. Pickup seconded.

Mr. R. Lord Gifford, in opposition, said the main question was whether the Federation justified itself. That was a moot point. But there were other considerations. They must not forget that Mr. Newsholme's organisation had materially changed things. They had an ideally perfect machine ready to their hands; why not use it? At the present time the Pharmaceutical Society was well organised. It had the standing and the weight of a State-accredited body, and, moreover, it had the will and the anxiety to serve them. They knew he had never questioned the motives of his colleagues on the Council, but he would go further and say they desired intensely to cooperate with them. Where, then, was the reason for dissipating energy by the multiplicity of organisation? He said they should deal direct with their State representatives, and impress their desires upon them, because they knew it was chemists' opinions that mattered, and chemists' circumstances that interested governments. The Council had declared with remarkable unanimity that the personal qualification was to be the chemists' Magna Charta, and the Parliamentary Committee asked them to help in an active crusade to enforce that. Surely all that was heartening? The time was at hand when the injustice done to chemists should be stated in plain and simple language, and, marching behind the Pharmaceutical Society, the qualified person would come into his own.

Mr. Holt seconded the rejection of the recommendation. He did not consider the existence of the Federation had been justified.

Alderman Shorrock said the Federation had done good work in its time. It was intended to do something the Pharmaceutical Society would not undertake; but the Society had latterly taken that work out of the Federation's hands, and there was no occasion for the latter body. He doubted whether he could ask the Darwen Association to continue its support of the Federation.

Mr. Hindle withdrew his motion in view of these expressions of opinion.

Mr. Highton remarked that they were certainly indebted to the Federation for its work in the past.

It was formally resolved that the recommendation to rejoin the Federation be not entertained.

OXFORD AND DISTRICT CHEMISTS' ASSOCIATION.

FIRST MEETING OF THE SESSION.

Tuesday, October 13, 1903, at the Golden Cross Hotel, Mr. G. C. Druce, President, in the chair.

The President said he had to report, with much regret, that death had removed two members since the last meeting in the persons of Mr. Squire and Mr. Gilkes. He proposed that the Secretary be directed to write a letter conveying the sympathy and condolence of the members of the Association to the families of Mr. Squire and Mr. Gilkes in their bereavement. This was carried unanimously.

An informal discussion on the new regulations of the Board of Inland Revenue was adjourned to next meeting.

IRISH CHEMISTS', ASSISTANTS' AND APPRENTICES' ASSOCIATION.

BUSINESS MEETING.

Monday, October 12, 1903, at 73, Harcourt Street, Dublin, the President, Mr. Edgar B. Aplin, in the chair.

The Hon. Secretary, Mr. R. G. Creed, read the general correspondence, and reported on the forthcoming smoking concert which will be held on the 30th inst., in the Gresham Hotel, Upper Sackville Street. Tickets were distributed amongst the members. The President consented to arrange a programme for the evening's entertainment.

It was announced that the Association's inaugural paper would be read during the second week in November by Mr. Patrick Kelly, M.C.P.S.I.

The Hon. Treasurer reported the receipt of subscriptions, and cash was disbursed in payment of printing, etc., accounts. Circulars were drawn up, and ordered to be printed for circulation amongst existing members and non-members, that for members dealing with matters of finance, and the other apprising non-members that the Association being now firmly established and doing well, an invitation to membership was cordially given. Intending members were instructed to communicate with the Hon. Secretary at 73, Harcourt Street. The newly-started employment agency for assistants was reported on favourably, and this branch of the Association was regarded as supplying a long-felt want to employers and employees alike throughout the city and country. The Committee decided to admit provincial members, assistants, and apprentices. It was mentioned that already the employers in Dublin regarded the Association as an excellent medium for obtaining efficient, experienced, and well-conducted young men.

The President stated that things were shaping themselves towards the new reading-rooms, and that, as soon as the funds permitted, steps would be taken in that direction.

SHEFFIELD PHARMACEUTICAL AND CHEMICAL SOCIETY.

MEETING OF THE COUNCIL.

Tuesday, October 13, 1903, Mr. G. Squire in the chair. The following officers were elected for the year:—President, Mr. G. T. W. Newsholme, F.C.S.; Vice-Presidents, Mr. A. R. Fox, F.L.S., and Mr. C. F. Carr; Treasurer, Mr. G. Squire; Hon. Secretary, Mr. H. Antcliffe; Auditors, Messrs. H. E. Ibbitt and H. G. Williams; Librarian, Mr. F. W. Whitworth.

The Lord Mayor of Sheffield and Alderman Batty Langley, M.P. (an opponent of the Pharmacy Bill), have accepted invitations to the annual dinner.

NORTH KENT AND DISTRICT CHEMISTS' ASSOCIATION.

GENERAL MEETING.

Wednesday, October 14, 1903, at the Mitre Hotel, Chatham, Mr. Arthur Stooke, M.P.S. (New Brompton), President, in the chair. There was a large attendance, delegates being present from Rochester, Chatham, Strood, Gravesend, Dartford, Maidstone, and other towns in the district.

Mr. R. Feaver Clarke (Gravesend), the Honorary Secretary, reported a large increase in the membership, and that the financial statement showed a balance on the right side. He also reported that Messrs. D. U. Still, A. Goldthorpe, and himself had attended the meeting of the British Pharmaceutical Conference at Bristol, which was acknowledged to be one of the most successful which had been held. All the delegates of the various associations represented were most cordially welcomed. The presidential address of Mr. T. H. W. Idris was most interesting. The meeting of the Federation of Local Pharmaceutical Associations was also a great success, but it was generally admitted that more time was required to discuss the important papers put forward.

The Pharmacy Bill.

The President dealt at length with the Pharmacy Bill, urging the members to keep in touch with the attitude of the various bodies towards that measure. He also spoke of men coming down to agricultural and other shows and banquets with a view to privileges being gained for ironmongers, oilmen, and other tradespeople to sell poisons in sealed packets. In view of this taking place it behoved the Chemists' Association to see that they were represented at these functions in order that the right side of the question might be put before the gatherings. The President also explained the provisions of the Medicine Stamp Acts. He said the grocers' associations, oilmen, and men of other callings were crying out about their privileges being destroyed and the chemists having the monopoly, and he had been informed these associations had called upon the Inland Revenue Authorities and had an interview with them, and that the Inland Revenue Authorities had distinctly refused to grant them any privileges whatever. The chemists and druggists had every reason to be encouraged.

A long discussion followed, from which it appeared that the general feeling of the meeting was that the effect would be for the benefit of chemists generally if they themselves carried out in their integrity the requirements of the Inland Revenue, who were in no way hostile to them as traders. It was contended that this was the first recognition, by official bodies, of chemists as different to other traders in regard to the sale of medicine, and on that account it was a departure to be received with satisfaction by the Association.

Mr. **Oliver** (West Malling) said chemists did not want to raise their position at the expense of grocers and other retailers. They simply wanted to impress upon the public the fact that they could only get genuine drugs at moderate prices from the chemists.

Mr. R. **Feaver Clarke** strongly urged members of the Association to become also members of the Pharmaceutical Society and of the Chemists' Defence Association.

It was decided to hold the next meeting in Woolwich about the third week in November.

Mr. **Willis** (Maidstone) asked if members could be admitted from outside the Association's recognised boundary.

Mr. **Feaver Clarke** said members were welcome from any part of the county. The North Kent was the only Chemists' Association in Kent, and he hoped that it might be the nucleus of forming other associations in the county.

MANCHESTER PHARMACEUTICAL ASSOCIATION

ANNUAL DINNER.

Wednesday, October 14, 1903, at the Albion Hotel, Piccadilly, Manchester, the **President**, Mr. G. S. Woolley, in the chair, supported by Dr. Joseph Collier, Alderman R. Gibson, Professor R. B. Wild, Mr. W. Kirkby, Mr. J. Rymer Young, Mr. J. Kemp, and about seventy other gentlemen.

The loyal toasts having been duly honoured,

Dr. Jos. **Collier** proposed the toast of

The Manchester Pharmaceutical Association.

The President, he said, was to be congratulated on the number of members present, and he was glad to hear that many more outside were interested in it. He was quite well aware that he must not talk politics, but he was also well aware that the pharmaceutical, like the medical, profession, required protecting—the medical against the quack; the pharmacist against the grocer. The community of interests between the doctor and the pharmacist should produce kindly feelings one towards the other. He did not know how to account for it, but it was a fact that there was a falling-off in the number of candidates for the medical profession, not only in Manchester, but all over the kingdom. It might, perhaps, be difficult for parents to send their children to the schools to qualify, yet it was a time when the advantages were greater than ever, for no unqualified person was allowed to hamper the field against the qualified man. He desired to see as many students in the pharmaceutical as in the medical schools. He would ask them to drink the toast, and wished prosperity and success to every member of the Association.

Mr. Geo. S. **Woolley** replied. The first association of chemists in Manchester of which they had any record was in November, 1841. He had in his hand a letter, in the handwriting of his father, calling the meeting together. It proposed to "form a branch of the Pharmaceutical Society." A society was formed, and it included such names as John Mottershead, Standring, Bowker, Wright, Hargreaves, Crompton (Bury), and others—names well known to those present. Lectures were given, and among the lecturers were Calvert, Dr. Turner, and Leo Grindon. All the work of the Association in those early days was devoted to education. At the present day the duties had somewhat differed. The facilities for education in Manchester in these days were so great that an association such as theirs could find other matters on which to employ their minds in the craft to which they belonged. Their great object now was to watch over pharmacy. He saw by the results of the recent Minor Examination in London that out of 224 candidates who went up only sixty passed. There was something wrong there. He was inclined to think that the wrong class of men tried to enter into pharmacy. Another point. A feeling had been expressed, and a desire had been manifested on the part of certain authorities, that there should be a degree in pharmacy, and that it should be in connection with the Victoria University. If such a proposal could be managed, and if the Victoria University should be the first to issue a degree in pharmacy, it would be a great gratification to all of them, and he sincerely hoped it might come to pass. They had seen in the *Pharmaceutical Journal* the other day that the Society proposed, if possible, to go on with their Bill. They had made it the least they could possibly accept. It was the duty of the members of the Association and the duty of pharmacists generally to assist the Pharmaceutical Council to the best of their power to carry out their wishes in this matter. The Manchester Association numbered 120 or 130 members. That number, however, was no representation of the pharmacists of that district. It was the duty of all the chemists in Manchester to support the Association, and he trusted that in the present session upon which they were about to enter it would result in a great increase in their membership.

Mr. W. **Kirkby** proposed the toast of

The Medical Profession.

He said he felt that as pharmacists they occupied a position on a lower plane than that of the medical profession, but a position nevertheless of great responsibility. The medical profession had always held a high position in this country, and to that profession they owed many privileges. After referring to the medical and other schools of the past in Manchester connected with pharmacists and chemistry generally, he said they really got in touch with the medical profession. He might mention the name of Dr. Wild in that connection. Pharmacists had reached a crisis in their history in the matter of education, and unless they were entitled to look to their medical friends to guide them and help them, they would be hampered in their progress.

Dr. **Wild** responded to the toast. With regard to the education of pharmacists it might be a little more considered than it had been in the past. They had tried at the Owens College to extend it as much as possible. He did like to see pharmacists educated to a higher level, and he should like to see a degree conferred upon them. Pharmacists might get a degree in science, and by utilising their studies concurrently with the studies for a degree, step on to higher things. There would be no difficulty in getting up a curriculum to enable them to get a degree. The present time was opportune owing to the reconstruction of the Victoria University. There were scholarships of £40 a year in Manchester, which were available for a university course of three years, which would enable them to secure a degree in science suitable to pharmacists.

A smoking concert followed, the programme being of an excellent character.

The syllabus for the session includes a lecture on "Manchester Pharmacists," with limelight illustrations, by Mr. W. Kirkby; a discussion on subjects suggested by the Federation of Local

Associations to be opened by Mr. Kemp; lecture on "Practical Electricity from a Pharmacist's Point of View," by Mr. F. A. Ringer; a social gathering open to ladies, and dispensing notes, by Mr. J. Grier.

EAST SUSSEX PHARMACEUTICAL ASSOCIATION.

OPENING MEETING OF SESSION.

Wednesday, October 14, 1903, at Edinburgh Hotel, St. Leonards, Mr. Vint in the chair.

The Pharmacy Bill.

Mr. Wootton addressed the meeting on the proposed Pharmacy Bill, especially in reference to Clause 7. He said that, on the verge of a new campaign, chemists should be earnest and unanimous. There was apprehension in some quarters, but the much-maligned clause should be advocated, because it would put companies on a level with chemists as regards qualification. One registered man in a partnership of three would not qualify a private firm to sell poisons, and the same law should insist that all the directors of a company should be chemists. The clause attempted to forestall three possible evasions:—(1) All the directors must be qualified. (2) There shall be directors. Otherwise, the articles of association might provide for the secretary to nominally take his instructions from general meeting, and directors be dispensed with. (3) Provision is made lest men should sell their names and qualification and accept dummy positions on the board of management. The clause had been the Jonah of the Bill, and friends and foes had recommended that it be thrown over; but it would have been a poor Bill if it had not been opposed. There was no need for despondency at the result of the last attempt. It was only a preliminary canter. For over twenty years since the first case was taken to the House of Lords the Society had been seeking for grounds to meet unfair competition with the existing law as understood, but this was its first attempt to deal with it by fresh legislation. No one had proposed a more workable plan than the clause under discussion. If the Bill could once be discussed there would be little danger in the opposition of Messrs. Bailey, Cross and Co., for they would have to speak of their own pockets, while the champions of pharmacy would wield the more powerful weapon of sentiment.

In the discussion which followed Mr. Vint emphasised two of the points mentioned—(1) that chemists might not have unqualified partners, and therefore all the directors of a company should be registered chemists; and (2) that opponents in the Legislature all had personal ends to serve, while those in favour were not personally affected by the case.

Mr. Harrison advocated sticking to the whole clause; he deprecated striking a bargain in the matter. The clause represented chemists' rights, and to give way a little meant to lose a great deal if not all. Moral—support the Society.

Mr. John Smith thought there would not be much difference in opinion amongst those present. A man who, like Mr. Bailey, could say that, as a company director, he opposed the Bill, could have no conception of what public duties meant, and was prostituting his office to his personal advantages. His fellow-M.P.'s must surely take note of his position in the debate.

Mr. Rossiter proposed an early deputation to the local M.P., and this was referred to the executive.

Medicine Stamp Duty.

A discussion followed on the medicine stamp question, and, through the action of the *Pharmaceutical Journal* in sending a telegram, the Secretary was able to announce the latest concession by the Board of Inland Revenue.

TUNBRIDGE WELLS AND DISTRICT CHEMISTS' ASSOCIATION.

FIRST MEETING OF THE SESSION.

Thursday, October 8, 1903, at the Castle Hotel, Tunbridge Wells, the President, Mr. Pearmund, in the chair.

Medicine Stamp Duty.

A discussion took place on the proposed changes in the Inland Revenue regulations. No resolutions concerning them were passed, as the question was postponed for further consideration at a later meeting.

Divisional Secretary.

A resolution was submitted to the meeting and passed unanimously, that a vote of thanks be given to Mr. A. E. Hobbs for his past services, and that the members of the Association be asked to nominate him again.

Other Business.

It was decided to hold a dinner at an early date, and a subcommittee was elected to make all arrangements for the same.

Messrs. Vizer and Phillips were elected members of the Association.

A vote of thanks was passed to the Chairman, and the wish expressed that the meetings during the winter might be well attended, and that the discussions prove of interest and value.

LEGAL INTELLIGENCE.

Pharmacy Act, 1868.

Prosecution under Sections 15 and 17 at Ayr.

Pharmaceutical Society v. McMaster.

On Tuesday, October 13, 1903, at the Sheriff Court House, Ayr, before Sheriff Campbell, David McMaster, ironmonger, 16, Dalrymple Street, Girvan, was charged at the instance of the Registrar of the Pharmaceutical Society with keeping open shop for the sale of poisons, and with selling a packet of Cooper's Sheep-Dip Powder in contravention of Section 17 of the Act, in respect that (*a*) the packet was not labelled with his name and address as the seller, (*b*) it was sold to a person unknown to him, (*c*) no entry of the sale was made in the poison-book, and (*d*) no signature of the purchaser was taken.

Mr. J. H. Goudie, instructed by Messrs. P. Morison and Son, appeared for the prosecutor, and stated that this case had been adjourned from September 11 last at the request of the respondent. Since then arrangements had been made to the satisfaction of the prosecutor that the offence would not be repeated. The respondent and the other ironmongers in Girvan had bound themselves to discontinue the sale of poisonous sheep-dips. He therefore asked that the case might be withdrawn, without prejudice to any future proceedings which might be required.

The case was then withdrawn.

Brighton County Court.

The Sale of a Business.

On Friday, October 9, 1903, at Brighton County Court, Alfred I. Lonnon, described as a chemist, of 32, Spardon Road, South Tottenham, sued Priscilla Barker, of Brighton, for £45, commission alleged to be due in connection with the sale of the business of a druggist and photographic dealer, carried on by the defendant at Trafalgar Street, Brighton.

Plaintiff stated that he had acted as manager to the defendant, who offered him 5 per cent. commission and expenses if he effected the sale of the business. He advertised it, and ultimately the business was sold to defendant's son for £900. The defence was a denial that the plaintiff sold the business, or that he was offered commission to do so. The whole of the terms were arranged between defendant and her son without the plaintiff's intervention.

Defendant's son, Percy Barker, deposed that he approached his mother relative to the sale of the business through a traveller's communication, and that he was not approached by the plaintiff.

Defendant intimated that she was quite willing to pay plaintiff the cost of advertising—£4 8s. 6d.—independent of the action.

Judgment was entered for the plaintiff, with costs.

Medical Acts.

"Electro-Vigor."

On Tuesday, October 13, 1903, at Bow Street Police Court, London, Lewis Bailles, of 164, Strand, was summoned, before Mr. Marsham, for unlawfully using the descriptions of "doctor" and "M.B.," thereby falsely implying that he was a registered medical practitioner.

Mr. Bodkin supported the summons on behalf of the Medical Defence Union, and Mr. Claude M. Treadwell appeared for the defendant, who pleaded guilty.

Mr. Bodkin said that the defendant had been acting as a medical man at an establishment which issued advertisements of the "Dr. McLaughlin Electro-Vigor treatment." The advertisements related to the powers of a so-called electric belt to cure every known or unknown disease from which human beings suffered in the shortest possible time, and it was stated that "persons may call and see the wonderful appliance, and you should remember that when you use electro-vigor you are under the care of a skilful physician, who will advise as to the best way to cure your troubles. Consultation and examination free, and if you cannot call we will send you a beautifully-illustrated book explaining our method and how you can cure yourself in your own home." These advertisements came under the notice of the Medical Defence Union, and two gentlemen were sent on different dates to 164, Strand. A Mr. Tyrrell went on July 30, and told the defendant he had called on behalf of a friend. This imaginary person's symptoms were discussed, and the defendant then said his name was Dr. Bailles, that he was an English doctor, with four medical qualifications, and that he was the only medical man there; further, that if a patient wanted medicine he was in the habit of prescribing drugs. On a subsequent date another clerk, named Whitwell, went, was examined with a stethoscope, and was diagnosed as having weakness of the heart and enlarged liver, to cure which a ten-guinea belt was recommended, to be supplied at the price of £3. Mr. Whitwell asked, "Are you Dr. McLaughlin?" and the defendant replied, "No; he is in Chicago. I am Dr. Bailles. I am an English doctor." He gave Mr. Whitwell a pamphlet of a very undesirable character, which he said he might hand to any female friend whom he thought right to recommend, and then, at Mr. Whitwell's request, he wrote his name down as "L. Bailles, M.A., M.B., etc." Defendant's name was not now on the register, but up to 1894 there was a Lewis Lamb Bailles registered as holding the degrees of bachelor of surgery and bachelor of medicine of the University of Durham. This was the defendant, and in 1894 he was convicted before Mr. Justice Grantham of the crime of rape, and sentenced to five years' penal servitude, his name being subsequently struck off the register and removed from the University calendar of Durham, and all his degrees taken from him.

Mr. Treadwell said that although his client was aware that he was not entitled to practise in the ordinary way, he had no doubt that he might accept the position of servant to a company of this kind, and what he had done was in ignorance of the law on the matter.

Mr. Marsham said the defendant clearly had no title to act in the capacity he had been doing. On one summons he would be fined £20, with twenty guineas costs, and on the other £5.

The money—£46 in all—was paid during the course of the afternoon.

Worship Street Police Court.

Charge of Receiving Stolen Pills.

On Friday, October 9, 1903, three men, one of whom was James Lloyd Davies, chemist, of Mare Street, Hackney, were charged with being concerned together in feloniously receiving since June last 595 boxes of pills and 360 vials of pills, value £50, the goods of the Co-operative Wholesale Society, Limited.

Under the direction of Detective-inspector Divall, Davies, who carried on business in Mare Street, was called on, and questioned as to a quantity of pills and other things he was told had been traced to his possession. He denied having bought any pills for four years, saying that he had overstocked himself long ago, and had only about sixty boxes in his shop. However, when search was made the property named in the charge was found, and Davies then said that he had been offered them at a low price, and had no idea they were stolen. The dealing with them was traced to the other two prisoners.

A remand was granted, bail in £100 each being allowed.

BANKRUPTCY INTELLIGENCE.

Re Alfred Davis, Measham.

A meeting of the creditors of William Alfred Davis, described as a chemist (the name Alfred Davis does not appear in the Register of Chemists and Druggists for 1903), of Measham, was held at Derby. The statement of affairs showed there were thirty-six unsecured creditors, to whom £241 17s. 6d. was due. The net assets amounted to £159 6s. 9d., including £80, the value of the stock in trade; £20, the value of trade fixtures; and £50, the estimated selling price of the furniture. Bankrupt attributed his failure to the fact that "since the mill was burnt down at Christmas, 1901, a large number of people have left Measham." Five of the debts owing to unsecured creditors are owing for money borrowed.

Re F. Booth, described as a Chemist, Ossett.

In the failure of F. Booth, Ossett, the Official Receiver stated that the debtor had absconded, and the examination was adjourned *sine die*.

COMPANY INTELLIGENCE.

Atkinson Brothers, of Liverpool, Limited.—Capital, £1,500, in £1 shares. Objects: To adopt an agreement with G. H. Atkinson for the acquisition of the business carried on by him at 66, Victoria Street, Liverpool, as Atkinson Brothers, and to carry on the business of photographic material merchants, chemists, druggists, etc. Registered office, 66, Victoria Street, Liverpool.

POISONING CASES AND INQUESTS.

During the seven days ended Wednesday, October 14, 1903, twenty-five cases of deaths by poisoning were reported :—

Poison.	Accident.	Suicide.
Arsenic	—	1
Carbolic Acid	—	1
Chloral	—	1
Chloroform	2	—
Hydrochloric Acid	—	1
Hydrocyanic Acid	—	2
Laudanum	1	3
Lead	1	—
Mercuric Chloride	—	1
Morphine and other Drugs	1	—
Overdose of Medicine	1	—
Oxalic Acid	—	5
Ptomaine	2	—
Strychnine	—	1
Kind not stated	—	1
Total	8	17

Arsenic.—A stockbroker's wife at Surbiton committed suicide by taking a quantity of Liquor Arsenicalis.

Carbolic Acid.—A woman in the south-west of London committed suicide by taking carbolic acid.

Chloral.—Dr. C. Sturrock died in a Dorking hotel, after taking twelve doses of a medicine containing chloral.

Chloroform.—A woman in Saltaire Hospital, and a man at the Sussex County Hospital, Brighton, died under chloroform.

Hydrochloric Acid.—A man at Bolton committed suicide by taking spirit of salt.

Hydrocyanic Acid.—Mr. R. R. Hallilay, surgeon, Leeds, and a rate-collector at Deptford committed suicide with prussic acid.

Laudanum.—A labourer was found dead at Rotherham; by his side were three bottles of laudanum. A man at Colwyn Bay, who had purchased small quantities of the drug from different chemists, died after drinking the whole quantity. A woman at Seaham Harbour died from an overdose of laudanum, and a woman at Bournville committed suicide with the drug.

Lead.—A woman at Newark died from poisoning with "white diachylon, self-administered, with a view to procure abortion."

Mercuric Chloride.—A pianoforte-maker at Haverstock Hill committed suicide by taking corrosive sublimate.

Morphine and Other Drugs.—A man at Shepherd's Bush died from syncope, accelerated by the excessive use of alcohol, morphine, cocaine, and other drugs.

Overdose of Medicine.—Heart failure, accelerated by an overdose of medicine, caused the death of a woman at Leamington.

Oxalic Acid.—An old soldier at Dawlish, a woman at Norwich, a horsekeeper at Camberwell, and a lady at Withington, near Cheltenham, committed suicide by taking oxalic acid, as did a woman at St. Olaves, who had been supplied with the acid by a chemist, all the statutory precautions being observed.

Ptomaine.—A manager of a brewery at Bristol died from ptomaine poisoning, caused by eating part of a decomposed goose. Ptomaine poisoning, following the eating of herrings, was responsible for the death of a woman at Stepney.

Strychnine.—A chemist's apprentice at Margate, by name Brown, committed suicide by taking strychnine. It was thought that his mind had been unhinged by overwork, as he had been studying hard for his examinations.

Other Cases and Inquests.—A Croydon lady died from falling downstairs while under the influence of alcohol, opium, and chlorodyne. A labourer employed at some glue works in Bermondsey was burned to death by sulphuric acid. The jury at the inquest recommended that a solution of sodium carbonate should be kept on the premises. A woman at Louth committed suicide by taking a poison, the nature of which was not stated.

Attempted Suicides.—Belladonna, carbolic acid, caustic potash, laudanum, salt of lemon, rat poison, and other substances were used in attempts at suicide.

NEW REMEDIES.

THE NOTES in this column embody recent suggestions in therapeutics, for the information of dispensers; they deal with novel applications of drugs and preparations in common use, in addition to new remedies strictly so-called.

Isarol, an Ichthyol Substitute.—Under the name of isarol or ichthyodine, Coliner has introduced a product obtained by treating crude ichthyol with sulphuric acid. It contains from 17 to 19 per cent. of sulphur, calculated on the dry substance, but in practice it is used as a viscous reddish-brown liquid, which contains 50 per cent. of moisture. It is very soluble in water, giving a perfectly clear solution. It burns without ash. It is claimed that isarol is a body of more definite composition than ichthyol.—*Nouv. Remèdes*, **19**, 374.

Quinoform: Hexamethylene-Tetramine Quinate.—G. Bardet has introduced to the Société de Thérapeutique de Paris a new salt which he highly extols for the treatment of uric acid diathesis. This is the quinate of formine or hexamethylene tetramine, a salt which is perfectly soluble in water, and may be taken in continued large doses, since it is absolutely devoid of toxicity. In addition to its action in eliminating uric acid from the system, it also exerts a marked antiseptic action on the bladder. The dose of 30 to 60 grains per diem is sufficient to obtain the best results, which may be described as a kind of uric acid purge, since the quinic acid causes a very considerable emission of hippuric acid, while the urates are removed as the soluble compounds of hexamethylene tetramine. It is not until the patient has been under treatment for some days that the amount of uric acid eliminated falls to a normal, or subnormal figure. Quinoform gives the best results in gout, when given in conjunction with a dietetic regimen. It is taken in cachets or simply dissolved in water.—*Bull. Gén. de Thérap.*, **146**, 110.

Citarine.—This is sodium anhydromethylene citrate. It is introduced as a uric acid solvent and eliminant. It is given in daily doses of 30 to 60 grains.—*Journ. Pharm. d'Anvers*, **59**, 335.

Chloroform in Gastralgia.—De Beurmann prescribes chloroform in various painful affections of the stomach in one of the following forms :—(1) Saturated aqueous solution of chloroform, 15; orange flower water, 5; water, 10. (2) Saturated aqueous solution of chloroform, 8; peppermint water, 2; syrup of opium (Codex), 5. A dessertspoonful of either of the above is given every quarter of an hour. (3) Codeine, 1; cherry laurel water, 75; distilled water, 375; saturated aqueous solution of chloroform, 500; chloroform, 25; tincture of iodine, 25. Five drops to be taken on a lump of sugar twice daily at meal times. (4) Cocaine hydrochloride, 5; saturated aqueous solution of chloroform, 5,000; distilled water, 5,000. A tablespoonful to be taken every four hours. (5) Cocaine hydrochloride, 5; menthol, 10; alcohol, *q.s.* to dissolve; then add saturated chloroform water, 7,500; orange flower water, 7,500. A tablespoonful to be taken every two hours.—*Bull. Gén. de Thérap.*, **145**, 640.

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

Explosion at a Manufacturing Chemist's.—On the morning of Monday, the 12th inst., an explosion occurred on the premises of Johnson and Son, manufacturing chemists, of Cross Street, Finsbury Pavement, and four men were carried out injured. The explosion, which was not of a serious nature, was caused by a small quantity of a chemical.

Royal Geographical Society.—An evening meeting will be held on Wednesday, November 4, 1903, at 8.30 p.m., at the Theatre, Burlington Gardens, W. A paper will be read on "Northern Nigeria," by Brig.-Gen. Sir Frederick D. Lugard, K.C.M.G., C.B., D.S.O. Sir Clements R. Markham, K.C.B., F.R.S., President, will occupy the chair.

Poor-Law Dispensers' Association.—The annual meeting of this Association will be held at Surrey House, Victoria Embankment, W.C., on Friday, October 23, 1903, at 8 p.m. Business—election of committee, Treasurer's statement, Secretary's report, alteration of rules, President's address. All Poor-law dispensers are cordially invited to attend.

A Good Recommendation.—Frederick Digby (52), who refused his address, was brought up at the Guildhall Police Court on Friday of last week for stealing a bottle of scent from Messrs. Grossmith, Son, and Co., in Newgate Street. Prisoner, who was remanded, said he was tempted to take this scent because he smelt it as he passed the door, and it was a fine perfume.

King's College Hospital.—The governors of King's College Hospital decided, at a meeting on Monday, the 12th inst., to take steps for the removal of the hospital to a site in South London, where, it is thought, there is more need for a hospital than on the present site. Lieut.-Colonel Clifford Probyn was opposed to the proposal, and moved an amendment, which was, however, not carried.

Royal Microscopical Society.—The next meeting of the Society will be held on Wednesday, the 21st inst., at 20, Hanover Square, London, W., at 8 o'clock p.m. precisely, when the following paper will be read: "Report on the Recent Foraminifera of the Malay Archipelago," by Fortescue W. Millett, F.R.M.S. Part XV. There will also be an exhibition of drawings and slides of British Hydrachnidæ, by C. D. Soar, F.R.M.S.

Fire at a Sheep-Dip Factory.—A large portion of the sheep-dipping chemical works of Messrs. William Cooper and Nephews, at Berkhamsted, was destroyed by fire early on Thursday, the 8th inst. Soon after one o'clock the engineering department was discovered to be in flames, and before the local fire brigade could get to work the large printing department was also burning. The letterpress and lithographic departments and the engine-room were destroyed, together with a large quantity of valuable machinery.

Sponge Importers Combine.—It is reported that an amalgamation will shortly take place between three of the largest firms of sponge importers in this country. The businesses with the depôts at the sponge fisheries and various continental agencies will be converted into a limited company. The present partners and their friends will hold all the ordinary shares, but it is probable that subscriptions will be invited from the trade and the general public for an issue of preference shares. Further particulars will be forthcoming at an early date.

Work of the Sheffield Analyst.—Mr. Alfred H. Allen, analyst for the City of Sheffield, during the quarter ending September 29, 1903, analysed, among other articles, three samples of compound liquorice powder, and four of camphorated oil, which were all found to be genuine. Four samples of ground ginger were also genuine, whilst one was of suspicious character, though no definite adulteration could be detected. One sample of sweet spirit of nitre contained less than one-half of the minimum proportion of ethyl nitrite, and in addition 1·89 per cent. excess of water.

University College, London.—A number of public lectures have been arranged to be given at this college during the ensuing months. Dr. Morris W. Travers will lecture on "Experimental Research at Low Temperatures," Mr. F. Soddy on "Radio-Activity," and Mr. E. C. C. Baly on "Spectroscopy and Spectrum Photography." Mr. Soddy's first lecture was given on Tuesday, October 13. Referring to the permanent efflux of energy from radium, he said that while it was possible that radium was an obstacle to a flow of energy which otherwise ran uninterrupted, it was more likely that the element itself was undergoing a change, gradual, indeed, but probably appreciable if sufficiently long-continued.

Hackney Technical Institute.—On Thursday, October 8, 1903, the new Hackney Technical Institute, in Dalston Lane, was formally opened, and on Monday the courses of technical instruction began. The cost of the new building, exclusive of site, has been nearly £16,000, but it is hoped that the governors will presently be in a position to build a much larger block fronting Dalston Lane. The equipment has cost over £3,000, and includes the best and most modern appliances for technical instruction. At Thursday's gathering Dr. E. Baxter Forman performed the opening ceremony. The Chairman explained that the governors had expended all their funds, but they hoped to receive further grants from the Technical Education Board for maintenance. Dr. Forman, in declaring the institute open, said he hoped it would ultimately form part of the University of London.

Nottingham Chemists' Cricket Club.—On Thursday, October 8, 1903, at the Maypole Hotel, Nottingham, the first annual supper and smoking concert in connection with the Nottingham Chemists' Cricket Club was held, Mr. T. Wilson in the chair. The toast of the evening was proposed by Mr. A. Eberlin, who said he was one of those who believed from the first that the club would be made a success. They had a most pleasant and happy season, and he hoped they would aspire to greater success in the future. In response, Mr. Prince said that, although they only started with sixteen members, they now had forty-four. He thanked the President and Vice-Presidents for the magnificent support which they had given to the club, and said that they were very fortunate in the selection of Mr. Lee as captain and Mr. Turton as vice-captain. A bat was presented by Mr. Brinson to Mr. H. Henstock, who headed the averages, and a ball was presented to Mr. Lee by Mr. Parkes.

PUBLICATION RECEIVED.

The Photographic Dealer and Optical and Scientific Trades' Journal. September, 1903. Vol. XV. No. 88. Pp. 55-80. Price 3d. London: Marshall, Brookes, and Chalkley, Limited, Harp Alley, Farringdon Street, E.C. From the Publishers.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. Geo. H. Aris has purchased the business of Mr. H. Oldham at 413, West Derby Road, Liverpool.

Mr. H. Chapman has been elected President of the Scarborough Chemists' Association for the ensuing year.

Mr. G. T. W. Newsholme has been elected to the presidential chair of the Sheffield Pharmaceutical and Chemical Society.

Mr. Councillor Critchley, of Blackburn, has been re-elected President of the North-East Lancashire Chemists' Association.

Sir John William Moore, of Dublin, has been appointed visitor to the examinations of the Pharmaceutical Society of Ireland.

Mr. J. Taylor, J.P., chemist and druggist, of 15, Lucius Street, Torquay, has been invited to retain the mayoralty of the borough for another year.

Bro. Edmund C. F. Green, chemist and druggist, Frome, was installed as Worshipful Master of the Royal Somerset Lodge, No. 973, on Thursday, October 8.

Mr. V. A. Wills has purchased the business of Mr. C. W. Jones, chemist, Victoria Street, Merthyr. Mr. R. Penrose Kernick, of Cardiff, was the valuer.

Mr. Miles Coward, M.P.S., who recently disposed of his business at Devizes, has taken over the old-established business at 45, Seaside Road, Eastbourne, lately carried on by Mr. E. G. Bayley.

Mr. W. Garsed, late Salters' Research Fellow in the laboratories of the Pharmaceutical Society, will shortly be leaving Bloomsbury Square to take charge of the pharmaceutical laboratory of Messrs. Dakin Brothers, manufacturing chemists, Middlesex Street, E.C.

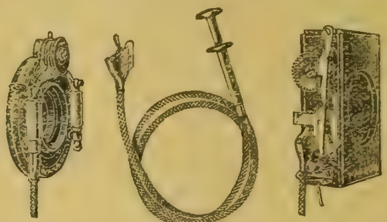
Mr. T. W. Robson, Ph.C., of Tiverton, who has for eleven years been manager at Lake's Select Pharmacy, and was previously for seven years with Mr. J. Hinton Lake at Exeter, is leaving England shortly for a long sea voyage. Mr. Robson has been ordered by his medical man to take such a holiday on account of overwork. His pharmaceutical friends wish him a pleasant trip and a speedy return to health.

TRADE NOTES.

Primus Lanternist's Pocket-Book.—Messrs. W. Butcher and Sons, Camera House, St. Bride Street, E.C., have issued this week their Primus Lanternist's Pocket-Book for 1903-4, and they intimate that they will be pleased to send a copy free of charge to any reader of the Journal on receipt of two stamps to cover postage.

Shop-fitting.—A handsome piece of work has recently been completed by Mr. H. Mills, shop-fitter and show-case manufacturer, of 163-5, Old Street, London E.C., who has furnished throughout the Herne Hill Station Pharmacy. Examples of Mr. Mills' work can be seen in all parts of London, and the shop at Herne Hill does him credit. The fittings are elegantly designed in oak and most conveniently planned, and the whole presents a handsome appearance.

"Poison Bottles."—Attention has already been directed in this column to the "Practical Poison Bottles," the manufacturers of which have recently placed on the market the "Ideal Bottle." There can be little doubt that, by the use of this poison bottle, both the pharmacist and the public are safeguarded, and cases of accident by poisoning should be unknown where such precautions are taken. Readers who are not already familiar with the "Practical Poison Bottle" would be well advised in making further inquiries about it from the wholesale houses.



A New Shutter Release.—Messrs. W. Watson and Sons, 313, High Holborn, W.C., have just patented a new shutter release for roller blind or diaphragm photographic shutters. This release has been designed to overcome the failings of the ordinary pneumatic ball and tube, due to the perishable nature of rubber. The registered name of the article is "Antinous." The new release is simple in construction, and, being of metal, with a fibre covering, is unaffected by climatic influences. It needs much less space than a rubber release, and can be fitted to many folding hand cameras which, when closed, will not accommodate the old-fashioned ball and tube. It is sold at 2s. 6d., and Messrs. Geo. Houghton and Son have been appointed sole wholesale agents.

Electrical Novelties.—Among the side lines adopted by chemists and druggists, not the least profitable is the sale of electrical novelties and appliances. During a recent visit to Messrs. F. Darton and Co.'s optical works in St. John Street, Clerkenwell, E.C., a representative of the Journal was shown quite a number of novelties, including house telephones, complete, at 7s. 6d. each; double coil bells at 12s. a dozen; a pretty electric light (four volts) bracket, for use in bedroom; several varieties of flashlights, for carrying in the pocket; a handy little voltmeter (patented), specially designed for the use of automobilists; and a number of small electric motors. In the course of conversation, Mr. Darton aired a grievance against the pushful German manufacturer. Picking up one of his small "Eclipse" motors, Mr. Darton stated that he had recently been shown an exact imitation of it, put up in the same style, which had been placed on the foreign market at a price considerably less than the "Eclipse" could be sold at. "But," said Mr. Darton, "that is not the worst of it. We take great pains to make our motors perfect in every respect, so that they will give satisfaction, whereas the imitations will not give satisfaction. Consequently, those who purchase the German-made article, under the impression that it is our make, will not buy from us again." Then Mr. Darton gave other instances of how things brought out by his firm had been copied in Germany, all of which tended to show that purchasers should be chary of buying articles purporting to be of British manufacture when offered at a lower price than usual.

WHO'S WHO IN PHARMACY.

COWLEY, Robert C. *b.* 1870. *Apprenticed:* J. Young, Douglas, Isle of Man. Liverpool School of Pharmacy, 1890-1; Ph.C., 1891; Principal, Liverpool School of Pharmacy; President, Liverpool Chemists' Association, 1902. *Publications:* 'Comments on the Alkaloidal Estimations of the B.P. 'A System of Preliminary Testing.' Author and joint-author of several papers dealing with pharmaceutical and chemical subjects.

GLEDHILL, Robert. *b.* 1856. *Apprenticed:* A. Foster, Dewsbury. South London Coll. of Pharm., 1879-80. C. and D., 1880. Business: Westgate Pharmacy, Dewsbury. A Founder of the Parochial Hall, St. Matthew's, Dewsbury. Vice-Pres., Dewsbury Tradesmen's Assoc., 1899-1902; Hon. Sec. Dewsbury and District Chemists' Assoc., 1898-9; Vice-Pres., 1900-1; Treas., 1902; now President; was the first Local Sec. of the Ph. Soc. for Dewsbury, and is now Divisional Secretary.

HANBURY, Cornelius, M.R.C.S., 1849; L.S.A., 1850; F.C.S., F.I.C. *b.* 1827. *Apprenticed:* Henry Callaway, M.R.C.S., L.S.A., who was subsequently M.D., D.D., and Bishop of St. John's, South Africa. St. Bartholomew's Hospital, [illegible], and Birkbeck Laboratory, University College, 1851. Having completed medical studies in 1850, never practised, but went to the business of Allen Hanburys and Barry, and in 1870, on the retirement of Daniel Hanbury, F.R.S., became sole proprietor of the business; was joined by only son in 1875, and since 1893 has been Chairman of Allen and Hanburys, Limited. Was member of the Council of the Pharmaceutical Society, 1870 and 1875-78; Treasurer from 1876 to 1878; a Governor and past-Almoner of St. Bartholomew's Hospital. Before finishing work in the anatomical school of St. Bartholomew's Hospital, originated the plan of depicting on the bones the attachments of muscles and painted a nearly complete set from actual dissections, the demonstrators in the dissecting room at the time being the late Mr. Holmes Coot and Mr. Luther Holden. Shortly afterwards Mr. Coot published a small book on the bones with the novel feature of illustrations indicating the attachments of muscles, and subsequently Mr. Holden brought out his standard work on Osteology with beautiful illustrations of the origins and insertions of the muscles. *Publications:* "Notes on Chemicals at the Paris Exhibition, 1862," in *Pharmaceutical Journal*; on "Improved Method of Washing Photographic Prints, with Description of Special Machine," *Journal of Photographic Society*; "Improved Apparatus for the Electrolytic Production of Chlorine and Caustic Soda," Patent, No. 8,176, 1893.

HOLMES, Edward Morell. *b.* 1843. *Apprenticed:* S. Hayward, Chelsea. School of Pharmacy, 1859 (certif. in all subjects). Bronze Herbarium Medal, 1863; Ph.C., 1860; Hon. Memb., Coll. Pharm., Philadelphia, 1883; F.L.S. and Member of Council, L.S., 1882-5; Lect. Botany at Westminster Hosp. Med. School for three years; Hon. Memb., Coll. Pharm., New York, 1884; Juror at Int. Forestry Exhibition, Edin., 1884; Hon. Memb. Neerlandische Maatschappig d. Bevorderung van Nijoerheid, 1887; Lect. on Mat. Med. to Ph. Soc., 1888-1890; Flückiger gold medallist, 1897; Hon. F.R.H.S., F.R.B.S., Edin., and Loc. Sec. for London; Hon. F.R.B.S., Lond.; Hon. Memb. Essex Field Club; Corr. Member Glasgow Nat. Hist. Soc.; Vice-Pres., E. Counties Nat. History Assoc.; Pres., B.P. Conf., 1900. *Publications:* 'Mosses, Scale-Mosses, and Lichens of Devon and Cornwall,' 1868-1869; Holmes' 'Bot. Note-Book,' 1878; 'Young Collector's Handbook of Fungi,' 1886; 'Revised List of British Marine Algæ' (with E. A. Batters); Articles on Drugs in 'Encycl. Britan.,' Vols. X.-XXIV.; County Lists of Cryptogams for 'Vict. Hist. of Counties of England,' numerous papers in *Pharm. Journ.*, etc.

SAUL, John Edward, F.I.C. *b.* 1861. *Apprenticed:* W. Budden, Bootle and Liverpool. Royal Institution Laboratory, Liverpool, 1882; Liverpool School of Pharmacy, 1883; Central School of Chem. and Pharm., London, 1884; Pereira Medal, 1885; Ph.C., 1884; Chemist to Savory and Moore, Ltd.; Hon. Sec. Chem. Assist. Assoc., 1885; Vice-Pres. 1887; Examiner to Ph. Soc., 1888. *Publications:* Various papers and notes.

STEPHENSON, John B. *b.* 1828. *Apprenticed:* Duncan, Flockhart, Powell and Co., Leith; Edinburgh University, 1845-46; Ph.C., 1858; Partner, Jas. Robertson and Co., Edinburgh, 1850 to 1865; subsequently in business in Edinburgh in his own name, retired 1896; Examiner Ph. Soc., Scotland, 1876-1893; President N.B. Branch Ph. Soc., 1876-1881; President Br. Pharm. Conference, 1885-86. *Publications:* 'Medicinal Remedies,' 1893. Also occasional Papers to Pharm. Soc., etc.

STEPHENSON, Thomas, F.C.S. *b.* 1864. *Apprenticed:* J. B. Stephenson, Edinburgh. Ph.C., 1886; Edinburgh School of Medicine, 1882-1885 (Prizeman, 1883); Ph. Soc. Herbarium Medal, 1883. Lieut., Bombay Vol. Rifles; now Queen's R.V. Brigade, Royal Scots. General Manager Phillips and Co., Ltd., Bombay, 1899-1901, now in business at 137, George Street, Edinburgh. *Publications:* Author of original editions, 'Prescribers' Pharmacopœia,' 1889, 1891, 1892, 1893. Papers in *Pharm. Journ.*, *Indian Medical Record* (Calcutta), etc.

WATSON-WILL, W. *b.* 1853. *Apprenticed:* John Reid, Montrose. Ph.C. 1878. Proprietor, The Metropolitan College of Pharmacy, London. Hon. Sec. Federation of Local Pharm. Assocns., 1903. *Publications:* 'Synopsis of Materia Medica,' 'Prescription Reading.'

WRIGHT, Robert, F.C.S. *b.* 1859. *Apprenticed:* J. C. Thresh, Buxton School of Pharmacy, 1879 (Bronze Medal for Prac. Chem., and certifs. of honour). Ph.C., 1882. Business: Apothecaries' Hall, High Street, and 5, Devonshire Colonnade, Buxton. Examiner to Ph. Soc., 1896. *Publications:* Numerous papers and notes in *P.J.* and elsewhere, alone or in conjunction with E. H. Farr.

PRACTICAL NOTES AND FORMULÆ.

Hoof Ointment and Veterinary Healing Salve.

Wool fat, 24, ceresin, 9, are melted together; castor oil, 16 vaseline oil, 50, are added; the source of heat withdrawn, and glycerin, 6, wood tar, 6, and carbolic oil (5 per cent.), 5, mixed in.—*Seifensieder Zeit.*, **30**, 57.

Carbolised Antiseptic Hoof Grease.

Vaseline oil, 90; ceresin, 10; lamp-black, 5; crude phenol, 0·5; nitro-naphthalin, 0·2. Melt the ceresin in the vaseline oil, then mix in the other ingredients.—*Seifensieder Zeit.*, **30**, 58.

Application for Ear-ache.

Camphorated chloral, 1; glycerin, 6; oil of sweet almonds, 2. The region round the painful ear is rubbed with the mixture. It is claimed that pain is relieved "as if by magic."—*Bull. Gén de Thérap.*, **145**, 720.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

The Drug Sales.

London, Thursday, October 15, 1903.

The supplies catalogued at to-day's auctions were exceptionally large, the article offered in the largest quantity was (as has recently been the case at preceding auctions) Tinnevelly Senna. The offerings comprised old and new drugs, and the catalogues numbered nineteen. On the whole, there was a good demand, and sales were made with a fair amount of competition. For the most part the goods which found buyers were knocked down at firm rates. The sales continued until late in the afternoon. The Senna sold with good competition at prices equivalent to those obtained at the last sales. Honey, which sold rather irregularly, realised higher prices. Coca Leaves were also dearer. Aloes sold fairly well, and Cardamoms were again cheaper. Menthol was firmly held as regards the Kobayashi offerings, and one case of Zazawa was sold. Ergot was held at very high prices, and Ipecacuanha was dearer.

ALOES.—Dark livery Curaçoa realised up to 20s., better quality fetching 25s.; for soft Cape, fairly bright, from 42s. to 48s. 6d., according to quality, was obtained, and for harder varieties up to 51s. was paid.

AMBERGRIS.—Two lots of black were sold, but grey qualities were withdrawn at high prices.

ARECA NUTS—Were sold at 6s. per cwt., "subject" for an inferior sample. Better quality were firmly held for 12s.

BALSAM TOLU.—11d. per lb. was obtained for good fair in square tins.

BUCHU LEAVES.—There was no demand for these, which were bought in at firm prices.

CAPE ARGOL.—Dull and dusty sold at 49s. per cwt.

COCA LEAVES.—Good green Ceylon sold at an advance, 1s. 4d. per lb. being the price paid; leaves not quite so good realised 1s. 2d., and inferior qualities found buyers at lower prices.

COLOMBO ROOT.—60 bags washed bright sorts, but small, sold without reserve at 12s. 6d. to 13s. per cwt.; for small brown sorts 16s. was paid.

CROWN BARK.—Five serons fair bright Huanaco sold at the advanced price of 10½d.; fair bright Loxa sold at 10d.

CARDAMOMS—Were again lower.

ERGOT.—A bid of 1s. 9d. was refused for good sound Spanish, which were withdrawn at from 2s. to 2s. 6d. per lb.

EUCALYPTUS OIL.—10 cases 68 per cent. eucalyptol, Umney's analysis, were sold at from 1s. 1d. to 1s. 2d. per lb.

GAMBOGE.—No bids were forthcoming for this article, which was firmly held.

GUM ASAFOETIDA.—For common broken brown block a bid of 39s. wes refused, 42s. being wanted.

GUM BENJAMIN.—Siam hard almonds, nougat block, bought in at £20; ditto smaller almonds, held for £15; ditto very small almonds, bought in at £7. Very hard brown block sold at 82s. 6d.; small almonds and siftings in block sold at £7 7s. 6d. The highest price obtained for Sumatra was £6 5s.; good seconds were held for £7.

GUM MYRRH.—A case of picked sold at £6 10s. per cwt.

HONEY—Obtained considerably better prices. Jamaica sold very irregularly up to 27s. 6d. per cwt. California was taken out at 37s. 6d.

IPECACUANHA—Is dearer. 5s. 3d. to 5s. 4d. was paid for ordinary Rio, and 5s. for the cultivated. A quantity of East Indian was withdrawn from one of the catalogues.

KOLA NUTS.—For good fair West Indians 5¼d. was paid; mouldy were knocked down at 3½d.

LIME OIL.—Hand pressed realised 3s. 3d.; distilled 1s. 5d. per lb.

MENTHOL.—Kobayashi was firmly held at 24s. to 25s.; a case of Zazawa, off colour, was sold at 21s. per lb., this being lower than the price obtained for this brand privately. In the open market sales of Kobayashi have been made at 22s. 6d. spot.

NUX VOMICA.—Small bright beans realised from 6s. to 7s. 6d.

ORANGE OIL.—A quantity was sold at low rates for inferior quality.

PEPPERMINT OIL.—A few cases of Japan dementholised were taken out at firm prices.

RHUBARB—Was firmly held, but very slow of sale.

SARSAPARILLA.—10½d. to 11d. was paid for Lima.

SENNA—Realised full prices as compared with last auction.

TURMERIC.—A quantity was sold without reserve at low prices for inferior quality.

WAX—Full prices were obtained for the various varieties, but the demand was not very great. Three bales Mozambique sold at £6 10s.; Jamaica realised £7, 10s. to £7 12s. 6d.; Australian was held for £6 15s., and East Indian for £7 per cwt.

General Markets.

The general market in Drugs and Chemicals has been decidedly dull during the past week. There are few fluctuations to record. The following are a few quotations:—

ACID CITRIC.—Easier at 1s. 0½d. per lb.

ACID TARTARIC.—English on the spot, 1s. 1d.; foreign, 1s. 0¼d. to 1s. 0½d.

ALUM.—Lump, £5 12s. 6d.; powder, £6 2s. 6d.

ARROWROOT.—At Wednesday's sales over 300 barrels manufacturing St. Vincent sold at 2d. and 50 tins at 3½d.

BISMUTH CARBONATE.—8s. 1d. per lb.; subnitrate, 7s. 4d.

BLEACHING POWDER.—English, £5 2s. 6d.

BORACIC ACID.—Crystals, 22s. 6d.; Powder, 24s. 6d.

BORAX.—Crystals, 13s. 6d. to 14s. 6d. per cwt., according to quantity; powder, 15s. 6d. to 16s. 6d.

BROMIDES—Unaltered. Potassium Bromide is quoted at 1s. 11½d. per lb.

CARBOLIC ACID.—Steady. Crystal 34° to 35° C., 5¼d.; detached crystals 39° to 40° C., 7d. per lb. Crude 60° F., 1s. 6½d. per gallon. Liquid (95 to 98 per cent.), of pale straw colour, 1s. 2d. per gallon.

CASCARA SAGRADA.—90s. is now quoted. Only small sales have been made.

CINCHONA BARK.—The Java shipments during the first half of the present month amounted to 568,000 Amsterdam lb. as against 1,070,000 lb. during the corresponding period last year.

CINNAMON.—Quillings sold at the Spice sales up to 7½d.

COCAINE—15s. 6d. to 16s. per oz., according to quantity, for the hydrochloride, and 18s. to 18s. 6d. for the pure alkaloid.

COCOANUT OIL.—Ceylon spot, £25 10s.; Cochin spot, £31.

CODEINE.—No alteration since last week; 9s. 5d. per oz. is the price of the pure alkaloid.

CLOVES.—Penang was held at the Spice auctions for 9½d. This was fair picked, rather dark. In the private market Zanibar are steady, and only small transactions have been made.

CREAM OF TARTAR.—87s. is the price for 98 per cent.

GINGER.—A fair amount of Cochin sold without reserve at the Spice sales on Wednesday, cut kinds at slightly lower rates.

GLYCERIN.—£3 8s. per cwt. for ½-ton lots. Schering's double distilled, 1·260, 73s. per cwt.; ditto, distilled, 71s.

HYDRASTIS.—The prices are 3s. 3d. to 3s. 4d.

IODIDE OF POTASSIUM—Unchanged at 8s. 9d. per lb.

IODINE—9s. 9d. to 10s. per lb., for the resublimed, according to quantity.

IODOFORM.—11s. 8d. per lb., for the pure crystals or powder.

LINSEED OIL.—London spot pipes £18 12s. 6d.; barrels £18 17s. 6d.

MERCURIALS.—Calomel, 2s. 8d.; corrosive sublimate, 2s. 4d.; red precipitate, 2s. 11d.; white precipitate, 2s. 11½d.; mercuric sulphate, 2s. 4d. per lb.

MORPHINE—Unaltered at 4s. 6d. to 4s. 8d. per oz. for the hydrochloride, according to quantity.

OLIVE OIL.—Mogador, £33.

OPIUM.—There is no change in any of the varieties, and the market is very quiet.

OXALIC ACID—2⅝d. to 2⅞d., delivered free London.

PALM OIL.—Lagos on the spot is quoted £28 15s.

PEPPERMINT OIL—Is quiet, buyers holding off for the moment, but the tendency is upward. H.G.H. 15s. 3d. spot. Wayne County is quoted at 12s. 6d. to 13s., and Stilwell's at 12s. 6d.

PIMENTO.—None sold at Wednesday's sale.

QUININE.—Sales of the favourite German brands have been made from second-hand during the week at 1s. 0½d. per oz. for the sulphate.

SENEGA.—3s. 3d. is the price quoted.

SHELLAC—Is again dearer, and 195s. is asked for fair T.N. orange.

SULPHATE OF AMMONIA.—Prompt on Beckton terms, £12 7s. 6d. net.

TURPENTINE—Quiet. American spot, £2 3s.

QUICKSILVER—£8 7s. 6d.

Cosmetic Cream.

J. T. Pepper describes the cream produced with the following formula as being a most satisfactory and efficient preparation, both for summer and winter use:—Quince seeds, 45; boric acid, 30 parts; glycerin, 600 to 750; alcohol (90 per cent.), 250; distilled water, 3,000; tincture of benzoin, simple, 1:10, 15 fluid parts; menthol, 0·15; extract of white rose, 10; bergamot oil, 1. Carefully crush the quince seeds in a mortar, so as not to powder the dark-coloured seed-coats, and macerate in the water for forty-eight hours, having previously added the boric acid. Shake frequently and thoroughly during this period. Then strain, add the glycerin, and finally the other ingredients, all previously mixed with the alcohol. Any desired perfume may be substituted for the "white rose." It is well to keep the water warm during a part of the maceration process, since the resulting mucilage will then have a thicker consistence.—*Amer. Drugg.*, **42,** 157.

PATENTS AND TRADE MARKS.*

New Patent Applications.

IMPROVEMENTS IN THE MANUFACTURE OF AROMATIC BASES (No. 24,869 of 1902).—A. Meyenberg, Ph.D., 9, Nelson Street, Plymouth Grove, Manchester; R. J. Levy, 36, North Road, Clayton, Manchester; and the Clayton Aniline Co., Limited, Clayton, Manchester. Relates to the manufacture of paranitraniline from paranitrochlorobenzene by submitting the latter to the action of ammonia at a high temperature or under a high pressure in the presence of water or a dissolving agent, or by employing the paranitrochlorobenzene in a more readily soluble form, such as in the form of its sulphonic acid. In the latter case the inventors make use of the fact that paranitro-orthosulphoaniline can be easily hydrolysed into paranitraniline and sulphuric acid by means of mineral acids. Orthonitraniline may be obtained by treating orthonitrochlorobenzene in a similar manner.

IMPROVEMENTS IN ASEPTIC TABLES FOR SURGICAL AND OTHER OPERATIONS (No. 27,723 of 1902).—J. E. Arnold, of the firm of Arnold and Son, 26, 30, and 31, West Smithfield, London. This invention provides that the table bed, constructed of jointed parts, is capable of being suitably heated, and the heat maintained by means of under tanks or containers to hold a heating fluid. Improved means are also provided whereby the height of the table can be readily adjusted to the height of the operator, the "Trendelenburg" position can be obtained with considerable ease, the head can be raised to any degree of elevation by mechanical means, each leg rest can be adjusted to any desired angle, and the table can be readily placed upon three wheels for moving about in the usual manner. It is further constructed in such a manner that the drain is useful in any position, whether horizontal or elevated.

NOTE.—Opposition to the grant of any of the above patents must be lodged at the Patent Office, on or before November 23, 1903.

New Trade Mark Applications.

"**AHOY**" label (device of Ironclad, etc.), for powdered hypochloride of sodium for use in manufactures, mineral dyes, and substances included in class 1 for preventing rust, by Chemische Werke Hansa Gesellschaft mit beschränkter Haftung. Am Brüggeweg, Hemelingen, near Bremen, Germany. 254,738.

"**PERSAL**" label, for a chemical etching salt for copper and brass, by A. W. Penrose and Co., 109, Farringdon Road, E.C. 256,638.

"**SULPHEX**" ("Sulph" disclaimed), for chemical substances used in manufactures, photography, etc., by D. Fürstenau, 4, Victoria Street, S.W. 256,932.

"**CLERON**" ("Clear" disclaimed), for cut sensitised films (for photography) and roll sensitised films (for photography), by Brooks-Watson Daylight Camera Co., Limited, Abercromby Works, Great Homer Street, Liverpool. 256,977.

"**LICENSED VICTUALLERS' LIVER TONIC PILL**" (signature) label (signature only claimed), for pills, by C. Johnson, 9, Guy Street, Bermondsey, S.E. 254,363.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and 'Patent Notes for Inventors' free on application.

(1) "**SOLYPTOL**" and monogram, and (2) "**SOLYPTOL SOAP**" label, for (1) chemical substances prepared for use in medicine and pharmacy, and (2) medicated soaps for human use, by F. H. Faulding and Co., 54, Great Tower Street, E.C. 256,794-5.

"**RENSO**," for a corn cure, by D. Posener, 4, Rowhill Mansions, Clarence Road, Clapton, N.E. 256,203.

"**ELYSIAN**," for a health salt, by Newball and Mason, Beech Avenue, Sherwood Rise, Nottingham. 256,900.

"**SOLPTOL**" soap label, for toilet soaps, by F. H. Faulding and Co., 54, Great Tower Street, E.C. 256,796.

"**PRIZENA**" ("Prize" disclaimed), for perfumery, toilet articles, etc., by S. Storton, 106, Wellinboro' Road, Northampton. 256,249.

Note.—Opposition to any of the above trade marks must be lodged at the Patent Office, on or before November 14, 1903.

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

Mr. Waddington and the West Riding Federation.

I was very much surprised (not at all angry) when I read the remarks made by Mr. Waddington at a recent meeting of the Bradford Chemists' Association, and which referred to the drafting of the rules of the West Riding Federation. I naturally expected that his remarks would not be allowed to pass unnoticed by the delegates from the Dewsbury Association, nor was it proper that they should be, seeing that they were so glaringly misleading. From your last issue I cull that Mr. Waddington, in spite of the complete denial and exhaustive explanation to the charges made, still remains obdurate. I attended the preliminary meeting at Dewsbury simply as an interested spectator, and I state emphatically, in spite of Mr. Waddington's remarks to the contrary, that not only did the utmost fairness and impartiality prevail, but that the charge laid at Dewsbury's door, viz., "that of having a fully prepared scheme," is entirely without foundation and devoid of truth. Why Mr. Waddington should have thought proper to make such unjustifiable assertions passes my comprehension. Has he any antipathy against us, or does he owe us some grudge? Even after the exhaustive proofs given by Mr. Broadhead, and these taken from the minutes of the meetings, yet Mr. Waddington remains unconvinced. As Bradford was responsible for the majority of the resolutions, and taking into consideration that five associations were represented at the meeting, it is impossible that Dewsbury alone could have carried any scheme they might have desired into effect. Then, again, the rules drafted at Dewsbury were afterwards submitted to a meeting at Bradford to be either ratified or amended. Why did not Mr. Waddington complain then? and why has he remained silent so long? I am sorry to hear the horn of discord sounded in regard to the Federation's work, and that without the slightest foundation, and I sincerely hope that Mr. Waddington is the one solitary person who entertains the idea that Dewsbury desires to predominate in the general working of the Federation. Perhaps delegates from other associations who were present at the meeting might successfully endeavour to disabuse Mr. Waddington's mind and remove any existing doubts. I sincerely hope the Federation will continue to thrive, and that for the benefit of the associations concerned, and that we shall be more united and fortified than we have been in the past. I would point out to Mr. Waddington that he is only one delegate from one association, and if all the business is not conducted entirely according to his own ideas, let him bow submissively to the ruling of the majority and accept it with good grace. It is quite patent to all that if such petty bickerings and twaddle are allowed to take place the harmonious and effective working of the Federation will be greatly hindered, which is neither necessary nor desirable.

Ossett, October 13, 1903. S. N. Pickard.

Stamped Packets of Medicines.

I notice in the report of the meeting of the Tees-side Association last week a very important question is touched upon. Mr. Lee mentions what he considers to be an evasion of the Stamp Acts, by dealers opening large stamped packages of Perry's Pills and retailing them out in pennyworths in a paper recommending them for various ailments, and accompanied by an empty labelled box. Now, I think this is a matter which chemists ought to take up, and use their influence with the Inland Revenue authorities to put an end to it, or goodness knows where it will end. I take it that there is nothing in the Stamp Act to allow this, but that it is simply a privilege or concession which the Inland Revenue Commissioners have granted, but which they can withhold if they consider the privilege is being abused, and as it undoubtedly is in the above-mentioned instance. The dealers who principally do this sort of thing are the grocers and the smaller fry of shopkeepers, and in most cases, through competition, the pharmacist is compelled to do the same. Why should the Inland Revenue authorities withhold the privilege of opening stamped packages? The following are some of the reasons which suggest themselves to me:—(1) The public won't buy 7½d. worth of goods if they can get them in smaller quantities, say pennyworths; but if they can't get less, they will "fork out" the 7½d. if it is a necessity, which medicines invariably are. This is proved by the fact that it is the working classes principally who buy the high price pills of the pink or kidney order. The result would be, then, an increased sale, more of them, and, consequently, an increased revenue. (2) The chemist is allowed to break open and retail out Beecham's Pills or Doan's Pills, but cannot do so with his own preparations. [He can do so.—Ed. *P.J.*] Why not treat all alike, instead of making fish of one and fowl of another? (3) If a dealer opens a box of Holloway's Pills at, say, 2s. 9d., and sells them out in small quantities at such a rate that they bring in, say, 3s. 6d., is not this defrauding the Revenue? Stamp duty is only paid on 2s. 9d. instead of on 3s. 6d., the real retail value. (4) I was told some time ago that in some districts dealers with no medicine licence are in the habit of retailing out dutiable medicines in small quantities, the impression being that, because they are not selling them entire and stamped, no licence for stamped medicines is required. This, to me, is clearly an evasion of the Act; also, as this is a question of no small importance to the majority of retail pharmacists, I trust the subject will be thoroughly ventilated at the various associations during the coming winter session and influence brought to bear on the Inland Revenue authorities to annul the privilege of breaking open stamped packages of medicines. I think the Revenue would benefit, and am quite sure the chemist would, and I don't think the proprietors would complain, because the system of breaking open packages very often leads to fraud, and the public have no guarantee what they are getting. The distinction and concession already given to chemists is good, but to get this also would be still better. At any rate, it behoves the trade to be up and doing, and ready to defend the coming attack of the Grocers' Association upon the concession already granted to us.

Halifax, October 12, 1903. W. R. Fielding.

Œnanthe Crocata.

Will you kindly permit me to ask, in the columns of your widely-circulated Journal, if any member of the Society who takes an interest in botany, and in whose neighbourhood *Œnanthe crocata* is plentiful, would forward a few pounds of the fresh root to me, an opportunity for the chemical investigation of its active principle having recently presented itself. It is thought that the somewhat indefinite results hitherto obtained may have been due to the dried root having been employed and that more definite knowledge of its extremely poisonous active principle might be obtained from the fresh root. Although the stems will probably have withered at this time of the year, and only a few root leaves be present, the root will probably be in an active state, and the plant readily recognised by botanists who know where to find it. An indication of its appearance is given in the *Pharmaceutical Journal* of May 24, 1902, p. 431.

17, Bloomsbury Square, London. E. M. Holmes.
October 13, 1903.

Hamamelin and Hyoscyamus Suppositories.

Having had a varied and somewhat extensive dispensing experience, I beg to say, in reply to the question of your correspondent, "Senegæ," that the hamamelin and hyoscyamus suppositories should be made in the cold with a little oil of theobroma and starch powder. Having made a pliable mass, it should be equally divided, and each piece rolled in a little talc and press to shape *pro tanto*, or by using a special mould for the purpose.

Middlesbrough, Oct. 13, 1903. J. W. Hornsby.

Royal Masonic Institute.

I beg to thank you for inserting the notice in the Journal of my appeal to pharmaceutical masons for their votes and support on behalf of my son, who was a candidate at the election of the Royal Masonic Institute for Boys. Will you kindly, through your columns, express my thanks to those who responded to my appeal? I am glad to say my son was a successful candidate, polling 4,166 votes. I should especially wish to thank W. Bro. M. Carteighe, W. Bro. Fred Bascombe, and W. Bro. F. J. Harrington, all of the "Galen" Lodge, 2,394, for their exertions on my behalf in securing such a large number of votes.

London, October 10, 1903. Chas. Spencer, W.M., 1,306.

MARRIAGE.

Cole—Seabrook.—On September 30, at S. Augustine's, Rugeley, by the Rev. F. G. Cole, M.A., Vicar of Bilton-in-Holderness, brother of the bridegroom, assisted by the Rev. A. Moncrief, M.A., Vicar of the parish, Reginald Cole, of Biddulph, to Jessie May, younger daughter of Robert Seabrook, of Rugeley.

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Whooping Cough Mixture (J. S.—97/10).—Replace part of the water by chloroform water.

Foot Powder (W. H. L.—97/11).—There is nothing on your label to render the preparation liable to duty.

Acid in Fixed Oils (W. A. W.—97/27).—The free acid can be removed by shaking the oils with strong alcohol.

Sections of Woods (A. G. C.—97/14).—Write to the British Botanical Association, York, which will doubtless be able to meet your requirements.

Labels (F. G. T.—97/21).—Assuming that you have specified the names of all the medicinal ingredients, the labels will not render the preparations liable.

Preliminary Examination (A. H.—97/15).—Your letter, with enclosure, has been handed to the Secretary of the Pharmaceutical Society, from whom you will hear in due course.

Atlas (J. D.—97/28).—Mr. E. Stanford, 12, Long Acre, London, W.C., supplies large outline maps of the various continents, suitable for making an atlas of materia medica.

Labels (P. S.—97/17).—We have returned your duplicate labels, most of which appear to render the preparations liable to duty. Those which are not marked appear to be exempt.

Recipes (W. N. G. L.—230/23).—The reason is that many hundreds were received before yours, and that, as far as possible, they are being published in the order in which they were received.

Recipes (W. R. J.—230/35).—(1) Yes, you will be at liberty to print other words of recommendation upon the labels. (2) The law of copyright will prevent anyone from selling pirated copies of the 'P. J. Formulary.'

Pumpkin Seeds (W. W.—97/20).—The seeds contain a reddish fixed oil and a greenish-brown, acrid, bitter resin, which acts as a tænifuge. You will probably find the liquid extract of male fern an efficient substitute.

Asthma Remedy (A. D. W.—97/16).—It appears to contain free chlorine and some nitrobenzol, but you should have it properly analysed if you wish to know its exact composition. The bottle has been returned to you.

Advertisement (C. F. H.—230/19).—Such advertisements are far from uncommon nowadays, and no good purpose is served by directing attention to them. Moreover, the matter is not likely to affect you as a chemist and druggist.

Cough Emulsion (H. S.—97/19).—The preparation will be considered liable unless you state the names of all the medicinal ingredients upon the label, or indicate thereon that the formula is published in the 'P. J. Formulary' or some other well-known book of reference.

Skin Cream (J. R.—97/30).—Try the following and report:—Glycerin, 5 fl. ounces; benzoic acid, 30 grains; carbolic acid, 30 minims; extract of witchhazel, ½ fl. ounce; alcohol (90 per cent), ½ fl. ounce; perfume, *q.s.*; quince mucilage (20 grains of seeds to 1 fl. ounce), sufficient to make 1 pint.

Neuralgia Powders (J. J.—97/18).—They are already exempt if they consist of phenacetin alone. If, however, they contain any other ingredient you must publish the formula and remove from the label the words in the line following the word "powders." Send your recipes in at once, and they will be published if not in any way unsuitable.

Labels (G. C.—97/22).—(1) If the mixture is made in accordance with Recipe No. 8, it will be sufficient if you label it "Cough Mixture—P.J.R. 8." (2) It will be necessary to state on the label "Blaud's Pills, B.P.," if you supply the official Pilula Ferri; if not, you must indicate in what well-known book of reference the formula for the pills appears.

Labels (A. D.—97/29).—You should send duplicate labels if you wish to have the "liable" ones marked and returned. We have returned the labels which do not appear to be "liable." The label for Blaud's Pills (or a separate slip label) should bear an indication of the book wherein the formula appears, *e.g.*, "B. P." The words "all impurities" should be deleted from the label for Hair Restorer. With regard to the rest, pills included, you should send the formulæ for publication in the 'P. J. Formulary.'

Polarimetry (J. B. S.—97/24).—Nearly all the London technical institutes and polytechnics have a physical laboratory. Probably by arrangement with the director of the nearest institution you could receive instruction in the subject you mention. Of books on the chemistry of essential oils, that by Parry may be recommended. A larger work is that prepared for Messrs. Schimmels, by Gildemeister and Hoffman. It is impossible at present to arrange for a series of articles on the subject in the Journal.

Compound Syrup of Figs (W. W.—97/12).—(1) Digest at a moderate temperature for one hour figs, cut small, 8 ounces, and distilled water, 1½ pints, then boil; add senna, 4 ounces, digest in a covered vessel for two hours, and express 13 fl. ounces of liquor. Next, digest the marc for two hours with boiling distilled water, 5 fl. ounces, and press. Mix the expressed liquids, boil for five minutes, cool, add alcohol (90 per cent.), 2½ fl. ounces, stir gently, and set aside for two hours; then filter, wash the filter with distilled water, evaporate the mixed liquids to 14 fl. ounces and dissolve in it refined sugar, 10 ounces. Finally, add 50 minims of the following mixture:—Oil of peppermint, 5 minims; oil of cloves, 20 minims; chloroform, 25 minims; alcohol (90 per cent.), 150 minims. The finished syrup should measure 1 pint. Another formula for the syrup is given in the 'P. J. Formulary' this week. (2) Pass it through lime water.

DEATHS.

Carr.—On October 8, Walter Paterson Carr, Chemist and Druggist, Berwick-on-Tweed. Aged 63. Mr. Carr was a son of the late Mr. William Graham Carr, chemist, of Berwick, and brother of Professor George Bogue Carr, of Lincoln College, U.S.A. He was apprenticed to his father, and afterwards served with Messrs. Corbyn and Stacey, London, returning to Berwick to take over his father's business. The firm had an extensive connection in cod-liver oil, for which it was awarded medals at several international exhibitions. Mr. Carr took an active part in the public affairs of Berwick, being a freeman of the borough, a sidesman and churchwarden of the parish church, a member of the select vestry of the parish, a member of St. David's Lodge of Freemasons, and at one time he served on the Town Council.

Duffey.—On October 13, Sir George Frederick Duffey, ex-President of the Royal College of Physicians, Ireland. Aged 60. Sir George Duffey, who was educated at Trinity College, Dublin, where he took the M.D. degree, passed his professional life in Dublin, and had filled many important positions there, being that of President of the Royal College of Physicians, Ireland, from 1896 till 1898. He was Professor of Materia Medica at the Royal College of Surgeons, Ireland, Physician to the Royal City of Dublin Hospital, and Visitor for the Privy Council in Ireland of the examinations of the Pharmaceutical Society of Ireland, having held the latter position for eighteen years, his resignation being accepted recently, and at the meeting of the Council of the Society, held on October 7 last, a formal vote of thanks and regret was accorded to him. Sir George was Editor and part author of 'Griffith's Materia Medica and Pharmacy,' and the author of 'Suggestions for a Plan of Taking Notes of Medical Cases.'

Robertson.—On October 6, Alexander Robertson, Chemist and Druggist, Partick, Glasgow. Aged 23.

Sinclair.—On October 11, Robert Sinclair, Chemist and Druggist, Invergordon. Mr. Sinclair served his apprenticeship with Dr. Maclean, late of Elgin. In 1850 he went to Invergordon, and purchased the drug business carried on by the late Dr. Ross, which grew to be one of the most successful businesses in the north.

Smith.—On October 10, William Vernon Smith, Chemist and Druggist, Liverpool. Aged 67. Mr. Smith had been a member of the Pharmaceutical Association since 1899.

Whitfield.—On September 22, Charles Whitfield, Chemist and Druggist, Weaste. Aged 62.

Calendar for the Week (October 18—24, 1903).

Days of		Events of the Week.	Sun	
M	W		Rises.	Sets.
18	**S**	**Nineteenth *Sunday* after Trinity.**	6.29	5.1
19	M	●New Moon, 3.30 p.m.	6.30	4.59
20	Tu	Bradford Chemists' Association, at 9 p.m.—Private Meeting. Federation of West Riding Chemists' Associations, Royal Hotel, Bradford, at 6.30 p.m. Council Meeting, followed by General Meeting at 7.30 p.m.	6.32	4.58
21	W	Nottingham and Notts' Chemists' Association, at 8.30 p.m.—Opening Meeting. Western Chemists' Association (of London), at 9 p.m.—Opening Meeting.	6.34	4.56
22	Th	Chemists' Assistants' Association, at 8.30 p.m. London Chemists' Association (North London Branch), at 3.30 p.m.	6.36	4.54
23	F	Poor-Law Dispensers' Association, Surrey House, Victoria Embankment, W.C., at 8 p.m.	6.38	4.52
24	S	Michaelmas Law Sittings Begin.	6.39	4.49

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Bailey, Barrat, Baxter, Beacock, Beall, Beeny, Bell, Beresford, Betty, Bing, Bird, Bottomley, Bowman, Broadhead, Brown, Butcher, Cadbury, Cæsar, Chapman, Cherry, Cledbury, Cole, Coleman, Cooper, Cope, Coulter, Coward, Critchley, Cummings, Currie, Davies, Dent, Dester, Dickins, Dietzsch, Dolbear, Dugan, Dyer, Dyson, Eastwood, Eberlin, Eminson, Eyres, Ferrall, Fielding, Flood, Garnett, Gibson, Gilchrist, Glasspool, Gray, Greaves, Green, Gwinn, Hamblin, Hill, Hodgkinson, Holmes, Hornsby, Hudson, Hulme, Inglis, Jones, Kelf, King, Lance, Lapthorn, Lees, Lister, Lloyd, Mackay, Madgwick, Marshall, Monk, Morse, Moss, Muston, Newcombe, Newton, Orton, Palmer, Pettigrew, Philip, Philp, Priestley, Richards, Robson, Sampson, Sewell, Shaw, Slater, Smith, Sparshott, Spencer, Strang, Terry, Timmins, Turner, Wall, Walton, Watson, Wells, White, Whittle, Wilkes.

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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, October 22, 1903.

The Editor Cannot Guarantee that recipes received after October 31 will be included in the 'Pharmaceutical Journal Formulary.'

The Chemists of Hull have had an interesting meeting, and have established a system of co-operative buying which must benefit them all.

A Grocer at Bournemouth has been convicted at Bournemouth on a charge of selling impure cream of tartar. Analysis showed that the drug contained 10 per cent. of calcium sulphate.

An Unqualified Trader in drugs at Wolverhampton has been forcibly instructed, by a magistrate, in the fact that "magnesia, warranted pure," is not a correct description of magnesium carbonate.

In the Students' Columns this week appears the first article on Theoretical Chemistry. Student-Associates are again reminded of the prize-competition, particulars of which have already been given.

The Local Associations at Cambridge, Newcastle-on-Tyne, and North Staffordshire are among those which have held their annual meetings during the past week. The West-Riding Federation has also met.

In the Leeds County Court, a prosecution brought by the Registrar of the Pharmaceutical Society under Section 15 of the Pharmacy Act, 1868, failed, after a long legal wrangle as to the validity of the authority which had been given for the proceedings.

The Question of the Hour—Medicine Stamp Duty—is discussed this week editorally and by a contributor who gives his personal views. The paper recently read by Mr. Walter Forbes on the Medicine Stamp Duty Acts is also printed in this issue.

The Use of Personal Names in the possessive case or otherwise has up to now been one of the stumbling blocks to a clear understanding of what constitutes a claim to a proprietary right in a medicine. By a letter from the Board of Inland Revenue, quoted on this page, the position has been made clear.

Members of Parliament for the various divisions of Cambridge—Borough, County, and University—have replied in favourable terms to the Cambridge Pharmaceutical Association with reference to proposed or suggested legislation on the sale of poisons. Sir Michael Foster told Sir John Gorst that the "Pharmacy Bill is all good."

The Sheriff at Hamilton, Lanarkshire, thinks that the Registrar of the Pharmaceutical Society in "leading proof" under the Pharmacy Act, should be prepared, if called upon, to divulge the name of the person who may have called his attention to the law-breaking. Mr. J. Rutherford Hill emphatically disagrees with the Sheriff.

The Centenary Celebrations of the Paris Society of Pharmacy passed off very successfully. The presence of the President of the Pharmaceutical Society of Great Britain gave great gratification to the Paris savants. In addition to the formal address from the Council, read by Mr. Atkins at the meeting on Saturday afternoon, an address was presented by Mr. Idris on behalf of the British Pharmaceutical Conference. At the banquet in the evening both Presidents were called upon to speak, and tendered their congratulations to the Paris Society.

An Unlooked-for Result of the festivities and the visit of the President of the Pharmaceutical Society is the formation of an Association of English chemists resident in Paris. "Local organisation" has evidently not yet reached the limit of its possibilities.

In the Markets of Drugs and Chemicals there are few changes of importance to be reported.

LIABILITY TO MEDICINE STAMP DUTY.

It was intimated last week that definite information would be published shortly concerning the attitude of the Board of Inland Revenue with regard to the use of personal names—with or without possessive case endings—in the descriptions of compounded medicines. That information we are now in a position to give, a letter having been received from the Board, stating that, in the case of well-known medicines in which no claim to a proprietary right is or ever has been made, the Board "will be willing to regard the claim to a proprietary right, ostensibly set up by the use of a name in the possessive case, as being rebutted if the formula of the medicine is printed on the label, or if the medicine is prepared according to a formula in the British Pharmacopœia, and that fact is indicated on the label." The Board cannot, however, regard a reference to any other publication as sufficient to rebut the proprietary claim, and points out that, in the case of a name such as "Nesbit's Specific," liability is incurred, apart from the claim to a proprietary right, by reason of the preparation being held out as a specific. This further important concession, like that announced last week, is the outcome of representations addressed to the Board by the Editor of the *Pharmaceutical Journal* who pointed out that a number of compounded medicines are popularly known by the names of the medical men who first prescribed them, though neither the original prescribers nor anyone else has ever held proprietary rights in the same, the formulæ being published and generally accessible

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The list of such medicines submitted to the Board included the following :—

Abercrombie's Cough Mixture
Abernethy's Pills
Aitkin's Tonic Pills
Alexander's Pills
Begbie's Pills
Blaud's Pills
Caldwell's Bronchitis Mixture
Christison's Pills
Christison's Cough Mixture
Easton's Syrup
Fothergill's Mixture
Gregory's Powder
Hamilton's Pills
Henderson's Bronchitis Drops
Hoffman's Anodyne
Moir's Pills
Niemeyer's Pills
Parrish's Syrup
Sidney's Cough Pills
Syme's Liniment
Thatcher's Carminative
Tooley's Cordial
Wallace's Ointment
Wilcox's Bronchitis Mixture

It is believed that no claim to a proprietary right is or ever has been made in any of the preparations included in the foregoing list, but the assistance of readers of the Journal is invited to make that point clear, as well as to make additions to the list. The concession does not apply in the case of "Bow's Liniment," "Godfrey's Cordial," and other preparations which have been rendered liable to stamp duty by claims to proprietary rights, though, when Godfrey's Cordial is asked for in small quantities, as is frequently the case, it may be sold unstamped, provided the name is not written or printed on the label affixed to the bottle. It is essential that attention should be directed to these facts, because a number of labels have recently been submitted to the Editor, bearing names—such as "Godfrey's Cordial," "Dr. Bow's Liniment," etc., etc.—which undoubtedly render the preparations liable, though it appears to be a common practice to sell them unstamped. In this connection, it may be pointed out that the use of the possessive case can be avoided, apparently without any claim to duty arising, by labelling preparations as follows :—"Liver Pills, as prescribed by Dr. Hamilton (P. J. R. 615)," or "Antibilious Pills, as ordered by Dr. Moir (P. J. R., 617)." But it would perhaps be as well to ascertain the views of the Board on this point.

A list has also been submitted to the Board of Inland Revenue, by the Editor, of compounded medicines sold under descriptions which do not include the names of any ailments or organs of the body. As a result, the Board has intimated that the following names, among others, do not in themselves incur liability :—

Alterative Mixture *or* Pills
Alterative Powders
Aperient Pills *or* Powders
Astringent Mixture
Brompton Mixture
Chelsea Pensioner
Children's Aperient Powders
Cooling Powders
Digestive Candy *or* Lozenges
Digestive Pills *or* Mixture
Foot Powder
Laxative Tablets
Operating Pills
Quinine and Iron Tonic
Soothing Syrup
Taraxacum and Muriatic Acid Mixture
Universal Household Embrocation

Similarly, the use of such names as "Tonic Mixture," "Laxative Pills," and "Female Pills" will not render preparations liable, though a claim to Medicine Stamp Duty will arise if medicines are labelled with descriptive titles such as "Anodyne Mixture," "Blood Purifier," "Female Corrective Pills," etc., etc., inasmuch as each of those titles is held to imply a recommendation for the prevention, cure, or relief of some disorder. It must again be pointed out, however, that unless the composition of a medicine is disclosed, no words expressing or implying a holding out or recommendation must be printed on the label if the preparation is sold unstamped under a name which does not in itself incur liability ; neither must the preparation be held out or recommended on handbills or showcards, or in advertisements or books. If it be desired to recommend any medicine, whether sold under a liable or a non-liable title, the seller must choose whether he will (1) affix a medicine stamp, or (2) state upon the label the names of all the active medicinal ingredients, or (3) use a formula which has been published in a well-known book of reference, such as the 'Pharmaceutical Journal Formulary,' and indicate that fact upon the label.

THE PHARMACEUTICAL JOURNAL FORMULARY.

A few appreciative letters, selected from the hundreds recently received from correspondents in all parts of Great Britain, are published this week (see p. 605), and it may be stated that the success of the 'Pharmaceutical Journal Formulary' is now assured, thanks to the support accorded by chemists and druggists generally. But the very completeness of that success renders it necessary that readers of the Journal should now be asked to assist the Editor further by a fitting exercise of sweet reasonableness and patience. At the outset it was anticipated that a collection of perhaps one or two thousand recipes would be the result of the offer to register the same, but already that number has been greatly exceeded, and the influx increases steadily as the days roll on. It is obviously impossible, therefore, to accede to the requests of those who, when submitting their recipes, ask that they shall be included in the next instalment, and some weeks will probably elapse before all those at present in hand can be copied, checked to avoid duplication, and published. Further, the Editor cannot undertake that any recipes received after the last day of the present month will be included in the 'Formulary.' Readers who desire to secure registration, therefore, are requested to note the date—October 31—and take care that all their recipes for "known, admitted, and approved" remedies are sent in without further delay.

It may be well to point out that a few correspondents have taken the trouble to write out their recipes in the style which has been adopted for publication, and to those persons the thanks of the editorial staff are specially tendered. With a view to economising time and labour, it is now requested that such recipes as are sent in after this week shall be carefully copied out in the approved style, without any abbreviations, all names of official drugs or medicines being given as they appear in the British Pharmacopœia, and particular care being taken to write the quantities clearly and systematically, as in the published recipes. Those who take the trouble to fall in with this suggestion will henceforth have preference given to their recipes, since it will be possible to prepare them for the printer in much less time than is required to copy out and check the abbreviated recipes which have been supplied in most instances. Readers who have sent abbreviated recipes within the last fortnight may also like to take advantage of this offer, as it will otherwise be impossible for the editorial staff to deal with all those at present in hand for some time to come. In such cases, the fact that the recipes are being sent for the second time should be duly notified. Another point suggested for consideration is that, before sending recipes for cough mixtures, antibilous pills, and other preparations of a more or less general type, readers should ascertain whether some of the recipes already published are not identical with their own, or sufficiently like them to justify their adoption in place of those which have been heretofore in use. Slight differences in the quantities of ingredients in similar recipes hardly justify separate registration in every case.

It is only fitting that the Editor should recognise how freely a number of prominent pharmacists have offered for publication the cherished contents of their recipe books, more with the object of promoting the common good than of simply protecting themselves against possible inconvenience due to the Board of Inland Revenue's change in practice. Several other pharmacists have offered to supply copies of any recipes they possess, if required, and it may now be suggested that it would render the 'P. J. Formulary' more generally useful if readers would send proved formulas for perfumes, toilet and dental requisites, soluble essences, beverages, or any of the thousand and one miscellaneous preparations which the chemist and druggist is asked for from time to time. Such information is always gladly supplied by the Editor when asked for by readers, and he now asks in return that those who have tried recipes and found them satisfactory should intimate that fact, and so benefit their fellow-craftsmen. In conclusion, it may be stated, in reply to numerous correspondents, that copies of the completed 'Formulary' will be supplied on specially low terms to members or student-associates of the Pharmaceutical Society; also that, as far as possible, the sale of the book to the general public will be discouraged.

THE MAJESTY OF THE LAW.

In commenting last week (see page 547) on the result of proceedings under the Pharmacy Act, 1868, at Ayr Sheriff Court, the hope was expressed that the example set by the ironmongers of Girvan in agreeing to give up the sale of poisonous sheep-dips would be followed elsewhere. It was not anticipated that, within two days of the public expression of that hope, it would be necessary to abandon all sanguine feeling on the subject. But so it has turned out. The law of the land holds it to be improper to comment on an unfinished legal inquiry. The temptation, therefore, to express an opinion on the strange proceedings which took place at Hamilton Sheriff Court last Saturday must be steadfastly resisted, since the Editor has no desire to range himself beside the Assistant-Secretary to the Pharmaceutical Society in Scotland in risking imprisonment for contempt of court. Briefly, what happened was that Mr. Rutherford Hill very properly refused to obey the Sheriff's ruling that he must give in open Court the name of the person who had informed the Registrar that the respondent, an ironmonger, was "keeping open shop for the sale of poisons." That point has been raised before in various Courts during the hearing of proceedings under the Pharmacy Act, but previously the question had always been held to be irrelevant. It now becomes desirable that the decision of a higher Court shall be obtained, and it will be noted that on the request of Mr. Morison, who represented the Pharmaceutical Society at Hamilton, the Sheriff agreed to state a case. If all the obstacles which at one time or other have been placed in the path of the Registrar in the administration of the Pharmacy Act had been passively allowed to block the way, it is just conceivable that poisons would now be sold with a still more cynical disregard for public safety than at present.

LOCAL ASSOCIATIONS AND THE PHARMACY BILL.

The correspondence with local members of Parliament read at the meeting of the Cambridge Pharmaceutical Association, on Friday last (see p. 591), indicates clearly the attitude towards chemists' legal grievances of those legislators who have no personal axe to grind by opposing the Pharmacy Bill, which has been drafted to remedy those grievances. As Mr. Newsholme pointed out at the October meeting of the Council, the only people who object to the Bill are the people who would be hit in the event of it becoming law, they being interested in companies which trade in drugs. At the same meeting Mr. Robinson stated that he knew the principles of the Pharmacy Bill were favourably regarded by influential Government officials. It would appear, therefore, that chemists who have taken a somewhat despondent view of the chances of the Pharmacy Bill becoming law are not altogether justified in their opinion, and that they would do well to throw off that despondency and put their shoulder to the wheel in endeavouring to get the Bill before Parliament. The letters addressed to the Secretary of the Cambridge Pharmaceutical Association show that members of Parliament are not indifferent to the claims of chemists, and that when they properly understand the position of affairs, their sympathies are entirely with them. The letters also show that there is still room for educating legislators and would-be legislators in matters pharmaceutical, and that local associations may do good work by quietly keeping local members of Parliament well informed in regard to the aims and objects of the Pharmacy Bill. We therefore commend to the notice of officers of local associations and Divisional Secretaries the action of the Cambridge Pharmaceutica Association, and also that of the Inverness Chemists' Association, some members of which, on Tuesday, October 20, had an interview with Sir Robert Finlay, K.C., M.P., Attorney-General, anent the Pharmacy Bill.

IGNORANCE AND IRRESPONSIBLE ASSERTION.

The editor of the *Medical Press* continues to distinguish himself by expressing more or less foolish opinions upon matters with which he is not properly conversant, his latest effort in that direction being the publication of an absurd article, in which he alleges that, by granting to chemists and druggists the concessions announced last week, the Board of Inland Revenue has granted a new lease of life to "the pernicious habit of counter-prescribing." This statement is, of course, the veriest nonsense, based upon ignorance as deplorable as that which recently led the *Medical Press* to publish a scurrilous diatribe against what it termed "the pharmaceutical chemist's quackery," basing its arguments upon disclosures made at a recent inquest, in which the Manchester City Coroner inquired into the causes responsible for the death of a child, and in which a proprietary medicine was concerned. A report of the case, which is thus made an excuse for a wholesale libellous attack on pharmacists, has already appeared in these columns, and no sympathy can be expressed with the person who had so extravagantly advertised the quack medicine, and whom the jury censured severely. But it seems inconceivable that, on this evidence, a medical journal of some repute should see fit to stigmatise the whole of the pharmaceutical profession. Such an expression as "the unblushing and lethal quackery of the pharmaceutical chemist" is one which, were it not so comprehensive and irresponsible, every pharmaceutical chemist would strongly resent. It would be interesting, by the way, to know what the *Medical Press* thinks about the case in which a medical practitioner wrote the name "Calomel" upon the label of a bottle containing white arsenic. The disclosures in that case have been left severely alone by all the medical journals!

WHAT IS AN ADEQUATE DISCLOSURE?

As the reports of meetings recently held convey the impression that chemists and druggists are still somewhat in doubt as to what will be regarded by the Board of Inland Revenue as an adequate disclosure of the composition of a "known, admitted, and approved" remedy, the opportunity is taken of repeating that names of *all* the active medicinal ingredients must be stated upon the label for such a preparation, or an indication must be given upon the label that the medicine is prepared according to a formula in some well-known book of reference, such as the 'British Pharmacopœia,' or the 'Pharmaceutical Journal Formulary.' In the case of a cough mixture, the formula of which has been registered in the latter work, the indication may be given in one of the following ways:—

COUGH MIXTURE
Prepared according to the
'Pharmaceutical Journal
Formulary.'
JOHN SMITH,
CHEMIST AND DRUGGIST,
BLANKTOWN.

COUGH MIXTURE
('P.J.R.,' 157.)
Prepared
by
JOHN SMITH.
CHEMIST AND DRUGGIST,
BLANKTOWN.

We have reason to believe, also, that the Board of Inland Revenue will consider that a sufficient indication is given if the name of the preparation is followed by the letters "P. J. F." (*not* "P. J. R." *without* a reference number), or by such distinctive contractions as "Pharm. Journ. Formulary," "Pharm. J. Form.," or "P. J. Form." It might be well, however, if chemists and druggists were to submit to the Board proofs of labels on which such contractions are used.

BRITISH PHARMACEUTICAL CONFERENCE.

It may be remembered that, at the meeting of the executive committee of the Conference, held in Bristol, on July 27, 1903, it was stated that Mr. FRANCIS RANSOM would be unable, by reason of increasing business responsibilities, to undertake the duties of Honorary General Secretary for the following year. Mr. RANSOM has acted as one of the Secretaries for thirteen years, and his unfailing courtesy, kindliness of manner, and painstaking attention to the details connected with the work have been of inestimable advantage to the Conference. It is suggested that Mr. RANSOM be presented with a testimonial, accompanied with a list of subscribers, without any mention of the sums contributed, as it is felt that the general comprehensiveness of this list is of more importance than the amount collected. Subscriptions should be sent to the Hon. Treasurer, Mr. J. C. UMNEY, 50, Southwark Street, London, S.E.

LA SCIENCE PACIFICATRICE.

THE great event af the year in the world of pharmacy is over. The Society of Pharmacy which has produced far and away the greatest number of illustrious scientists has celebrated its hundredth anniversary. Last Saturday's celebrations in Paris will for ever linger in the memories of those who had the privilege of taking part in them. In the midst of historic environments, surrounded by buildings and monuments which recalled all that is best in the pages of pharmaceutical history, there gathered together the descendants of those men who laboured and flourished in the stormy days of the Revolution. What a glorious past this Society has had! What immortals it has produced! How inestimable are the wondrous works that can be laid at its door! To what extent is suffering humanity indebted to those men whose discoveries have revolutionised the practice of medicine? These are reflections which must have occurred to everyone who sat and listened whilst BOURQUELOT, the successor of BOUILLON-LEGRANGE, retraced the steps of the Society through all its changes, through its most flourishing days, and through its viscissitudes. To find the origin of this Society, it was necessary to go far away back into the distant centuries, when HOUEL, the grocer-apothecary, planted his garden; but the Society as it exists to-day held its first meeting in the "Salle des Actes" just a hundred years ago. During those hundred years, and by its members, most of the important alkaloids and active principles have been discovered, and it must have been a proud moment for the present members when they heard their Secretary recall the names of those illustrious men who in the days gone by had occupied those very places in which they were now seated. The event was rendered more memorable by the visit of the foreign delegates. On every side and at every moment the greatest courtesy was shown to the two visitors who had crossed the Channel to pay a tribute to and render homage at the shrine of PARMENTIER and his immortal contemporaries.

The visit, however, had another and a none the less happy outcome, in that it brought together the Englishmen who for the time being are following the calling of pharmacy in an alien yet a friendly land. It was a graceful act these young Englishmen performed when they gathered together to welcome the visitors. It was, too, a day they will long remember, for the kindly words which Mr. ATKINS spoke deeply impressed them. In the visits which were paid to the English pharmacies the visitors were everywhere cordially received, and with great respect, and indeed the British residents seemed to vie with the French in making their stay a pleasant one. The effect of the celebration in bringing about a nearer relationship between the two Societies—that of Paris, which is a century old, and that of Great Britain, which is also growing in years—cannot be over-estimated. Irrespective of political differences and different languages, "la science pacificatrice" brings nations closer together; and science is, indeed, mightier than the sword. May the friendly relationship between Paris and London, between the representative Societies of each city, ever continue.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Surinam Copaiba.

For two years past there has been imported into Holland in small quantities from Paramaribo a copaiba which is as fluid as that of the Para balsam, although on filtration it becomes a little thicker. It is now expected that it will soon be placed on the European markets in considerable quantity, forest concessions having been granted in Surinam for its exploitation.—*Ind. Mercuur*, **432**.

Determination of Minute Traces of Arsenic.

In the course of his researches on the occurrence of minute traces of arsenic, A. Gautier has felt the need of a reagent which would absolutely precipitate even the most minute quantity of the metalloid. He has succeeded in preparing a reagent of ferric sulphate which answers all these requirements. 100 Gm. of commercial ferrous sulphate is dissolved in 500 C.c. of water containing 25 Gm. of pure sulphuric acid; the solution thus obtained is treated with sulphuretted hydrogen, boiled, filtered, and oxidised with 28 Gm. of nitric acid. The ferric hydrate is then precipitated with arsenic-free ammonia, washed, and dissolved, in the cold, in dilute pure sulphuric acid. This ferric sulphate still contains traces of arsenium. These are removed by digesting it for two days with arsenic-free granulated zinc, heating it to boiling *in vacuo*. The solution is again oxidised with a little nitric and sulphuric acids, and the ferric hydrate precipitated with an excess of pure ammonia, which redissolves the zinc hydrate. After washing, the ferric hydrate is redissolved in pure dilute sulphuric acid, and diluted so that it contains 30 Gm. Fe_2O_3 in 100 C.c. This quantity will not contain more than 0·0005 Mgm. As_2O_3. The reagent thus prepared will precipitate the most minute trace of arsenium. Distilled water containing but 0·0011 Mgm. As_2O_3 per litre was found, after boiling with 5 C.c. of this reagent, and precipitation with ammonia to be absolutely free from arsenium. It is also available for the detection of minute quantities of arsenium with great accuracy, in quantities from 1 Mgm. to 0·001 Mgm. in any substance. By its means the existence of 0·001 Mgm. of arsenic per litre has been demonstrated in distilled water, and to the extent of 0·1 Mgm. per litre in so-called pure ammonia. In the detection of traces of arsenic in physiological or toxicological analyses, after charring the organic matter, as previously indicated, with a mixture of nitro-sulphuric acid, the carbonaceous mass is extracted with boiling water, filtered, partially neutralised, and a little of the ferric sulphate reagent added, so that the mixture does not give a reaction with ferrocyanide. The precipitate formed in this partially neutralised liquid does not contain any arsenium. It is removed by filtration, the filtrate treated with 5 C.c. more of the reagent, boiled, and neutralised with ammonia. The precipitate thus obtained is collected, redissolved in a mixture of pure nitric and sulphuric acids, heated until no more nitrous fumes are evolved, diluted with water, and introduced directly into the Marsh's apparatus.—*Comp. rend.*, **137**, 158.

Silver in Potassium Cyanide.

K. Friedrich finds that silver is frequently met with as an impurity in potassium cyanide, and that even in a specimen sold as "*Kalium cyanatum purissimum pro analysi*" as much as 0·0012 per cent. was detected. In view of the use of the salt in metallurgical assays, the possible presence of silver as an impurity should be guarded against.—*Pharm. Centralh.*, **44**, 617, after *Zeitschr. für Angew. Chem.*

Constituents of Cusso.

A. Lobeck has obtained interesting results from a renewed examination of the constituents of cusso. He succeeded in separating Leichsenring's kosin (recrystallised commercial kosin) into two crystalline bodies, α-kosin and β-kosin. Daccomo and Malagnini had also effected a similar separation. α-Kosin crystallises in fine long lemon-yellow needles, melting at 160-161°, having the formula $C_{21}H_{24}(OCH_3)_2O_5$. Like commercial kosin, however, this body has no toxic action on frogs. β-Kosin melts at 120-121°, and forms dark yellow or red prisms of the formula $C_{23}H_{28}(OCH_3)_2O_7$; this constituent also is devoid of toxic action. α-Kosin is but little acted upon by zinc dust and caustic soda, and yielded no body similar to the filicinic acid yielded by filicic acid, hence in this respect it showed no analogy with the constituents of male fern. By decomposition with concentrated sulphuric acid, butyric acid and the monomethyl ether of methylphloroglucin was obtained. Lobeck then proceeded to prepare protokosin and kosotoxin from ethereal extract of cusso. During the process he also isolated a new body, kosidin, in small rectangular almost colourless plates, melting at 178°, but with scarcely any toxic action. Protokosin was obtained as an anhydride, which, however, passed into Leichsenring's protokosin by recrystallisation. Kosotoxin, which had a marked toxic action on frogs, was submitted to the action of zinc dust and caustic soda, by which trimethylphloroglucin and commercial kosin were obtained. As Boehm had also obtained trimethylphloroglucin from filicic acid by the same process, there can be little doubt that the two bodies are closely allied to one another.—*Archiv. d. Pharm.*, **239**, 672.

Senoussi Coffee.

A. Chevalier states that this coffee, the produce of *Coffea excelsa*, succeeds well in the Soudanese zone, and that the seeds when roasted have a fine flavour. The plant is intermediate in character between *C. De Wevrei*, Wildm. and Dur., of the Congo, and *C. Dybowskii*, Pierre, of Kemo, but differs in attaining the stature of a tree and in the form and dimensions of the leaves and the number of their nerves.—*Rev. des Cult. Col.*, **13**, 57.

The Scutellum in Zea Mais.

Miss Ethel Sargant and Miss Agnes Robertson, in a paper read before the British Association, 1903, said that the epidermis of the scutellum developed into a well-marked epithelium over the face which was in contact with the endosperm. They had found that this epithelium folded in on itself in places, forming narrow clefts of considerable depth in the dorsal surface. Both sides were, of course, lined with the epithelial layer, and the cleft was so narrow that they often touched each other. Traces of secretion were, however, commonly found within these structures, which might fairly be described as glands. Their number and size varied in the individuals examined. Their distribution over the dorsal surface of the scutellum was also variable, but they were less frequent near the apex, and in the regions bordering on the median longitudinal section; indeed, they were often quite absent from these parts. The glands were fully formed in the ripe seed, but their development had not been traced. Similar glands were found in the allied genus *Coix*, but in the individuals of *C. lachryma-Jobi*, which they examined, they were less well developed than in *Zea*. The authors said that they had not observed any relation between the terminations of the vascular branches and the epithelial glands. These terminations occurred in those parts of the scutellum where the glands were less frequent.

THE EMPIRE AND ITS DRUGS.

BY RICHARD A. ROBINSON, JUN.

A number of differing circumstances combine to render difficult the task of him who would examine the effect of fiscal systems on trade in manufactured drugs. The majority, probably, of preparations in commonest use for medicinal purposes in Great Britain are manufactured at home from imported "crude drugs." The Protectionist, equally with the Free-Trader, recognises the cardinal impractibility of levying a duty on imports of raw goods for home manufacture. Crude drugs are thus outside the scope of the fiscal changes now under consideration. The proposed import duty of 10 per cent. on fully-manufactured products would doubtless do something—but in my opinion, very little—to assist the British drug manufacturers. Dumping, in the drug trade at least, has not as yet rendered necessary the building of a tariff wall; in fact, the total value of the imports of the class of foreign goods which includes manufactured "medicines, drugs, and medicinal preparations," is not sufficiently large, in comparison with the quantity consumed, to call for "retaliation" or protective tariffs. Without reference, therefore, to the broader issues raised by Mr. Chamberlain's fiscal proposals, or even to the trade in chemicals, it is fairly safe to assert that British trade in vegetable drugs has little or nothing to gain directly by the adoption of a system of preferential tariffs. In spite of that, however, it may not be entirely without interest to turn to the statistics of imported and exported drugs which are contained in the reports and Blue-books of the Board of Trade. But here another difficulty arises, for one is at once confronted with the fact that those returns are not classified in a manner which is sufficiently uniform or detailed for profitable examination. False declarations, again, are by no means an unknown quantity. A third problem which must disturb calculations is raised by the influence of climatic conditions, the state of the labour market at home and abroad, Patent Acts, shipping charges, alcohol duties, and other factors, some of which have probably more effect on the commerce of drugs than on any other branch of trade. All these things detract from the importance or practical value which might otherwise be attributed to the available statistics.

The relative increase of the British exports and imports to and from the protected countries of the Continent does not, in the case of manufactured "medicines, drugs, and medicinal preparations," call for detailed comment. On the whole, during the thirteen years 1890-1902, British exports of that class of manufactures to the Continent increased more rapidly than did the imports. But in the case of British trade with the United States a very remarkable state of things is disclosed by the Board of Trade returns. The following table represents the value of the exports of manufactured medicines from the United Kingdom to the United States in the years 1890, 1891, and 1902, with the value of the imports of "manufactured drugs, unenumerated," during the same years:—

	1890.	1891.	1902.
Exports to U.S.A.	£94,924	£36,420	£48,169
Imports from U.S.A.	128,194	137,646	241,275

(The year 1891 is taken as well as 1890, because of the great difference between the exports of those two years.) It will be noticed at once that during the last twelve years the import trade in manufactured drugs from the United States into Great Britain has increased enormously, while the return trade has grown comparatively little. In fact, if an exceptional year be taken as a standard for comparison—a method not unknown to some politicians who desire to make such comparisons as striking as possible—it will be seen that the British export trade to America, in the class of goods under notice, was little more than half as great in 1902 as it was in 1890. How much, if at all, the disparity of growth is due to tariffs it is impossible to discover. Doubtless most English pharmacists can call to mind instances of packed goods—notably pills and capsules—of American origin, the sale of which has increased enormously in England. This does not seem to have been caused to any extent by Free Trade, but is, I think, to a great extent, ascribable to clever advertising, and to the fact that, though British manufacturers have now nearly caught up with their American competitors, the latter were some years ahead in the adoption of new machinery, and in making a feature of that class of medicine. Mr. John C. Umney tells me that another reason for American increase of trade is that in the United States physiological standardisation of drugs is not subject to the restrictions which hamper British manufacturers.

The following figures, relating to the exports from the United Kingdom of manufactured medicines, are given for the sake of the interest they possess, rather than for any particular moral which may be "read into" them by professed politicians or economists.

Exports of Manufactured Medicines, etc.	1890.	1902.
To all foreign countries	£405.000	£449,000
To British India	163.000	238,000
To the self-governing Colonies	385,000	542,000
To other British possessions	107,000	140,000

Turning from these somewhat unsatisfactory—because inconclusive—figures to the question of drug-cultivation in the Colonies, it is certain that more might be done in some British possessions than at present. Reports of consuls from different parts of the world have been published from time to time in the *Pharmaceutical Journal*, and show that in some instances opportunities of profitable drug-cultivation have been neglected. Thus the vice-consul at the British Protectorate of Zanzibar has remarked (*P.J.* [4], **15**, 301) that the clove industry there has sometimes suffered from the destructive carelessness of the clove-pickers, who are a notoriously idle class of workmen. On the other hand, in the same report, it is stated that, the planters having given serious attention to the cultivation of chillies, the production increased enormously between 1896 and 1901. A Colonial Office report, recently issued, on the trade of Ceylon during 1902, remarks that "the continual adulteration of citronella oil does not make this cultivation sufficiently remunerative. Until by means of putting sound oil on the market a clean name is obtained for the Ceylon article, it cannot be hoped that the best prices can be obtained." The remarkable activity of the United States Department of Agriculture was shown by the recent action of that department in regard to cassava cultivation. Two years ago Mr. Robert Thomson introduced to the island of Jamaica from the Republic of Colombia a few cuttings each of some thirty varieties of cassava (*Manihot utilissima*), all of which were new to the West Indies. He propagated these until there was a stock of many thousands of stems, which yielded numerous cuttings for planting purposes. The tubers of seventeen of these varieties were analysed by the Jamaican Government chemist with remarkable results. Thus, eight of the varieties were found to contain from 33·30 to 36·50 per cent. of starch; and all the varieties contained an average of only one-sixth of the hydrocyanic acid which characterises the kinds grown in the West Indies. These precious nonpoisonous varieties were offered for sale to the public of Jamaica. Only the Government Botanic Garden purchased one or two cuttings of each variety. Mr. Thomson thereupon communicated with the Agricultural Department at Washington. That department immediately despatched the professor in charge of the sub-tropical experimental grounds in the south of Florida to report on the collection; thus the entire collection of stems was disposed of and transferred to Florida.

With regard to India, Mr. E. M. Holmes has more than once suggested, in the 'Encyclopædia Britannica' and the *Pharmaceutical Journal*, that the cultivation of opium for the European market in the hilly districts of India, and its preparation after the mode adopted in Turkey—by drying the concrete juice as quickly as possible—might be worthy of the attention of the Government. (That controversy may not again arise on this point, it should be mentioned that other experts hold that Indian opium could not ever be produced so as to meet European requirements.) The success of the cinchona industry in India is ancient history, and need not be reiterated, but, while dealing with that country, mention may be made of the great increase during the past few years in the exports of coco-nut and castor oil seeds. The value of the castor oil seeds sent from British India to the United Kingdom increased from £100,130 in 1900, to £161,320 in 1901, and £212,187 in 1902. While it would not be fair, owing to the vastly different conditions of the native labour market and of transport, to assume that the Colonies might accomplish as good results in medicinal plant cultivation as has been the case in India with regard to cinchona and castor oil seed, it is at least possible that something more might profitably be done to render the British Empire less dependent on foreign countries for the supply of certain of its drugs. It is not, however, obvious how that consummation is to be achieved by means of tariffs.

THE MEDICINE STAMP DUTY ACT.*

BY WALTER FORBES.

From the Inland Revenue point of view, the yield of the Medicine Stamp Duty Act is a very valuable addition to the national Revenue, costing so little in collection that one cannot fail to admire the zealous manner in which the officers of the Revenue safeguard this tit-bit of the public income. The public interest in so-called "patent" medicines has been protected by a long schedule of specially named articles, followed by a general charge, which is sufficiently comprehensive to establish a claim for duty against anyone claiming proprietary rights in a medicine, or selling medicines "held out or recommended to the public by the makers, vendors, or proprietors thereof as nostrums, or as beneficial to the prevention, cure, or relief of any distemper, malady, ailment, disorder, or complaint incident to, or in anywise affecting the human body."

The hair-splitting technicalites in the wording of the general charge has given trouble from time to time to some chemists and other medicine vendors who have attempted to sail too close to the wind, but it is only right to say that vindictiveness has never characterised the Inland Revenue authorities in their prosecutions. Of late years the courtesy of the officials in giving advice on doubtful labels, to avoid prosecutions, has been very marked. This privilege was obtained by a deputation from the Chemists' and Druggists' Trade Association of Great Britain, as the result of an interview with the authorities at Somerset House in the year 1886, when a climax had been reached in toleration. Friendly interviews have generally the effect of breaking down barriers, and this interview was no exception to the general rule. It had the happy result of getting the authorities to promise to mark all labels submitted, either "liable" or "not liable," while the Inland Revenue officers were supplied with a printed statement respecting the provisions of the Act, with general observations thereon, which simplified the administration of the Act to officers and chemists alike. Recent instructions, by the way, are to the effect that not more than ten labels may be submitted at any one time to Somerset House. Now we come to that part of the schedule of the Act which deals with the exemptions from duty. After a long list of imported drugs, which are wholly exempt from the provisions of the Act, and the exemption of entire drugs from Stamp Duty, under qualified conditions, the schedule proceeds with the special exemption clause, which has been made such good use of this year. That clause exempts "all mixtures, compositions, or preparations whatsoever . . . which shall be uttered or vended by any such surgeon, apothecary, chemist or druggist, as aforesaid . . . the different denominations, properties, qualities, virtues or efficacies of which mixtures, compositions, and preparations . . . are known, admitted and approved of in the prevention, cure, or relief of any disorder, malady, ailment, or complaint incident to or in anywise affecting the human body."

The Board of Inland Revenue's Change in Practice.

The importance of this exemption clause was made manifest by two important High Court decisions given this year. Although the two cases in which the decisions were given arose at different times and were entirely distinct from one another, they may yet be said to be complimentary, since the decision in the case of Ransom *v.* Sanguinetti had the effect of abolishing privileges which had been shared by licensed medicine dealers generally, while the case of Farmer *v.* Glyn-Jones re-established those formerly so-called privileges as rights restricted, under certain conditions, to registered chemists and certain other qualified persons.

The Ransom *v.* Sanguinetti case arose over a label worded as follows:—

F. SANGUINETTI, EALING.
PURE GUM PASTILLES.
INFLUENZA.
Delightfully Soothing to Singers and Public Speakers.

It is safe to say that no danger was apprehended in the early stages of the case, the magistrate's decision being, as worded in the "case stated" to the High Court, "that the said words upon the aforesaid label did not, in fact, hold out or recommend to the public any nostrum, proprietary medicine or specific," "or that the pastilles were beneficial for the prevention, cure, or relief of any distemper within the meaning of the said Act, and we accordingly dismissed the information." The Inland Revenue authorities contended that the word "Influenza" was printed on the label for the purpose of inducing the public to consider that the pastilles were beneficial for the prevention, cure, or relief of influenza, and that the words "delightfully soothing to singers and public speakers," were printed thereon as a recommendation of the said pastilles as beneficial for the prevention, cure, or relief of such ailments or complaints of the throat as are common with singers and public speakers, and that, therefore, the pastilles were within the words of the schedule.

Possibly the authorities would not have gained judgment, but, as the case developed, their plan of campaign was altered, the instructions issued to the Inland Revenue officers being ignored. These instructions, dated January, 1902, state that "the Board recognises the necessity that exists for giving a preparation such a designation or name as shall distinguish it from other medicines, and they do not attribute any further meaning to such words as "cough mixture," "liver pills," "lip salve," "teething powders," "corn paint," etc. This move on the part of the Solicitor-General brought the Inland Revenue authorities out triumphantly. The remarks made before the Lord Chief Justice by the Solicitor-General left no ground for surprise when a letter from Somerset House cancelled the privilege enjoyed by licensed medicine vendors generally of using descriptive labels, such as "Influenza Mixture," "Cough Mixture," etc.

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* Read before the West Ham and District Chemists' Association, on Thursday, October 8, 1903.

If the judgment in the Sanguinetti case, with all that it has since entailed, had been delivered long before the decision in the Glyn-Jones case was given, it is safe to say that a deep gloom would have settled over the trade; but the bright light of victory in the Glyn-Jones case came to cheer us before the shoe commenced to pinch. Mr. Glyn-Jones had evidently made up his mind to attempt to make the special exemption clause effective for chemists and druggists. Although that clause had been on the Statute Book since 1785, it was left till 1902 before the full meaning of it struck home to one courageous enough to fight the battle, though others had seen the point earlier, notably, Mr. Price, a barrister, who, in 1830, recognised the value of the exemption clause.

As is now well known, Mr. Glyn-Jones, in order to test the special exemption clause, sold to an Inland Revenue officer a bottle of ammoniated tincture of quinine with the printed recommendation :—

> A well-known and highly-recommended remedy for influenza and colds.

After a hard legal battle, judgment was given in favour of the defendant, and two potent quotations from the unanimous considered judgment of the Lord Chief Justice and Justice Wills and Channell will make clear the far-reaching verdict of making the exemption effective to chemists. The first is as follows :—

> If, however, the article is compounded of drugs or chemicals, as to which there is no secret, either of denomination, quality, efficacy, or mode of manufacture; if it is in no sense a proprietary or patent medicine, if the person who originally introduced it to the public is not, and no person has become, the owner and proprietor of the mixture or compound, so that it is not the common property of all the world, and has never been advertised as a specific, or as possessing remedial properties, and if it is made up or sold by a duly qualified person, it is exempt from duty.

The foregoing statement clearly places all known and approved medicines which have never been proprietary and sold by the qualified chemist on the non-liable-to-stamp-duty basis.

The second quotation is the following—a very concise statement of the intention of the Act, which clears the ground for chemists :—

> The whole scheme of the Act appears to be to strike with chargeability medicines imported from abroad, and medicines which particular persons can make, to the exclusion of others. The long list on the schedule consists of articles of this nature.

For the purposes of the prosecution, Mr. Glyn-Jones had purchased the ammoniated tincture of quinine from a wholesale house, so that it might not be said that it had been "Held out or recommended to the public by the makers or compounders as a nostrum, etc." At first it seemed as if this piece of strategy had won the battle, but Mr. Cyril H. Kirby, who acted as solicitor for the defence, stated lately :—"In my opinion, it would have made no legal difference whatever if Mr. Glyn-Jones had compounded it, as well as sold it." That opinion must likewise be shared at Somerset House, since the chemist may now compound, according to recent instructions issued, the preparation he sells under a descriptive title, and with a recommendation. To close the case for the Revenue authorities, and the changes affected during the year, I managed to read the letter from Somerset House, dated July last, embodying the changes of administration necessitated through the foregoing decisions.

The Changes as They Affect the Chemist.

Chemists must lose no time in setting their houses in order —I mean their label drawers. Only a few more weeks are left to complete the clearing process. When "the bells are ringing the old year out and the new year in" the altered administration takes effect. Chemists may well usher in 1904 with a shout of joy if they have made up their minds to rise equal to the benefits not bestowed upon them, but benefits unearthed after a little over a century's burial in the country's Statute Book. No doubt the language used from time to time has had much to do with this exemption clause at last turning in its grave. What are a few thousand spoiled labels compared with the larger scope afforded? In fact, if chemists are inclined to grieve over some expensive labels being useless, I would say, "Don't worry, but use a decent rubber-stamp, on which the source of the formula has been moulded." Stamping across the label would then be quite a balm to their sorrows.

The wideawake chemist will appreciate to the fullest the recommendation of B.P. articles. With poetic language he may well draw the invalids to his shop in crowds. Known to the public by name! Yes, the medicine is, but the public are still in a condition of ignorance regarding the therapeutic value of many of the medicines they so glibly ask for. Now has dawned the time when the chemist may become the educator of the public—a new Education Act, truly. If the Glyn-Jones case had turned out other than it did chemists would have had a great deal to grumble about, as small quantities of pills would have been liable when descriptive labels were used, unless they were sold unlabelled, thus causing great inconvenience.

The issue being successful, it really brings into force what the Pharmacy Act has in a measure failed to do—*i.e.*, giving the qualified chemist a distinct standing from the ordinary vendor of medicine, who, under a licence from the Inland Revenue authorities, can sell certain stamped medicines. A notable passage in the letter from Somerset House is the following :—"It will be observed that the exemption clause does not apply to sales by limited companies or qualified persons." It is well to make a mental note of the fact that, for the purposes of this Act, the decision given in 1894, in the case of Smith *v.* Mason, a sale by an employee is regarded as a sale by his employer. This ruling was upheld in a recent case, where the sale was made by a qualified man employed by a limited company.

Of course, the inventive brain will turn upon getting labels worded to avoid liability to stamp duty. Much has been written about "liable" and "not liable" labels under the change in practice, but no trouble ought to arise in deciding what labels will be "liable" or not if a careful study be made of the recent letters from Somerset House and the wording of the special exemption clause. It is useless to send labels to Somerset House if chemists are claiming under that clause, because doubtless all would be returned marked liable.* Let me illustrate. A label is sent marked thus :—

"Stomach Pills (Pil. Rhei Co., B.P.).
A safe medicine in mild cases of indigestion.
Harold Mitchell, Chemist, Forest Gate."

That label would be returned marked liable, because it would depend on the conditions of sale whether it was liable or not—*i.e.*, Mr. Mitchell might supply an unqualified person with them to retail, then under the unqualified seller they would become liable to stamp duty; hence, Somerset House, to protect itself, has no other alternative than stamp it "liable."

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* Such labels will now be returned unmarked.—[Ed., P.J.]

It is well to remember that medicines upon which stamp duty has been paid will not now be released from duty, even although formula be declared. "Once stamped, always stamped" is the motto applicable. Again, do not forget that such medicines as Fellow's Syrup, Scott's Emulsion, etc., when prescribed by medical men without any admixture, require to be stamped in accordance with the sum charged. The exemption from stamp duty only exists when such medicines are prescribed and dispensed in conjunction with other ingredients.

The chemists who are really put to an inconvenience by the new administration are those who have been supplying pills, etc., labelled descriptively to ordinary shopkeepers. Although at first sight it may seem a hardship, yet such a ruling as the "Sanguinetti" decision must of necessity create wailing from some quarter. Privileges are so apt to be forgotten in the lapse of time as privileges, becoming frequently looked upon as rights. This applies equally to the small shopkeepers—they enjoyed a privilege, not a right.

The Changes as They Affect the Public.

The public interest is so well safeguarded that when the changes that were likely to have such far-reaching results were in their embroyonic state it was to be expected questions might arise in Parliament, and they did. On July 9 Sir John Leng and Mr. Shaw Stewart addressed questions on the subject to the proper quarter. The latter, addressing the Chancellor of the Exchequer, put the question:—

> If the Board of Inland Revenue have notified chemists that after September 30 they will no longer be permitted to sell customers small packages bearing a descriptive title unless a medicine stamp of the value of 1½d. is affixed to each package, even though the value of such package be only 1d. or 2d.; and whether, seeing that the alternative will be for chemists to sell all packages without any descriptive title, he will state what steps he proposes to take to prevent, in the one event, so high a tax being placed on chemists and their customers, and, in the other, to guard the public against danger?

I quote this question to show that the public have a voice in the administration of Acts affecting them, and that it is for chemists to make the path of the public easy under the change in practice. Let all chemists remember that in their professional position they are the servants of the public—servants in the highest and best sense of the word. If this is kept in mind no trouble need be feared, but if the public are going to be looked upon as something to be commercially exploited in the light of this power, unearthed after a century's burial, then danger lies ahead. It has been said that the Pilgrim Fathers "gave to the world America and to England a conscience." Be that as it may, we know the conscience of England truly strives towards freedom, never more so than at the present time, and woe betide chemists if they set up a priestcraft of medicine and attempt to make the public their shorn laity. Rather let all strive to benefit the public by the added knowledge it is now their privilege to give, thus shedding light in darkness, becoming benefactors truly.

REVIEWS AND NOTICES OF BOOKS.

'Neue Arzneimittel und Pharmaceutische Spezialitaten.' By G. Arends. Price 6 marks. Pp. 508. Berlin: Julius Springer. 1903.

This is one of the numerous compilations of new remedies which abound in France and Germany. It consists of short monographs, alphabetically arranged, of all the substances which have been recommended for medicinal purposes during the past few years, embracing short therapeutic and chemical notes. An especially useful feature is that in most cases the name is mentioned of the firm by which the preparation has been introduced.

'The Natural History of Sokotra and Abd-el-Kuri': Forming a Monograph of the Islands. Edited by H. O. Forbes, LL.D. Liverpool: The Free Public Museums. Pp. 598, with twenty-seven plates. 1903.

This volume is issued as a special bulletin of the Liverpool Museum, being the report upon the results of the conjoint expedition to these islands in 1898-99, by Mr. W. R. Ogilvie Grant, of the British Museum, and Dr. H. O. Forbes, of the Liverpool Museums, together with information from other available sources. The pharmacist may find in the book much information concerning drugs and perfumes. Thus, on page 7, under *Viverricula malaccensis*, F. Cuv., the following note occurs:—"The lesser Indian civet cat, which, like the other mammalia in Sokotra, has been introduced, is fairly common among the mountains, though not very often seen. The Arabs extract the civet secreted in the glands below the tail and greatly esteem it as a perfume. When a cat has been caught one man slips a string noose round its neck and pulls the head tight against the wooden bars of the trap, a second man then pulls up the dropping door of the oblong cage, and, seizing the cat by the tail and hind legs, draws it out backwards, the man at the head paying out the required amount of line. The civet is then squeezed from the glands between the man's finger and thumb and transferred to his naked fore arm. After the operation is complete the poor cat is allowed to escape, and the precious substance is carefully scraped up and placed in a small flat wooden box."

On page 15, under *Physeter macrocephalus*, Linn., further information of pharmaceutical interest occurs. The sperm whale appears to have been a frequent visitor to the neighbourhood of Sokotra, as "black ambergris" was one of the exports for which the ships of the East Indian Company traded there in the seventeenth century. Even as early as the thirteenth century the island produced a great deal of ambergris. This whale is not now so frequently met with in these seas as it was even half a century ago, when it abounded on the Arabian coasts, as did also myriads of cuttle fish and cephalopods on which it fed. Illustrations are given of the dragon's blood (*Dracæna cinnabari*, Balf. *fils*), the "arhieb" of the natives; of the Frankincense trees; of the singular swollen stems of the *Adenium*, and tree cucumber (*Dendrosicyos*), which suggest their being affected with elephantiasis. On page 464 it is remarked that the *Citrus aurantium*, Willd., was observed at an elevation of 4,000 feet, that it was probably introduced from Portugal, and had deteriorated, "as the fruit is quite as bitter as aloes." Specimens of the resin of *Boswellia ameero* and *B. socotrana*, Balf. *fils*, had been sent for identification to Museum of the Pharmaceutical Society. The cucumber tree (*Dendrosicyos*) is a unique plant, no other form in the Cucurbitaceæ having the tree character it possesses. The native tooth-brush, named "Kelle," is formed of the chewed-out ends of *Euclea laurina*, Hiern. (Ebenaceæ), the same name, however, being also given to *Buxus Hildebrandti*, which Dr. Schweinfurth on a previous occasion received as the Kelle plant. An account of the Sokotra aloes brought home by Dr. Forbes, which was reported on by Mr. E. M. Holmes, and examined at his request by Mr. W. A. H. Naylor, F.I.C., showed a percentage of 4·586 of aloin in one sample, and 9·563 in another sample. The former represented apparently the fluid portion of the liquid aloes, and the latter the deposit that forms on it. The marine algæ from the neighbouring small island of Abd-el-Kuri were identified at the Museum of the Pharmaceutical Society.

THE STUDENTS' COLUMNS.

CHEMISTRY.—1.

Little does the young child think when it asks its preceptor the question, "What is it made of?" that the same question is at the foundation of perhaps the most important of sciences—chemistry. The answer to the question has occupied the minds of many of the deepest thinkers of the past two thousand years, and not yet has finality in any of its branches been arrived at, although the achievements already attained have far exceeded the most sanguine dreams of the workers of but a hundred years ago. It is not enough to tell a persistent child that its toy is made of wood, iron, and paint; the next question would be to inquire into the ingredients of these component parts, and in order to answer in a satisfactory manner recourse must be made to the science of chemistry.

The simplest way of finding the constitution of any object is to pull it to pieces or disintegrate it. Let us apply this procedure to a piece of iron and see what the result will be. Break it in pieces with a hammer, or file it into small particles. Each portion, as regards appearance, if not size, is similar to every other portion, so that our investigation has not led us very far, and if continued as far as possible by mechanical means would not lead us much further, every subsequent particle being the counterpart of its neighbours in every way. We can conceive, however, that if the smallest particles we are able to see by the aid of the microscope were further subdivided by either physical or chemical methods, some differences in the particles might ultimately be noticed, and that by some means or other they could be separated into two different substances, but observation of various facts, certified by their constant repetition, leads us to believe that no such differences exist, and no separation can be made. Therefore we assume that iron is a simple substance; in other words, it is, in the language of chemistry, an "element." This leads us to ask for a definition of an "element," and by condensing our information we are able to say that "an element is matter which cannot by any known physical or chemical methods be resolved into two dissimilar substances."

From the diversity in appearance of the objects around us we might easily imagine that, in order to obtain such differences, there should be an almost endless number of elements. This is not so, however, as by either mechanical or chemical means most objects may be divided into simpler substances, and we find that all known bodies are composed of one or more of some seventy-six elements. The majority of these elements are comparatively scarce, perhaps 99 per cent. of the earth's crust being composed of about ten of the most common.

In arriving at our definition of an element, the expression "ultimate particle" was used. We have very well-founded reasons for the belief that this extremely minute portion (which, we must always remember, can never be isolated, but merely conceived) possesses appearance and properties identical with those of any appreciably large portion of the same element. This particle is then, for obvious reasons, a convenient, and, in fact, the only suitable, starting-point for our deductions and calculations, and to it the name "atom" (Greek, ἄτομ-ος = indivisible) is given. From the meaning it is clear that it can apply only to an element, as no atom of a compound or mixture of elements could exist, for any such compound or mixture must of necessity be divisible into dissimilar particles. An "atom" can be defined as "the smallest particle of matter which can take part in a chemical change." A fairly good conception of the extremely minute dimensions of an atom is obtained by endeavouring to imagine a drop of water magnified to the size of the earth, when the atoms of hydrogen and oxygen, of which the water is composed, would be about the size of a billiard ball. This conception is based upon advanced physical theories, which are entirely beyond the scope of such a series of articles as this.

Elements possess, in very varying degree, a property which causes, or tends to cause, them to combine with various elements with which they may come in contact. This property is known as "chemical affinity," a term which is to a certain extent self-explanatory. All atoms possess this property, and each atom will exert its affinity (which must be satisfied) upon one or more atoms of the same element, or any other more suitable element or elements in its immediate vicinity, forming a little mass which, under precisely the same conditions as to environment, temperature, etc., the chemical affinity of all the component atoms is satisfied. This little mass is known as a "molecule," and may consist of two or more atoms. (N.B.—In a few cases a monatomic molecule is known.) A "molecule," therefore, is "the smallest particle of matter which can exist in the free state."

If, in any substance, the molecules are all alike in constitution, the substance is pure. It is known as a "chemical individual." When a chemical individual is composed of molecules containing two or more elements it is known as a "compound." Suppose, however, that the molecules of which a body is composed are not all alike, but exist side by side, each with its individual constitution undisturbed, the body is not pure, but is a "mixture" of individuals, either elementary or compound.

Iron and sulphur, being elements, are chemical individuals, each exhibiting properties peculiar to itself. Mix together in a mortar small quantities of iron filings and sublimed sulphur. Both the iron and sulphur retain the properties they possessed before mixing. The mixture is different in colour to either of the constituents, but, beyond that, no change has been effected. It can easily be shown that this change is merely mechanical. Pass the end of a magnet through the mixture. Hold the magnet over a piece of paper and tap it gently. Any mechanically adherent particles of sulphur will be removed by the tapping, and the remaining adhering particles of iron can be brushed off on a different part of the paper. Compare the separated materials. Each is exactly the same as it was before mixing. The separation has been of the simplest, physical and mechanical means only having been employed.

Heat another portion of the mixture over a gas jet without free access of air. The product has no resemblance in properties to either of the ingredients before heat was applied. The iron cannot be removed by magnetic influence, nor could the sulphur be dissolved out by means of carbon bisulphide; in fact, both of them have lost their own peculiar properties, and have combined to form a substance of an entirely different nature to either, and possessing properties which neither previously possessed.

This change has been brought about by the exposure of the mixture to conditions different to those under which each retained its own individuality, and is known as "chemical change," the body produced being a chemical "compound." Thus we see that a "mixture" is produced when chemical individuals are mixed without in any way affecting their properties, whilst a chemical "compound" is produced when chemical individuals are made to interact with the production of a body differing in properties from any of its ingredients.

It has been found that the full names of the elements are cumbersome in use, and to avoid inconvenience a symbol is used to denote each element. This symbol is frequently the initial letter of the name by which the substance is known, in other cases the chief letters in the Latin name are used, but in every case the symbol is applied to one atom of the element under consideration. The method of using these symbols will be indicated in the next article of this series.

Chemistry cannot satisfactorily be studied without the aid of a text-book, and the pharmaceutical student will find that Newth's 'Text-book of Inorganic Chemistry' (Longmans, Green and Co., 6s. 6d.) is the best work for his purposes.

PERSONAL VIEWS ON CURRENT TOPICS.

Of Ill-advised Concessions.

BY AN ORDINARY PHARMACIST.

Secrecy Without Liability.

Some time ago I read in the *Pharmaceutical Journal* a statement to the effect that the intention of those who framed the Medicine Stamp Duty Acts, and the object of the Board of Inland Revenue in administering the Acts were to ensure a tax on secret nostrums. It now appears that the Jim Crows of Somerset House have been so blind to the interests alike of the Revenue and of the medicine-taking public as to throw that principle to the winds, and to declare that by the device—delightful in its simplicity—of putting a few initial letters on the label, a compounded medicine may be recommended by a chemist for any disease under the sun, without any medicine stamp being affixed. Beecham's Pills will, of course, always be liable to duty, but, as far as I can see, there is nothing in the world to prevent an enterprising chemist in the future from placing on the market a liver-pill, the formula for which may be buried as securely as a needle in a haystack in the 'P.J. Formulary,' advertising the pill extensively, recommending it for all manner of ailments, and selling it right and left to a gaping and admiring public. The "concession" is being hailed—by chemists—with lively satisfaction, because now they will be able at will to recommend their secret nostrums. It seems to me an equally lamentable thing that chemists should desire this as that the Inland Revenue should have gone out of their way to encourage it. The chemist of to-day is too much inclined to "take the Cash, and let the Credit go, Nor heed the Rumbling of a distant Drum." To my mind, chemists will best maintain their self-respect and dignity by disclosing, in one way or another, and preferably on the label, the composition of every medicine which is given an "ailment-name."

The Public Interest.

I have said that the oracles at Somerset House have shown themselves blind to the interests of the medicine-taking public. The statement, perhaps, needs a little explanation. While the man in the street will pocket the three-halfpence which he used to contribute to an ungrateful national exchequer, I cannot think that his interests are really served by the new departure. The effect of the cheaper price and the more fulsome and frequent recommendations must inevitably be to make him dose himself more than ever, to the probable injury of his system. Eventually, doubtless, when the medicine thus injudiciously administered has taken effect, he will be driven to a medical man and will require more medicine; but however desirable for the medical man the result may be, the events which led up to it cannot benefit the patient. The principle of Free Trade is well enough, but the medicine-taking public undoubtedly requires Protection against itself. There is little enough protection of the kind at present, but to lessen what there is by giving concessions here, there, and everywhere on the question of Medicine Stamp Duty would be a dangerous and mistaken policy.

The Fetich of Secrecy.

There are still some relics of mediævalism who cherish a profound and pathetic belief in the unique virtues of some particular cough mixture or liver-pill. With them I have little sympathy. While I yield to none in my faith in the important part played by the judicious and considered treatment of disease by means of drugs, while I am content to acknowledge that one combination may be better than another, I must confess that the sovereign panacea of our grandfathers does not appeal to me at all. The medicinal treatment of disease must be based on human knowledge of physiology, chemistry, and pharmacopedics, and all that is necessary in compiling a formula for a medicinal compound is to bring to bear a trained intelligence, based on an acquaintance with those sciences. Most of the sovereign panaceas, once jealously guarded from the eye of the assistants, which chemists of the old school have shown me, have set at defiance the principles of therapeutics in a strenuous endeavour to produce a compound which should conform to a spurious standard of pharmaceutical elegance. As knowledge advances, it is necessary that pharmaceutical preparations should also change. Some people seem to think that a preparation which has had a large sale for fifty years must necessarily be of great value. It may be, but it by no means necessarily has all the value possible. It is probable, indeed, that the advance of knowledge during the fifty years may have proved that the formula is in some respect defective.

Sauce for the Goose.

Those who appear at first sight to suffer most severely from the new reading of the Acts are the "legitimate" limited companies; those, I mean, which are owned and controlled entirely by qualified chemists. But it is absolutely impossible to make any sort of distinction between one kind of company and another. A limited company, as pharmacists know to their cost, cannot pass an examination or serve a regular apprenticeship. By the faulty drafting of an Act of Parliament, limited companies trading as chemists have enjoyed for a quarter of a century certain advantages which are denied to individuals. With those advantages they must now rest content. It cannot be too clearly understood that any concession which might be granted to an impersonal agglomeration, however highly qualified the individuals comprised therein, must logically be extended to all limited companies which trade as druggists or have a drug department. Driving in the wedge a little nearer home—or a little further away—it would be recognised as unreasonable that the drug department on the first floor of a large store should have a privilege which is denied to the grocery department on the ground floor, and eventually the celebrated third exemption would have to be extended to all. Where would the Revenue be then? I notice, by the way, that some journalists who make their living out of pharmacy show at times a disposition to volunteer information and warnings to unqualified persons and limited companies as to how they may keep within the law. While I appreciate broadness of mind, I cannot conceive that it is the duty of any pharmacist, or institution supported by pharmacists, to give gratuitous advice which might tend to lessen the privileges of the qualified man for the benefit of his unregistered trade competitors. Not even Cobden would have advocated that sort of philanthropy.

THE CENTENARY CELEBRATIONS IN PARIS.

SOCIÉTÉ DE PHARMACIE DE PARIS, 1803-1903.

The drive along the Boulevard St. Michel, the principal thoroughfare of the Latin Quarter, is over, and the *cocher* stops at a large structure in the Avenue de l'Observatoire. On the way, one has passed some of those interesting little spots of the students' district which are famous, both in real life and in fiction. On either side of the road are places whose names are familiar everywhere; those little cafés, at which most of the great men of modern France were accustomed to spend their youthful evenings, are still doing good business; whilst numerous schools, colleges, and educational institutions are in the immediate neighbourhood. Indeed, frivolity and learning are strangely admixed in this district; here, on the left, a little way beyond the Café d'Harcourt, is the Panthéon; the Sorbonne is not far away. Statues to the great pharmacists, Pelletier and Caventou, are inspected on passing, and within easy reach of the School of Pharmacy, where the carriage has come to a stop, is the Bal Bullier, famous half a century ago as the rendezvous of students.

SALLE DES PAS PERDUS.

On entering the gates, Mr. S. R. Atkins and Mr. T. H. W. Idris, the English delegates to the celebration of the Paris Society of Pharmacy, pay first

A Visit to the Old Concierge,

whose heart is delighted by the purchase of a few photos of the building, and it is he who conducts them to the "Salle des pas Perdus," where has just commenced the reception of those who have assembled to take part in this memorable gathering. M. Léger, the President of the Paris Society, is already known to the British visitors, whom he recognises as soon as they enter. He receives them with great courtesy, and at once introduces a number of his distinguished *confrères*.

Presently an adjournment is made to the apartment where the meeting is about to be held, and in which a large number are already gathered. The rather short gentleman with the black, well-groomed moustache, with the courtly manner of a Parisian, who first says a few words to one and then to another, is one of the successors of the great Vauquelin. He is Monsieur Guignard, the Dean of the School of Pharmacy;

The Littte Red Button-hole

indicates that he is an officer of the Legion of Honour. He comes forward to shake hands with the English delegates. The grey-haired gentleman, with the white imperial, and the air of a general, is M. Marty, who for many years was chief inspector of pharmacy to the French Armies; he also has a word to say in his own tongue with the two Presidents.

The professor of chemistry at the Sorbonne, M. Haller, whose name is known to students of chemistry in every country, is sitting over there near to Mr. Idris; he is also getting very white, and he, too, has already said how honoured he is at welcoming the foreign guests. The gentleman with the dark grey overcoat, and the air of a man who bears his threescore years and ten very lightly, is Professor Riche; he was the President of the Academy of Medicine, who received President Loubet on the occasion of the opening of a new hall; he is now chief chemist to the Mint.

SALLE DES ACTES.

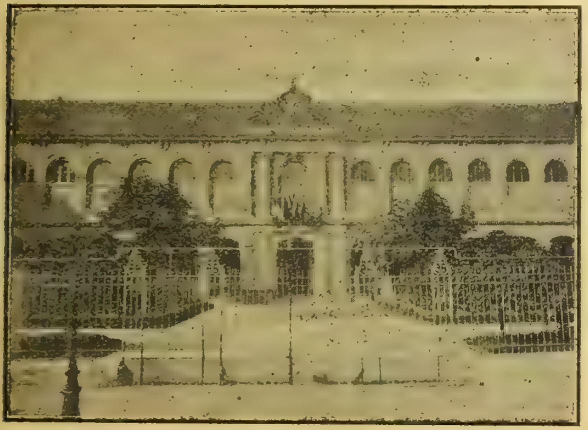
Seated on the left of Mr. Atkins is a very old gentleman, who bears a historic name; this is the son of the great Caventou, who, with Pelletier, discovered quinine; M. Caventou fils regrets he does not speak English, but, by his manner, shows his pleasure at being seated so close to the most honoured guest. On the right of Mr. Atkins is Professor Bourquelot, who is presently going to recall the history of the Society, of which he is Secretary. Mr. Bourquelot is in the prime of life, and perhaps resembles in appearance an Englishman more than any of his *confrères*.

The tallest gentleman in the room is M. Petit: he speaks English, and greets the English delegates in their mother-tongue. He recalls his visit to London on the occasion of the jubilee of the Pharmaceutical Society, makes inquiries after old acquaintances, and speaks sympathetically of his old friend, the late Mr. Martindale. The tall, spare man, with dark hair and sallow complexion, is Professor Schaer, who has journeyed all the way from Strassbourg; he speaks fluent English, and introduces himself to the guests from over the water. M. Dorneville, who has come from Brussels, sits next to Mr. Idris, and seems to feel quite at home.

The President of the "Société de Prévoyance des Pharmaciens de la Seine" also presents his compliments, and hopes the guests have had a good voyage. This is M. Riéthe, a jovial old gentleman, who likes to crack a joke. M. Behal, the Professor of Toxicology, is also at the table of honour, so are M. Yvon, M. Vigier, and M. Villejean, the deputy; but the room is full of men illustrious in the world of science, all of whose names space will not permit to mention. The place in which the meeting is held is of historic interest. It is the

"Salle des Actes,"

which, in plain English, means the examination hall. The walls are covered with superb paintings, representing the illustrious men of science, of whom France has produced so many. The large portrait at the end of the room is that of M. Houël, who in the seventeenth century planted the garden out of which grew the Society whose centenary is being celebrated to-day. There are pictures of the Parmentier, who introduced potatoes into France; there is Vauquelin, Pelletier, Caventou; and hundreds of other names are recalled by these pictures on the walls. It is, indeed, a privilege to be seated in this wondrous picture gallery. The mind instinctively goes back to Houël and his little back garden; one marvels at the wonders that have been worked at the instigation of this grocer-apothecary, who lived in the unscientific days of the seventeenth century. And what memories are recalled by these faces on the wall; the stormy days of the Revolution, in the thick of which some of the greatest work in science was being done. In imagination one can see Fourcroy presenting Vauquelin to Napoleon, and poor Vauquelin's perturbed look when he has to choose between saltpetre and the guillotine. Parmentier's potato field in the Bois de Boulogne is brought to mind, and the guard which surrounded the field so as to impress the Parisiens with the value of the vegetable which at first they despised. And then there were the great discoveries made by the men here represented; hanging near to Vauquelin is Derosne, who discovered the first active principle, narcotine. One seems to see him in his laboratory, with his crucibles and imperfect appliances, perplexed as to what this curious substance might be, and at last reluctantly putting it out of his thoughts, ignorant of the importance of his discovery. One thinks of the various decrees, *arrêts*, and laws which, at one time or another, have caused the form and name of the Society to change, but have never been able to alter its great destiny or interfere with its inward development. And as one sits in this chamber of reminiscences, the concurrent events in the general history of France, the overthrow of Kings, the downfall of Emperors, and the hazardous times of the first Republic are all recalled. But the time for reflection is over,



PARIS SCHOOL OF PHARMACY.
Front View.

M. Léger is on His Feet;

the séance is opened.

M. Léger commenced his address by a reference to the courtesy of the Dean of the School of Pharmacy, to whom they were indebted for their place of meeting, and then proceeded to express the pleasure it gave him to welcome the delegates from foreign and provincial bodies. After this brief introduction, he recalled the names and the work of the great pioneers of science of the last century. They must expect to see, he said, many important transformations both in the principles and the practice of pharmacy; science would become, so to speak, more simple, and those complex reactions which were involved in the preparation of galenicals would, no doubt, be satisfactorily explained. Chemistry was becoming one of the sciences the most useful to pharmacists, but it was not the only science on which they depended for medicinal supplies. "Man in his struggle against disease," continued M. Léger, "is obliged to seek remedies in the three realms of Nature; the mineral kingdom furnishes him with crude materials, which by the art of the chemist are transformed into medicinal salts; but it is more particularly in the vegetable world that he finds the most valuable remedies . . . whilst the animal kingdom is also an important source from which antidotes to disease are obtained." Referring to the advancement of pharmaceutical science as regards the

Isolation of Active Principles,

he said it was important that drugs should be divested of all the matter which was an encumbrance to its active part. Reverting to the disuse of old-fashioned and unscientific galenicals, and the increasing popularity of scientific preparations, he appropriately quoted the old French saying, "Adore ce que tu as brûlé et brûle ce que tu as adoré." The possibilities of synthetic chemistry was touched on, in passing, by M. Léger, who proceeded to remind his hearers of the work of past and illustrious members of the Paris Society. In this connection he mentioned the discovery of chloroform by Souberon, of iodoform by Lérullas, of magnesium by Bussy, of strychnine, as well as quinine, by Caventou and Pelletier, of aconitine by Duquesnel, and of codeine by Robiquet. The service of the chemist, as a deterrent to

The Criminal Use of Poisons,

and in detecting poison in food substances were among some of the most important duties he was called on to perform; and here he recalled the fact that before the establishment of municipal laboratories in France it was the private pharmacist who conducted investigations into these matters. The development of the commercial side of pharmacy was next referred to, but M. Léger neither expressed his approval nor otherwise of this development, but he blamed the law relating to pharmacy, and expressed the opinion that it was sadly in need of alteration; there were too many pharmacies, whilst the number of students attending schools of pharmacy was considerably less this year than last. The concluding words of a most instructing and interesting address were very hopeful, and are worthy of repetition:—"La Société de Pharmacie de Paris, Messieurs, marchant sur les traces de ses devanciers, continuera à être la Société illustrée par son premier Président Parmentier. Elle continuera à être la gardienne jalouse des traditions de science et d'honneur que lui ont leguées ses ancêtres."

M. GUIGNARD, Dean of the School, followed with a short discourse, and paid a special tribute to Vauquelin. Recalling the uncertain days of the Revolution, he cited the demand made by a member of that historic "comité de salut publique," who approached the celebrated pharmacist with these reassuring words: "Citoyen Vauquelin, fais nous du saltpetre où je t'envoie à la guillotine." The address terminated by an allusion to the relations between chemistry and pharmacy.

Addresses of Congratulation

from foreign and provincial societies were then read. These included two from Germany, and others from Austria, Belgium, Denmark, the United States, Italy, Roumania, Russia, and Sweden, as well as from numerous French societies. From Scotland an address was read, signed by Mr. D. B. Dott, Chairman of the Executive of the N.B. Branch of the Pharmaceutical Society; and from the Irish Society one had been received bearing the signature of Mr. G. D. Beggs. On behalf of the Pharmaceutical Society of Great Britain, the President, Mr. S. R. ATKINS read the following address:—

TO THE PRESIDENT AND MEMBERS, SOCIÉTÉ DE PHARMACIE DE PARIS.

The Council of the Pharmaceutical Society of Great Britain, on behalf of the pharmacists and chemists and druggists of Great Britain, tenders in all sincerity and cordiality the warmest congratulations to La Société de Pharmacie de Paris on the occasion of the celebration of the hundredth year of its existence. The history of the Société de Pharmacie de Paris is the history of pharmaceutical progress and development in France, and the record of brilliant work and distinguished names which constitutes the Society's roll of achievements is one of which France may justly be proud and the whole world grateful.

Science has no geographical limits, and those who follow science, pharmaceutical or otherwise, have a bond of union which is beyond the reach of international politics; as *confrères*, therefore, and colleagues, rather than representatives of foreign practice, the members of the Pharmaceutical Society of Great Britain rejoice to-day with the members of the Société de Paris, and wish them uninterrupted success in the new era of effort now so aucpiciously commenced.

SEAL

(Signed) S. R. ATKINS, *President;*
C. B. ALLEN, *Vice-President.*
RICHD. BREMRIDGE, *Secretary.*

The congratulations from the British Pharmaceutical Conference were presented by the President, Mr. Idris. The address was as follows:—

TO THE PRESIDENT AND MEMBERS OF THE SOCIÉTÉ DE PHARMACIE DE PARIS.

On behalf of the British Pharmaceutical Conference, I congratulate you very heartily on having attained to the 100th anniversary of your foundation as a Society. Your Society has the honour, I believe, of being the oldest Society of Pharmacists in the world. It is well known that you have been the pioneers of scientific pharmacy since your formation, and that the results of your labours have been of inestimable value to science and to humanity. You have had the honour of having amongst your members some of the most eminent scientists in the world, and it is a great pleasure to realise that you have amongst you now some of the most distinguished and successful living investigators to continue the work of their predecessors.

I had the pleasure, as one of the jurors appointed to award the Hanbury Medal, to determine that it should be given to your eminent countryman, Monsieur Collin.

We wish you, if it be possible, greater success in the future than you have had in the past, and that, for all time, the Society of Pharmacy of Paris may continue to set an example to the world of the benefits that may be derived from combination for the pursuit of the knowledge of science and its adaptation to the wants of humanity.

That you may, as the result of your labours, realise the satisfaction and happiness that results from work well done is the earnest desire of the members of the British Pharmaceutical Conference.

T. H. W. IDRIS, *President.*

M. BOURQUELOT then rose to read his paper on

The History of the Society,

of which he is General Secretary.

The Paris Society of Pharmacy, or, rather, the body from which it got its birth, was founded in the year 1777. Towards the end of the sixteenth century, one Nicolas Houël, who combined the profession of the apothecary and the trade of the grocer with the calling of artist, opened a garden for the culture of medicinal plants. After passing through various stages of evolution, we find that in the year 1777 this garden of plants had developed into a school, recognised by the State in the reign of Louis XVI., and known as the College of Pharmacy. Sixteen years later, in 1793, the college was suppressed by an order of the Convention, as were also all other "Corporations"; the suppression was not, however, of long duration, for several days after this order the school was again recognised. Now up to the year 1803, this college was the body which guarded the interests of pharmacists, and generally administered the regulations relating to the practice of pharmacy; but in this year the "Loi de Germinal," a law which is still in force, was passed, and, by

A DECREE SIGNED BY BONAPARTE,

everything connected with the school was confiscated, and the State took the administration of the law into its own hands. It was at that date, just a century ago, that the Société de Pharmacie de Paris was established, as a private and scientific institution, having nothing whatever to do either with the commercial or the legal aspects of the calling. The professors of the new school, under Government control, issued an order (*arrêt*), by which the members of the Society were entitled to hold their meetings in the "Salle des Actes," otherwise the examination hall of the school. Twenty years later, in view of the fact that the law of 1803 was inefficiently administered, another association was formed, under the title of the "Société de Prévoyance," which body took upon itself to inform the Government in cases of infractions of the regulations. To return to the passing of the 1803 enactment, it was interesting to recall that it was

A DEPUTY NAMED FOURCROY

who framed and introduced the Bill. Fourcroy was a doctor, and a great orator, and was related to a chemist named Chèradame, who kept a shop in the Rue St. Denis. In this pharmacy—and here comes a most interesting incident—the famous chemist, Vauquelin, served his apprenticeship. One day, which subsequently proved to be a very fortunate day for him indeed, young Vauquelin fell ill, and Fourcroy, the doctor, deputy, and orator, was called in; an attachment sprung up between them, with the result that on his recovery Vauquelin became assistant to Fourcroy, and, in fact, lodged with the latter's two sisters. The doctor was a man of great influence, and Vauquelin was a man both clever and industrious, and whether it was due to the possession of these two qualities by the chemist, or that combined with Fourcroy's influence, is immaterial; but, in any case, Vauquelin was appointed as the first Dean of the School of Pharmacy, and was presented to Bonaparte himself by Fourcroy. After recalling the most interesting details concerning the intimate relationship between two celebrated men, Professor Bourquelot changed his subject, so to speak, and the Long Roll of Illustrious Past Members of the Society was recalled. Derosne, one of the founders of the Society, isolated the first active principle; this was narcotine, but the importance of his discovery was not realised till a later date. Six years later Vauquelin isolated "Nicotine" and it is interesting to reproduce, in his own words, Vauquelin's account of his discovery, and, by the courtesy of Professor Bourquelot, the representative of the *Pharmaceutical Journal* had the privilege of reading this description in Vauquelin's handwriting, and, though the document is dated 1809, the characters are almost as legible as when they were written, nearly 100 years ago:—"En faisant l'analyse de *Nicotiana Tabacum*," writes Vauquelin, "j'ai trouvé une substance qui m'a paru differente de toutes celles qui ont été reconnues jusqu'ici dans les vegetaux et qui me semble, d'après cela, meriter un nom et une place particulière parmi les matériaux immédiats des plantes." With Robiquet, another member of the Society, Vauquelin discovered "asparagine," whilst "cantharidine" was separated by the former. Boulley isolated "picrotoxine"; Caventou and Pelletier emetine, strychnine, brucine, veratrine, cinchonine (cinchonine, by the way, was simultaneously discovered by Duncan). Solanine was found by Desfosses, of Besançon, gentianine by Henry and Caventou, and these are not all the discoveries made by past members of this illustrious body, whose

PROFESSOR BOURQUELOT.
Who Retraced the History of the Society.

First Officers were as Follow:—

President—Parmentier.
Vice-President—Vauquelin.
Organising Secretary—Bouillon-Legrange.
Treasurer—Trusson.
Secretary—Delunel.

As the lecturer pointed out, Parmentier was chief Chemist to the Army of Napoleon, it was he who introduced potatoes into France, and made some important researches in reference to the production of a substitute for cane sugar, which at that time was costing three francs a pound in France, from grapes.

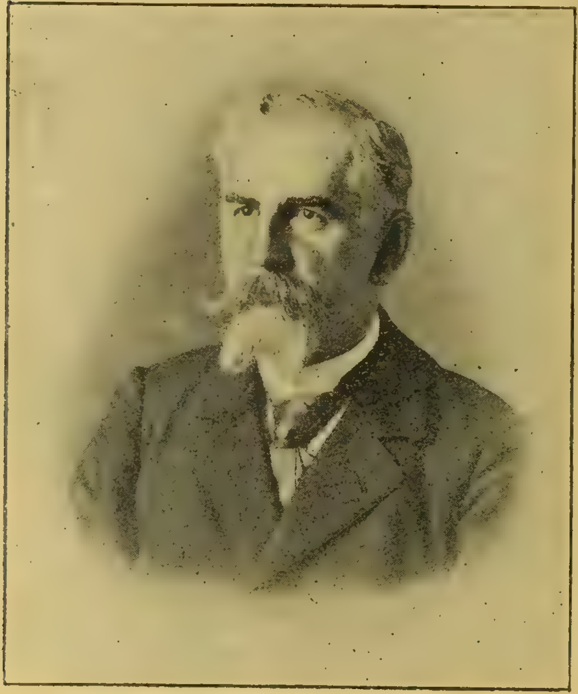
Time did not permit M. Bourquelot to mention less illustrious names, but he reminded them that the success of the Society depended also on men who, though possessing no great parts, would give their time and energies to the furtherance of the cause of science. He cited one man, by name Boudet, who, though, in a sense, mediocre, had done much in one way or another to assist the Society. And it was Boudet whom Bourquelot took as an example from which to draw the lesson with which he concluded his discourse:—"Cet exemple (Boudet) j'ai voulu au moment où nôtre société commence son deuxième siècle le transmettre aux générations qui vont bientôt nous remplacer. Il leur rappellera que, pour fonder une œuvre durable, il faut surtout des hommes de bonne volonté."

This address concluded, M. Léger announced "Messieurs, la séance est levée."

THE DINNER.

At the corner of the Rue Castiglione, facing the Tuileries Gardens and bounded on its other two sides by streets eternally linked with the memories of the composer of "The Marseillaise," Rouget de Lisle, and one of France's greatest poets, Alfred de Musset, stands the Hotel Continental. It is built on the sight of an historic edifice, the "Ministère des Finances," an erection which was one of the first public buildings to suffer demolition by the Communards, at whose hands it was burnt to the ground in 1871. This spot is of special interest to English chemists, for within a stone's throw are the four principal British pharmacies of the French capital. It was in the gorgeously appointed banqueting hall of this hotel that the centenary dinner of the Paris Society of Pharmacy was held on Saturday, October 17. This was indeed A Historic Gathering. Never before, perhaps, has such an illustrious assembly of pharmacists met together at the same table, for here were assembled a body of men, the names of most of whom are known in the scientific circles of every land. The President of the Paris Society was in the chair, and facing him was the President of the Pharmaceutical Society of Great Britain, wearing his chain of office. Close by were seated Mr. Idris, representing the British Pharmaceutical Conference; Professor Schaer, of Strassbourg; M. Dorneville, of Brussels; and delegates from numerous scientific societies. The foreign guests had been very thoughtfully placed side by side with those of their hosts who spoke their own language, and the dinner, which was of a class which the *chefs* of Paris alone know how to serve, could not have passed off more happily.

At its conclusion M. Léger, who presided, in a few brief and suitable sentences with which he proposed the health of the visitors, reminded his listeners of the peace which existed between the nations, and made a kindly reference to the recent visit of His Majesty King Edward VII. to the French capital, and appropriately alluded to the King and Queen of Italy, who were at that moment being entertained by the President of the Republic. It was the men of science, however, who had ever been the pioneers of international *rapprochement*. Scientific discovery would never have reached such a state of perfection had it not been for the communication which was carried on between students of all schools and all countries. Friendly relationship had ever existed between scientific workers, and it was impossible to estimate how much science owed to the interchange of journals published in different countries. Referring to the provincial associations, he paid a special tribute to the service they had rendered and the recruits they had furnished to the Paris Society, and after making special reference to the foreign countries represented at the banquet, M. Léger concluded with these words:—



MONSIEUR EUGÈNE LÉGER,
Who Presided.

"Messieurs,—Je vous demande de vouloir bien porter, d'abord le santé de nos honorables hôtes étrangers et comme nous fêtons le centenaire d'une Société scientifique de lever notre verre en l'honneur de la science pacificatrice;

"La Parole est a Monsieur Atkins."

The President of the Pharmaceutical Society of Great Britain said: Monsieur le Président et Messieurs, I have had the honour to-day to present an address of congratulation from the Pharmaceutical Society of Great Britain, on the celebration of the centenary of the Société de Pharmacie de Paris. I count it a distinguished privilege that it should have fallen to my lot as President of my Society to make this presentation, and to share in the brilliant hospitality of this banquet, and may I add that my Council warmly appreciates the honour also. I do not forget that your Society is the older of the two. We celebrated our jubilee in 1891, and were favoured on that occasion with the presence of

Three Distinguished French Pharmaciens,

one of whom, Monsieur Petit, sits at my side this evening. And we shall never forget the friendly fervour of their speeches, cementing as they did, and as I hope we are doing again to-day, the *entente cordiale* between these two great societies. Monsieur le Président, the Société de Pharmacie de Paris, during the century of its existence, produced a long list of distinguished workers in science, names engraved, indelibly, high upon the pinnacle of original research and discovery. The roll-call of such brilliant savants is too numerous for me to indicate to-night; but amongst the past and present workers I may be allowed to mention the names of Frèmy, Gauberet, Souberon, Planchon, Berthelot, etc., etc. I remember that Planchon was a Hanbury medallist, and I am justified in saying that to no man was it ever more deservedly awarded. And this naturally leads me to refer to Monsieur Eugène Collin, to whom the reward of the medal was recently made. It was the cause of great disappointment to myself that Monsieur Collin was unable, through illness, to receive the medal in person, and I regret to learn that from the same cause he is not present at this banquet. Glancing over the catalogue of M. Collin's labours in pharmacology, I am amazed at his industry and the acumen of a mind that is patient and pursuing in its devotion to science. Indeed, I cannot but fear that this intense devotion to science accounts for the prostration from which this distinguished Frenchman is suffering. Monsieur le Président, it is with infinite satisfaction I refer to your presence at our dinner in May last. The friendly, generous sentiments to which you gave expression were pleasant to listen to and abide in memory, and I may be allowed to say that whenever you or your *confrères* may honour us, no guests will be more welcome. And now, M. le Président, having referred to the *entente cordiale* between these two societies of France and Great Britain, may I be permitted to apply the thought to these two great nations? I hope, nay, I emphatically believe, that

A Better Understanding Exists

between us to-day than ever before. The visit of our King to France and of your President to England has done infinite good, whilst the most recent act of international policy—I refer to the Treaty of Arbitration between us—all this tends to consolidate the alliance, to obliterate the old-standing rivalries, and to make the silver streak no longer a dividing, but rather a uniting, medium. Sir, we admire your language, your literature, your laws, but especially your world-famed art and science. This beautiful city, Paris, with its splendid architecture and statuary, its magnificent public edifices, its boulevards and *places*, is the ambition of all men once to see, and, having seen, to return to see again, "A thing of beauty, a joy for ever." Sir, I thank you for this splendid and generous hospitality, and I pray you to accept the assurance of my profoundest esteem and admiration.

Mr. Atkins, who spoke with such clearness of enunciation as could be understood even by those whose knowledge of English was but slight, was listened to throughout with most silent attention, and on resuming his seat he was greeted with a thunder of applause.

Monsieur Guignard followed Mr. Atkins, and, with that courtly and elegant style so natural to Frenchmen, expressed the very great pleasure which he, as the Dean of the Paris

School of Pharmacy, felt at being in the presence of distinguished representatives of foreign societies, whose interests and whose objects all lay in the same direction towards the advancement of science and the unravelling of the hidden mysteries of nature.

Mr. Riethe, speaking on behalf of the "Société de Prévoyance des Pharmaciens de la Seine," read the congratulatory remarks which had been passed in the form of a resolution by the Society of which he is President.

The President of the

British Pharmaceutical Conference

then rose; he said: Mr. President and fellow pharmaciens, I thoroughly endorse everything that has been said by my friend, Mr. Atkins. I have the same regret to express as to my inability to express myself in French, but your kindness to me and my countrymen is always so great as to make it unnecessary for us to learn the language, and the same kindness has been made still more manifest to me to-night by your placing on either side of me two English-speaking gentlemen, M. Petit and Dr. Lutaud. There is, however, one part of your country where I have spent many happy days, that I can make myself understood in my mother tongue—that is Brittany. I am

A Breton From Over the Water,

a Welshman. It has been to me a source of great pride and pleasure to see the acknowledged position of pharmacists in this country. In the beautiful hall in which you held your meeting to-day I was delighted to see such a collection of portraits of scientists, whose names were made familiar to me during the study of my calling, and in the streets I was still more pleased to see the statues of Caventou and Pelletier, honoured, as stated in the inscription, "Benefactors to humanity." I regret the absence of your colleague, M. Collin, but I am glad to know that you have members of your Society who are worthy followers of their eminent predecessors. I trust that the good feeling between French and English pharmacists will continue for ever, and that the only rivalry between them shall be as to who is to do the most useful work for the benefit of their fellow beings, and that the same feelings shall always animate the two neighbouring nations. These two great nations have just given a noble example to the world by concluding an arbitration treaty that I trust will be largely followed by other nations. May the rivalry of our respective nations be as to which of them shall do most to promote free institutions and the liberty and happiness of the human race. I thank you very warmly for the exceeding kindness of your reception, and I venture to hope that you will give us on the other side of the Channel an early opportunity of proving that we entertain feelings as warm towards you as you have shown that you entertain towards us.

Mr. Idris was closely followed, and the frequent applause showed the appreciation of his hearers.

M. Dorneville, speaking on behalf of a Belgian Society, and as its President, was received with acclamation, and, speaking in eloquent terms, expressed the honour he felt in being in the presence of such a distinguished company.

Professor Edward Schaer, of the University of Strassbourg, who spoke in French, paid some high compliments to France as a nation of scientists, and referred to October 17, 1903, as a memorable page in the history of the pharmaceutical science of all nations.

Professor Bourquelot during the course of the evening, read telegrams of congratulation which he had received from all parts of the civilised world, and supplemented his remarks by making a happy allusion to Homer's legend of the lotus, and, with appropriate humour, said he hoped that each guest would find a lotus in his plate.

Space, however, will not permit, even briefly, to record the sentiments expressed by the numerous and distinguished representatives of the various associations, who had journeyed, many of them, from the remote corners of France to honour the Paris Society with its presence on this memorable occasion. Suffice it to mention that such distinguished men as the Professor of Chemistry of the Sorbonne, M. Haller, and M. Marty, former Chief Inspector of Pharmaceutical Service of the French armies, were among those who contributed to the after-dinner oratory.

Coffee was taken in an adjoining apartment, and here

Acquaintance was Renewed.

with those gentlemen who had been presented to the English delegates at the afternoon meeting, and opportunities of conversation were afforded.

Here M. Guignard makes himself very agreeable, and mention is made of the "Cruciferæ," in connection with which family the Dean of the Paris School has done so much valuable work, but Mr. Guignard is modest and prefers to speak about things English. Professor Schaer again shakes hands and sends messages for Mr. Holmes and Professor Greenish. A gentleman interested in "mustard" wishes to make some inquiries as to English trade, and is very grateful for the particulars given to him. M. Léger is in great request, but he has time to see that his guests are feeling quite at home, and Professor Bourquelot, too, hopes the English visitors are enjoying themselves. But there is no need to be solicitous; M. Petit is there, and so is Dr. Lataud, both of whom can make themselves understood. Then some of the younger men are there also; several of them have spent a holiday in England, and are delighted to be able to say a few words to the delegates. Among these are Dr. Bougault and M. Henri Cousin, of the Ecole de Pharmacie, and quite a number of others. M. Riéthe shakes hands again, and Professor Riche would like the guests to have another cup of coffee; M. Marty, the military-looking gentleman, speaks of M. Collin, and says how much he would like to have spoken to Mr. Atkins had not ill-health prevented him. In fact, everyone was charming, and, one after another, the company separated, delighted with the day's programme. And none among them had been more honoured and none had spent a pleasanter day than those of the guests whose way homeward lay across the silver streak.

THE VISIT TO PARIS.

English Chemists Meet the Presidents.

One of the happiest events that occurred during the presidential visit to Paris took the form of a little informal gathering of English chemists, who met together to pay their respectful greetings to the President of the Pharmaceutical Society and to Mr. Idris. The meeting was held in a room, especially engaged for the purpose, in one of those magnificent establishments in the English quarter of the French metropolis. Nearly all the English pharmacies in Paris were represented by one or more assistants.

Those present included Mr. R. E. Lloyd, Mr. J. R. Stevenson, Mr. E. J. Chatburn, Mr. F. J. Boss, Mr. T. Rawlins, Mr. T. Hannay, Mr. W. S. Bound, whilst among those who expressed their regret at not being able to attend were Mr. J. Green, Mr. Lewis, Mr. Perret, Mr. Richardson, and several others.

Some of these gentlemen have passed many years in different parts of the Continent, and their chemist friends at home, who will recognise these names, will be pleased to learn that their

THE FIRST MEMBERS OF THE ENGLISH CHEMISTS' ASSOCIATION IN PARIS.
Founded October 19, 1903.

sojourn in foreign lands has made them none the less loyal to the head of the Pharmaceutical Society.

Mr. Atkins, who on this occasion was at his best, gave some very suitable and helpful advice to those who had so thoughtfully done this honour to the Society. He congratulated them on their wisdom in visiting a foreign country in which the practice of pharmacy had reached such a high state of perfection. They would find, he said, that the increased knowledge they were obtaining of foreign pharmaceutical practice would prove useful to them when they returned to their own country, and he felt sure that in after years they would look back with pleasure on the time they had spent amongst people whose mother tongue was different to theirs. Their stay in France, however, would have a still more important and far-reaching influence. He felt that this intercourse between people of different nationalities helped to bring whole nations closer together, and went a great way towards creating a better understanding between the peoples of the world. They were doing a useful work in that friendliness of peoples ensured peace in the world.

Mr. Idris also made some very suitable remarks, recalled his previous visits to Paris, and expressed how very delighted he was to meet so many young men of the same country and the same calling as himself.

Mr. Lloyd, in a few nicely-chosen sentences, and acting as spokesman for his associates, said how very privileged they felt in having the honour and the opportunity of shaking hands with the President of the Pharmaceutical Society and the President of the Conference on the occasion of their official visit to Paris. Formal speeches, however, were few and short, and most of the evening was taken up in exchanging views as to the position and practice of pharmacy in the two countries. Were the laws relating to the sale of poisons in France as stringent as those in England? Were they as well enforced? How did the prices obtained in the two countries compare? Was the sale of proprietaries as large? All these interesting topics were briefly and conversationally discussed, and the time passed so quickly and happily that the hour for adjournment came long before everyone had said all he would have liked to say.

Subsequently an Informal Meeting

was held, at which it was decided to form an association of English chemists in Paris, which should hold meetings of a social character once a fortnight. At this, the first meeting of the new association, the following resolution was passed:—

> That this meeting of English chemists resident in Paris desires to express its great gratification at the official visit to Paris of the Presidents of the Pharmaceutical Society of Great Britain and of the British Pharmaceutical Conference, and is deeply sensible of the honour conferred by their presence.

CAMBRIDGE PHARMACEUTICAL ASSOCIATION.

ANNUAL MEETING.

Friday, October 16, 1903, at the Bull Hotel, Cambridge, the **President** (Mr. A. Sidney Campkin) in the chair.

The **Hon. Secretary** laid a batch of letters dealing with matters pharmaceutical before the meeting. Referring to a communication *re* Medicine Stamp Duty, the **President** said he had written to the Secretary of the Pharmaceutical Society, calling the attention of the Council to the unsatisfactory condition of the present position in regard to stamp duty on medicines.

Poisons Legislation.

The **Hon. Secretary** reported that he had been in communication with local members of Parliament with reference to pharmaceutical and poisons legislation.

Sir Robert Fitzgerald, member for Cambridge Borough, wrote:—

> I have your letter as to the amendments to the Sale of Poisons Bill, and I can comply with the request in it, namely, to reserve my opinion upon the question involved; but I consider a good deal of what you have written is of such practical importance that I am going to place it before the Home Secretary.

Mr. W. Raymond Greene, M.P. (West Cambs), wrote:—

> I cannot, nor do you expect from the tone of your letter that I should, pledge myself to vote for or against any Bill that is not yet in members' hands; but, on the face of it, I am prepared to say that I should be ready to support any course that commends itself to the Pharmaceutical Society, though I can make no definite promises before seeing the Bills.

On a subsequent date Mr. Raymond Greene wrote:—

> As far as I can see, I am in agreement with the objects sought by the Pharmacy Bill. I entirely agree that it is unfair for companies to have the advantages they at present possess over individual chemists, who have stiff examinations to pass to acquire the necessary qualifications.

Mr. C. D. Rose, M.P. (East Cambs), wrote:—

> I thank you for your letter and calling my attention to the proposed legislation dealing with pharmacy. When it is further advanced I shall be glad if you will write to me again or see me, and explain more in detail its provisions and your views.

Mr. **Peck** said he wrote to the Cambridge University members, Sir Richard Jebb and Sir John Gorst, on the matter. Sir Richard wrote that he would be glad to hear from him when the Pharmacy Bill was introduced. He had an interview in London with Sir John Gorst, with whom was Sir Michael Foster. With reference to the Poisons Commission, he (Mr. Peck) pointed out certain things in Mr. Walter Hills' remarks, and Sir John Gorst said, "Aren't you crying out before you are hurt?" He replied that it was pretty conclusive the Government would introduce a measure upon that question. Sir Michael said, "There is no doubt they will." Then they came to the Pharmacy Bill, and Sir Michael said, "I know that Pharmacy Bill, and it's all good, Sir John. I think we can support it."

The meeting regarded the replies as very satisfactory.

Balance-Sheet and Annual Reports.

The **Hon. Treasurer** submitted the balance-sheet, which showed an increased balance in hand, while the reserve fund remained as before.

On the motion of Mr. **Addison**, seconded by Mr. **Peck**, the balance-sheet was adopted, and a vote of thanks passed to the Treasurer.

The **Hon. Secretary** submitted the eleventh annual report. Though the number of meetings called had been less, the Committee had done some useful work by correspondence with the members, and had obtained their opinions of the various topics as they occurred. The year had not passed without loss to the Association. Three of the Committee had removed from Cambridge, and death had claimed a most esteemed and hard-working member, whose place it would be difficult to fill, for in Mr. Parson they had lost a valued counsellor and a staunch supporter. The subject of medicine stamp duty had been before them for some time past, through the medium of the journals, and before long a meeting would be called to discuss the position of chemists in regard thereto.

The report was adopted, and a vote of thanks passed to the Hon. Secretary for his services.

Before the election of officers was proceeded with, the **President** reviewed the work of the past year. He made a feeling allusion to the death of Mr. Parson, and commented on the removal from Cambridge of Mr. White and Mr. Macavoy, two hard-working members. In conclusion, the President said what the Association wanted was the practical sympathy and personal attendance of members.

Election of Officers.

The following officers were elected:—President, Mr. E. S. Peck; Vice-Presidents, Messrs. A. S. Campkin and A. Deck; Hon. Treasurer, Mr. H. F. Cook; Hon. Secretary, Mr. B. S. Campkin; Committe, Messrs. C. S. Addison, P. Payne, Evans, Mallett, Church, and Moss.

PHARMACEUTICAL SOCIETY OF IRELAND.

EXAMINATION RESULTS.

Pharmaceutical Licence Examination.—L. W. Longmore P. D. Larkin (M. F. Brennan and E. E. Wolfe), A. C. Loton, T. Beattie passed. Six candidates were rejected.

Pharmaceutical Assistant Examination.—C. B. Johnson and S. P. Moloney passed. Two candidates were rejected.

Registered Druggist Examination.—F. P. Gurd, R. Hobson, and Katie McCann passed. Four candidates were rejected.

CHEMISTS' ASSISTANTS' ASSOCIATION.

MUSICAL EVENING.

Thursday, October 15, 1903, at 73, Newman Street, London, Mr. C. **Martin** in the chair. The first musical and social evening of the session was, on the whole, a great success, though there was one disappointment. The attendance was good, and the musical programme was up to the usual standard, but Mr. T. Morley Taylor, who had promised to recite, wrote to say he would not be able to fulfil his promise. That was the disappointment. Mr. Lownsbrough, however, kindly stepped into the breach and recited "The Phonograph Dog." The remainder of the programme consisted of songs, and a pianoforte duet by Messrs. W. S. Parker and H. S. Wilkes. Songs were rendered by Messrs. W. W. Ballantyne, E. H. Barker, Victor Blin, E. Cairn, J. S. Durham, —. Easton, Sydney Jamieson, Millner, and Webb. During an interval a collection was made on behalf of the Benevolent Fund, 13s. 3½d. being contributed. A vote of thanks was accorded to Mr. Martin for taking the chair, and Mr. **Martin**, in replying, expressed the pleasure it gave him to be present. He was supported by representatives from several of the wholesale houses.

NORTH STAFFORDSHIRE CHEMISTS' ASSOCIATION

FIRST MEETING OF THE SESSION.

Thursday, October 15, 1903, Mr. J. Averill, J.P., in the chair.

Early Closing.

The Hon. Secretary (Mr. Edmund Jones) read a letter from the Secretary of the North Staffs Traders' Association, informing him that a Conference was to be held shortly on the question of early closing and shop life generally, and asking the Chemists' Association to send delegates.

Mr. T. C. Cornwell (Vice-President), Mr. Edmund Jones (Hon. Secretary), and Mr. Morrison (Newcastle) were appointed delegates.

Vote of Condolence.

The President moved a vote of condolence with the family of the late Mr. Jenkins.

Mr. T. C. Cornwell seconded, and the vote was passed in silence.

Mr. J. D. Melling having been elected as a member,

Mr. Averill gave a

Presidential Address.

He said they would all be glad to know that the Pharmacy Bill was to be reintroduced. Alluding to Mr. Tocher's scheme for the reconstitution of the Pharmaceutical Council, the speaker approved of territorial representation. He proposed that they should discuss this important subject at a future meeting, devoting an evening to it. He regretted the large number of failures in the Minor Examinations, and was still of that opinion that if the Minor Examination was divided into two parts it would be a great benefit all round. The administration of the Medicine Stamp Acts would, no doubt, cause inconvenience to chemists, but the advantages to be gained would, he hoped, compensate for the disadvantages. He quoted extracts from Mr. J. Humphrey's paper, read at the annual meeting of the Federation of Local Pharmaceutical Associations. He also read a circular letter from the Editor of the *Pharmaceutical Journal*, referring to the Medicine Stamp question, and remarked, incidentally, that the *Pharmaceutical Journal* had improved wonderfully during the past year.

Mr. Blades having also spoken,

Mr. Edmund Jones (Hon. Secretary) expressed the opinion that the Medicine Stamp Duty would, in the long run, be for the good of the general body of chemists of this country. The wholesalers in Lancashire and Yorkshire were combining, and they had threatened to fight on the question of 1d. on pills and powders. He saw no harm at all in the matter of publishing the formulæ. In industrial centres like North Staffs, Birmingham, and Lancs, chemists' businesses were hampered by the large sales taking place in grocers' shops, hucksters, etc. It was not an uncommon thing for people to go with an egg cup or empty ginger beer bottle to some of these places for an ounce of cough mixture. No label was stuck upon these pots or bottles. In the hands of chemists and druggists these vessels would be properly labelled. On the question of the division of examinations, he always thought that a young man could get up four subjects at a time more satisfactorily than he would if he had to work on seven or eight. It had been hinted that it was a question of fees. He did not believe that.

Mr. Weston Poole and Mr. Cornwell continued the discussion, the latter suggesting that the Association should write to the Inland Revenue authorities on the Medicine Stamp question.

NEWCASTLE-ON-TYNE AND DISTRICT CHEMISTS' ASSOCIATION.

ANNUAL MEETING.

Wednesday, October 14, 1903, at the Hôtel Métropole, Newcastle-on-Tyne, Mr. Merson in the chair.

Four new members were enrolled.

Annual Reports.

The Secretary's report showed that the year had been most successful, both as regards membership and attendance at the meetings.

Mr. Kerse, the Treasurer, reported a small adverse balance, which was not considered unsatisfactory, considering some unusual expenditure which had been incurred.

Mr. Atkins stated that through pressure of other work he would not be able to continue the Secretaryship; therefore a hearty vote of thanks was accorded to him for his services.

Election of Officers.

The election of Executive was proceeded with, and resulted as follows:—President, Mr. Geo. Foggan; Vice-Presidents, Messrs. G. F. Merson, R. Wright, C. Ridley, T. M. Clague, F. Gilderdale, and F. R. Dudderidge; Auditors, Messrs. Whitehead and Dean; Treasurer, Mr. Kerse; Secretary, W. Pescod, 19, First Avenue; Council, Messrs. Atkins, Pattinson, Hill, Cubey, Buckley, Dakers, Low, and Gibson.

Other Business.

Correspondence from the *Pharmaceutical Journal* concerning stamped medicines was dealt with, and, on the suggestion of Mr. Clague, a small committee was appointed to consider it.

It was resolved to send a letter of sympathy to Mrs. Proctor on the death of her husband, Mr. B. S. Proctor.

President's Address.

The President, Mr. Foggan, then delivered his address, which dealt fully with matters of interest to pharmacists.

A vote of thanks, proposed by Mr. Merson, and seconded by Mr. Clague, was accorded to Mr. Foggan for his address.

The retiring President was also thanked by the meeting.

LEICESTER AND LEICESTERSHIRE CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Thursday, October 15, 1903, at Winn's Oriental Café, Leicester, the President, Mr. Woolley, in the chair.

Several matters of local interest were brought forward for discussion, and favourably disposed of.

A long discussion then took place on the Medicine Stamp Acts, a large number present taking part, and the general opinion seemed to be that the proposed new regulations should be met in a reasonable manner, and that they would eventually be to the definite advantage of the qualified chemist.

BRADFORD CHEMISTS' ASSOCIATION.

PRIVATE MEETING.

Tuesday, October 20, 1903, at the Royal Hotel, Bradford. The meeting had been called for the purpose of discussing the present position in regard to the medicine stamp duty. Delegates who had been present at the meeting of the West Riding Federation, held in the same place previously, remained and took part in the discussion, which was not open to representatives of the Press.

WEST RIDING FEDERATION OF CHEMISTS' ASSOCIATIONS.

ANNUAL MEETING.

Tuesday, October 20, 1903, at the Royal Hotel, Bradford, the President, Mr. Walshaw, in the chair.

Mr. Walker (Dewsbury), who was acting on behalf of the Secretary, stated that there was a balance to the credit of the Federation of £2 1s.

Election of Officers.

The following officers were elected: President, Mr. Pollard (Wakefield); Vice-Presidents, Mr. Rigby (Barnsley) and Alderman Dunn (Bradford); Secretary and Treasurer, Mr. Broadhead (Dewsbury). A sub-committee, composed of the President, Vice-President, and Secretary, was appointed to revise the rules, with a view to bringing proposals before the Federation at a future meeting. The meeting then ended.

IRISH CHEMISTS', ASSISTANTS' AND APPRENTICES' ASSOCIATION.

ORDINARY MEETING.

Monday, October 19, 1903, at 73, Harcourt Street, Dublin, the President, Mr. Edgar B. Aplin, in the chair.

The Chairman said so great was the demand for tickets for the approaching smoking concert in the Gresham Hotel, on the 30th inst., that one hundred additional tickets had to be obtained.

Five new members were elected, bringing the total number on the roll to sixty-nine.

Mr. R. G. Creed, Hon. Secretary, was entrusted with the preparation of a syllabus for the ensuing winter session.

The President announced that Dr. Charles, F.R.C.S., had promised to deliver a lecture in the course of a few weeks. He also recommended the award of book prizes for the best and second best papers on any subject of chemical interest.

PROPRIETARY ARTICLES TRADE ASSOCIATION.

MEETING OF THE COUNCIL.

Thursday, October 15, 1903, at 111, Temple Chambers, London, the President, Mr. Geo. R. Barclay, in the chair.

Reports from the Executive dealing with cases of cutting in Liverpool, rearrangement of the office staff, negotiations with the Manufacturers' Association, and the publication of the Protected List in book form annually, were considered. The form of the proposed publication was decided upon, and a recommendation that advertisements be taken in the book was adopted. A hearty vote of thanks was accorded to Mr. Percy C. Edgar for the great attention which he had given to the arrangements for the river trip which took place in July.

A vote of condolence with Mr. Albert Cooper in his recent bereavement was carried.

Mr. Sutherland asked whether it was proposed to hold a convention of delegates from local associations in London this winter in connection with P.A.T.A. matters.

The Chairman explained that although last year's convention had borne excellent fruit, it was considered to be unwise to call the delegates to London this winter to discuss P.A.T.A. matters only. He thought it might be a good thing if the Federation of Local Associations were to organise such a convention in London, to be held some time during the winter, at which, not only P.A.T.A. questions, but other matters affecting the trade generally, might be discussed. The Federation would find the Executive of the P.A.T.A. glad to co-operate in making the meeting a success.

LINCOLN AND DISTRICT CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Thursday, October 15, 1903, at the Coffee Palace, Lincoln, the President, Mr. Battle, in the chair. The items under discussion varied from the cultivation of the Northern Star variety of potatoes to ailment-named medicines. General approval was felt at the action Mr. Owbridge had taken in protecting the price of his "Lung Tonic," and at his efforts to enforce the agreement, but it was thought it would have simplified matters had he joined the P.A.T.A.

The Secretary read a few notes he had made dealing with the question of

Ailment-named Remedies,

bringing his former remarks more up to date.

A letter was also read, which had been received that morning from the Editor of the *Pharmaceutical Journal*, stating that the Inland Revenue authorities had granted an important concession to qualified chemists.

The general feeling was that the regulations had recently become clearer and more workable. The different ways by which the requirements may be met were fully discussed, the most popular one being that of stating the active ingredients on the label. An assortment of labels showing how this might be done was handed round to the members present.

The matter was very fully discussed, but it was thought that it was one of those questions which every chemist would have to settle for himself in such a way as best to suit his requirements.

The suggestion that the Association form a

Buying Committee

met with general approval, and was discussed in a very free manner. Two schemes were submitted to the meeting, but it was thought it would be better to have the matter discussed by a smaller committee. The Committee appointed consisted of Messrs. Elmitt, Watson, Dixon, and Birkbeck, and they were asked to present their report at the next meeting.

SCHOOL OF PHARMACY STUDENTS' ASSOCIATION.

FIRST MEETING OF THE SESSION.

Friday, October 16, 1903, at 17, Bloomsbury Square, London, Mr. R. R. Bennett in the chair.

Election of Officers.

The principal business of the evening was the election of officers and Committee for the session. After a brisk discussion touching certain alleged irregularities in the issue of voting cards, the election was proceeded with. The following were elected unopposed:—President and Treasurer, Prof. Greenish; Vice-Presidents, Mr. T. E. Wallis and Mr. J. S. Hills; Hon. Secretaries, Mr. J. M. Treneer and Mr. R. M. Esam. A contest for six seats on the Committee resulted in the election of Miss Hooper, Messrs. Walker, Hewlett, Gaubert, Welton, and Morson.

It was announced that the next meeting would be held on Friday, November 6, when Mr. Harold Wilson, B.Sc., will give an address.

HULL CHEMISTS' TRADE ASSOCIATION.

ORDINARY MEETING.

Tuesday, October 20, 1903, at Percy's York Hotel, Hull, Mr. H. E. Brown in the chair.

The business of the evening was the adoption of rules. The conditions of membership were decided on as follow:—(*a*) That it be open to registered chemists only; (*b*) The payment of an annual subscription of 2s. 6d.; (*c*) The purchase of, at least, £5 worth of some saleable proprietary article, to be decided upon in full meeting; (*d*) The subscription to the P.A.T.A. to be duly paid.

Another rule is that where prices are complicated with carriage and packages, the invoices, receipts, etc., be placed in the hands of the officers, and prices fixed in full meeting in the first instance.

All transactions between members are to be for prompt cash.

Quotations were submitted to the meeting for little liver pills and Blaud's pills, but the buying was deferred for the present. Quotations for mercurials were submitted, and members filled in their requirements.

The illegal sale of quinine wine by grocers, stores, etc., was also discussed, and it was decided that steps be taken to put a stop to the present unsatisfactory condition of things in this respect.

The following resolution was most heartily and unanimously carried:—"That we offer to Messrs. Owbridge our congratulations on their venture in the protection of price of lung tonic."

The next meeting was fixed for Tuesday, November 3.

In addition to the above business, several private transactions in the disposal of surplus stocks took place between various members.

WESTERN CHEMISTS' ASSOCIATION (OF LONDON).

FIRST MEETING OF THE SESSION.

Wednesday, October 21, 1903, at the Norfolk Hotel, London, W., Mr. J. W. Bowen, President, in the chair.

Balance-sheet.

The Treasurer (Mr. Cracknell) presented the annual balance-sheet, which showed a surplus of £2 13s. 1d. on the general fund, and of £1 19s. 4d. on the entertainment fund. In each case this was a great increase over the balance of the previous year. The accounts were received and adopted.

Election of Committee and Auditors.

The Committee of the Association was re-elected, with the exception that Mr. Edmund White took the place of Mr. W. Warren, who did not seek re-election.

Messrs. Marsh and W. P. Robinson were re-elected auditors, and were thanked for their services.

Valedictory Address.

The President then gave a brief *résumé* of the work of the Association during the past session, and referred to the Pharmacy Bill and the medicine stamp question. With regard to the latter, he did not think that the Board of Inland Revenue was influenced, in deciding upon its course of action, by any other consideration than regard for the revenue. They did not wish chemists either good or harm. He thought thanks were due to the pharmaceutical Press for the energetic way in which the interests of pharmacists had been studied. Referring to a letter from the Secretary of the Pharmaceutical Society suggesting that the Association might recommend members as Divisional Secretaries, it had been considered that, as the members of the Association resided in many different constituencies, the plan was not feasible. The attendance during the past session had not been satisfactory. He hoped that this was due to accident, not to a want of interest, and that in the ensuing session, under a new President, that reproach would not have to be made. Members, he thought, might make notes in the course of their daily toil of matters to bring before the Association for discussion.

Mr. Cracknell moved, and Mr. Taplin seconded, a hearty vote of thanks to Mr. Bowen, both gentlemen expressing the hope that Mr. Bowen would occupy the chair for another year.

Mr. Rogers (Vice-President), in supporting, said that when the mailed fist which had been held over them by Somerset House was examined, it proved to be of less heavy metal than it seemed at first. The Inland Revenue was open to pressure, and the more pressure they used the more would the interests of chemists be studied.

Mr. E. White, referring to the paper read during the last session by Mr. R. H. Jones on "Perfunctory Formalities," allusion to which had been made by the President, said that the subject therein touched on was under serious consideration in official quarters.

Mr. Bowen, having acknowledged the vote, announced that the annual dinner would be held on November 18 at the Café Royal.

NOTTINGHAM AND NOTTS CHEMISTS' ASSOCIATION.

FIRST MEETING OF THE SESSION.

Wednesday, October 21, 1903, at Calvert's Café, Long Row, Mr. Richard Fitzhugh, J.P., in the chair.

Vote of Sympathy.

At the commencement of the meeting the President said they were all much grieved that a very old member of the Society had been very ill. He thought it would be fitting if they passed a vote of sympathy, with the expression of the hope that Mr. Beilby would be very speedily restored to health.

The Vice-President having seconded, the motion was passed, and the Secretary instructed to forward a copy to Mr. Beilby.

New Members.

The following new members were elected:—Mr. William Clay (member); Mr. J. B. Williamson and Mr. W. J. Scattergood (associate members).

Mr. F. R. Sergeant read a paper on

The New Interpretation of the Medicine Stamp Acts.

After dealing with early legislation, Mr. Sergeant proceeded to quote from the later Act, and to point out that it naturally divided itself into two sections—a definition of proprietary medicines, commonly but inaccurately known as patent medicines; and, secondly, the exemptions from the provisions of the Acts. In relation to the paragraph "All drugs contained in the book of rates of King Charles II.," it was sufficient to say that the list contained nothing in use at the present day except crude drugs. Strictly speaking, the exemption which they shared in conjunction with surgeons, apothecaries, etc., referred to crude drugs only. No one could call vaseline, glycerin, or menthol crude drugs. They were all manufactured articles, yet, being pure drugs, they came under this section, and could be recommended for the cure or relief of various diseases. Again, the advancement of what was known as elegant pharmacy had exhibited many simple drugs under a new and more pleasing aspect, and the pharmacist of the present day was able to sell with a printed recommendation. The next exemption was to the duly qualified chemist and druggist more important by far than either of those considered, for it, as it were, lifted him out of the company of quacks and licensed medicine sellers, and placed him in his proper position—the junior member of an important trio, who, then by training and now by qualification, was possessed of a sufficient knowledge to be allowed to vend known and approved remedies for certain definite ailments, without any claim to proprietary rights whatever, but was, as it were, with the surgeon and apothecary the common stewards of the accumulated wealth of the medical knowledge of many generations. As they looked more closely at the old Acts of George III. they were driven to the conclusion that it was not the original intention of the Legislature to tax the duly apprenticed chemist and druggist, but that it was quackery that was designed to "pay the piper," and it seemed strange that this section of the exemptions should have lain in abeyance from 1812 to 1902. There were some few medicines protected by letters patent under the Great Seal, and these were the only true patent medicines, and as such, if they contained a poison, were exempt from the provisions of the Pharmacy Act, 1868, in so far that they could be sold by any licensed person, whether qualified or not. If the three exemptions he had mentioned were all that obtained in the general rule of paying medicine duty, it was quite evident that named remedies were outside their scope. Take cough mixture, for example. Their customers did not take cough mixture for fun, or even to make a cough worse, but to relieve and, if possible, to cure it, and, therefore, to his mind the inference was obvious—by labelling an unknown preparation cough mixture they practically advertised a secret remedy as a cure for a cough. Since the first letter from the Board of Inland Revenue several others to the Editor of the *Pharmaceutical Journal* and to private individuals had been published, each of which had seemed to appreciate more fully the position of the duly qualified chemist and druggist, and now, instead of disclosing the full formula on the label, it was sufficient to state the active medicinal ingredients of the preparation, and, in case of using the other alternative, it was sufficient to state that the recipe was contained in the Formulary of the *Pharmaceutical Journal*, or simply to add the letters P.J.F., without any reference number whatever. Personally, he thought they had come out of this crisis well. They had gained much and lost very little. They had gained the power (or rather had the power confirmed) to recommend and sell remedies which had stood the test of time in the cure and relief of various ailments, and if they were wise and used this advantage to the utmost—carefully re-modelling their labels as they ran out—they should, he thought, gradually—in part, at any rate—stem the tide of advertised remedies, so-called, which, by their very persistency and blatant brag, threatened to sweep things of infinitely more value out of existence. It was useless to cry over spilt milk, but one could not help thinking at this time what a different state of affairs would have obtained if Mr. Glyn-Jones had lived in the eighteenth instead of the nineteenth century. It was one of the greatest mistakes the chemists of this country ever made when they took into their stock-in-trade proprietary and quack medicines. Much had been made of the point that the Revenue officials would not in future give an opinion as to the liability or non-liability of a label, but that was not an accurate statement of the facts. Advice would be given on all labels except those which were supposed to come under the exemption of known remedies. Thus, a label containing the words "Cough Mixture" alone would be stamped liable, but the Board would decline to mark a label on which appeared the words "Cough Mixture," composed of honey, tolu, and squills. Thinking that the sending of the complete formula with the label might remove this loss to the chemist and druggist, he wrote the Secretary of the Board of Inland Revenue, and had received the following reply a day or two ago:—

> "In reply to your letter dated the 16th instant, I am directed by the Board of Inland Revenue to acquaint you that they cannot consent to advise whether or not the terms of a particular label are such as to bring the preparation to which it relates within the scope of the exemption from medicine stamp duty in favour of 'known, admitted, and approved' remedies, even though the formula of the medicine be stated.—I am, Sir, your obedient servant,
>
> "J. E. Chapman."

That was a loss undoubtedly, but he did not think it would cause any one of them many sleepless nights, for he was sure that a few hours' careful study of the subject would enable them to model their labels on safe lines, and they would thus become a court of appeal to themselves.

Mr. **Gill** opened the discussion. He said the more he looked into the Medicine Stamp Acts the more inclined he was to bless than to curse them. He thought those Acts recognised a principle which was dear to the hearts of all of them. If the Pharmacy Acts had been framed in the spirit in which these Acts had been framed it would have been very much better for the public and themselves. With regard to the exemptions, one or two questions had come into his mind. The first was with regard to the sale of entire drugs: Can those drugs be sold under a fancy name, or must the name of the article be given? The burden of proof, he would point out, as to whether the article was exempt was with the seller. Personally he thought it was very desirable that no simple drug should be sold under a fancy name. Another question was: Must the names on the labels be exactly the same as those given in the Formulary?

Mr. **Eberlin** pointed out that the exemptions were so curious. For instance, holders of "patent" medicine licences were to be exempt when selling simple drugs. As to the question of publication, where must an article be published?

Mr. **Bolton** said it had been laid down that publication must be in some book recognised by the Inland Revenue. It was their business as chemists to carry out the new interpretations in the spirit in which the Inland Revenue authorities had treated them.

A hearty vote of thanks was given to Mr. Sergeant for his paper.

LONDON CHEMISTS' ASSOCIATION (NORTH LONDON BRANCH).

GENERAL MEETING.

Thursday, October 22, 1903, at the Hackney Town Hall, Mr. **Burton** in the chair.

Financial Statement and Annual Report.

The **Secretary**, Mr. R. B. Betty, having announced that five new members had been elected, presented the financial statement, showing a balance of £12 2s. 6d.

Messrs. Tallantyre and Jenkin were appointed auditors.

The **Chairman** then read the first annual report, and congratulated the Association on its progress. There were now 140 members.

Election of Committee.

The following were then appointed as a committee:—Messrs. Betty, Edwards, Foot, Hornby, Jenkin, Michie, Page, Tallantyre, and Tyce.

Other Business.

Mr. **Pentney** referred to his previous suggestion that the Council of the Pharmaceutical Society should ask London chemists to help in "lobbying" on behalf of the Pharmacy Bill.

Mr. **Betty** described the Bristol Conference, after which votes of thanks were accorded to the officers of the Association.

LEGAL INTELLIGENCE.

Pharmacy Act, 1868.

Proceedings Under Sections 15 and 17 at Hamilton.

Pharmaceutical Society v. Cassels.

On Saturday, October 17, 1903, at the Sheriff's Court House, Hamilton, Lanarkshire, before Sheriff A. S. D. F. Thomson, proof was led in charges against Samuel Cassels, ironmonger, of Barn Street, Strathaven, at the instance of the Registrar of the Pharmaceutical Society, for (1) keeping open shop for the sale of poisons, respondent not being a person registered under the Act; and (2) selling a packet of Ness's Sheep-Dip, which contained arsenic, in contravention of Section 17 of the Act.

Mr. P. Morison, jun., S.S.C., appeared for the prosecutor, and Mr. T. W. Hay was for the respondent, who pleaded not guilty.

Mr. J. Rutherford Hill, Assistant-Secretary for Scotland to the Pharmaceutical Society, said that he had been instructed by the Registrar to investigate the alleged sale of poisons by defendant, whose name was not on the Register of Chemists and Druggists. On July 24 he visited Strathaven, and saw in the shop packages of Ness and Co.'s Poisonous Powder, and Ness and Co.'s Fluid Dip exposed for sale. There was a registered chemist trading within fifty yards. and sheep-dips were sold there. Witness instructed William Forgie to enter Cassels' shop and purchase a package of the sheep-dip powder. Witness was present when the sale was effected. The word "Poison" was on the package, but otherwise the provisions of Section 17 were neglected. as no entry was made in the poisons-book and no signature taken. Witness, with his assistant, Joseph Tate, had analysed the contents of the package, and found about 25 per cent. of arsenic. Altogether. the powder contained about seven and three-quarter ounces of arsenic. In the event of the powder being used for improper purposes, there was nothing to enable the source of the poison to be traced, because of the provisions of Section 17 having been ignored.

Cross-examined by Mr. Hay: It was part of his official duty to investigate complaints.

Mr. Hay asked who had made a complaint in this case.

Mr. Morison objected to the question, as contrary to public policy and irrelevant. He said it had never yet been sustained in any court that the source of the Registrar's information should be given.

The Sheriff repelled the objection, and asked Mr. Hill who had made this complaint about respondent keeping open shop.

Witness: I am not prepared to answer it.

The Sheriff: Then your evidence cannot be accepted unless you answer the question.

Witness: With the utmost deference to your Lordship, I must decline.

The Sheriff: I am not going to argue with you. You have got to answer the question. Do you decline?

Witness: Yes, my Lord.

Mr. Hay, in the circumstances, asked his Lordship to dismiss the case.

Mr. Morison asked the Sheriff to hear the remainder of the evidence before doing so.

The Sheriff: I won't. How can I when your leading witness refuses to submit to cross-examination?

Mr. Morison: He refuses to answer one question.

The Sheriff: I hold that that is sufficient.

Mr. Morison asked that the question which the witness refused to answer should be noted, and also said that he was prepared to lead the remainder of his proof.

The Sheriff refused to hear other evidence, and assoilzied the respondent—*i.e.*, dismissed the case.

On the application of Mr. Morison, he agreed to state a case for appeal.

Prosecution under Section 15 at Leeds.

Pharmaceutical Society v. Pickup.

On Wednesday, October 21, 1903, at the Leeds County Court, before his Honour Judge Greenhow, an action was heard, in which the Council of the Pharmaceutical Society sought to recover from James Pickup, of 25, York Road, Leeds, the penalty of £5, under Section 15 of the Pharmacy Act, 1868. Mr. Stephen Peckover appeared for the Society, and Mr. Clifford Dunn represented the defendant.

Mr. Peckover, in opening the case, said that the defendant was an unregistered person, and it would be proved that an agent of the Society bought at his shop, from his daughter, on June 8, a quantity of olive oil and of Mrs. Winslow's Soothing Syrup, the latter of which contained morphine in sufficient quantity to take the lives of several children if they took it.

Mr. Harry Moon, clerk to the Registrar of the Pharmaceutical Society, produced the certificate of authority from the Registrar.

Mr. Clifford Dunn took objection to the certificate, and held that for each action brought under this section there must be a separate authority from the Registrar. He pointed out that the certificate gave the names of a number of persons against whom proceedings were to be taken, and said that, in the first place, the authority must be proved, and after that had been done the document should state precisely what James Pickup was to be sued for. There were several kinds of offences under the Pharmacy Act of 1868, and this document made no distinction between these offences.

His Honour said that the section seemed to him to confer the authority upon the Registrar.

Mr. Dunn referred to Section 12 of the Pharmacy Act of 1852, and held that it had to be proved that the authority there referred to had been given in the particular case under consideration. The section said that the Court must have the authority of the Council of the Pharmaceutical Society, and that authority must be given to the Registrar. Mr. Harry Moon was not the Registrar, and there was no evidence that Mr. Richard Bremridge was the Registrar. He was entitled to call for proofs of the appointment of Mr. Bremridge, if he was the Registrar. Apart from the merits of the case, on which he had a perfectly good defence, he was entitled to ask for proof that the Society, in administering an Act which gave them such power, had observed every requirement strictly.

His Honour: What you say is that they must prove that Mr. Bremridge is the Registrar?

Mr. Dunn: Exactly; the only person who can bring the action under this Act is the Registrar. I hold that this Pharmaceutical Society is not doing its honest work in bringing these actions, and therefore there must be some evidence before such actions are tried that Mr. Bremridge is the Registrar appointed under this Act.

Mr. Peckover said the authority showed on the face of it that Mr. Bremridge was the Registrar, and the wording of the Act was that the penalty might be recovered by the Registrar to be appointed under the Act.

His Honour: The point at the moment is as to how it is proved absolutely that Mr. Bremridge is the Registrar. I am inclined to agree with you that if you prove who is the Registrar, he is the person to bring the action; but the controlling point is how it is shown for certain that he is the Registrar.

Mr. Peckover: I suppose Mr. Moon can give that evidence. What further evidence can possibly be given than that?

Mr. Moon, in answer to questions, said that he was present at a meeting of the Council in 1884, when Mr. Richard Bremridge, who was then the Deputy Registrar, was appointed Registrar.

Mr. Dunn: Was the resolution appointing him reduced to writing?

Mr. Moon: Yes, it was.

Mr. Dunn: Then I am entitled to have that resolution. Do you put in extracts from that book here?

Mr. Moon: No.

Mr. Dunn: Then I object that, inasmuch as the appointment is in writing, there is not yet sufficient evidence.

Mr. Peckover: I say the appointment is not in writing. There is a resolution in writing, but the appointment is not in writing. The appointment is conferred by the voting, which was unanimous. So soon as that resolution was passed Mr. Bremridge was in actual fact the Registrar. There is no appointment in writing.

His Honour: Is no document of appointment made out and delivered to Mr. Bremridge?

Mr. Moon: No, sir.

Mr. Peckover: The resolution is merely a record. The appointment itself is not in writing in any way.

Mr. Moon: I was present at the meeting, and the resolution of his appointment was recorded, and I say no document of appointment was delivered to him.

Mr. Dunn: Are you sure there is no paper drawn up or filed in the records of this Society beyond the resolution in the book. Do you mean that there is no paper drawn up and delivered to the Registrar confirming his appointment as Registrar, confirming his title?

Mr. Moon: No.

Mr. Dunn: Then, your Honour, even if he is the Registrar he must have authority from the Council to bring actions.

His Honour: I think the general authority would be sufficient. This is a general authority, dated June 3, 1903; was it for all offences which might be committed?

Mr. Dunn: This unfortunate man has been taken to the Town Hall and prosecuted there by this Society, and I say that that authority was to deal with that offence.

Mr. Peckover: We say is is a general authority to proceed against Pickup for any offence which he has committed or may commit.

His Honour: Either offences which are existent at the time, or offences which may crop up afterwards?

Mr. Peckover: Yes.

His Honour: This can hardly be an authority to prosecute Pickup for offences which have not yet been committed.

Mr. Peckover: The procedure of the Society is that when there is proof of offences against certain men these matters are brought before the Council, and the Registrar gets the authority of the Council to proceed, and after this we make in every case a second journey to the man's premises to see whether the particular case which has been reported is a solitary instance or not, and in the majority of cases we find that there is a second offence committed and proceed against them for both, and we consider this authority a general authority against the man who is named.

His Honour: The question is whether the Registrar gave a general running authority to bring proceedings against this man Pickup whenever he might commit offences.

Mr. Dunn: You surely have no right to assume that the man will offend?

His Honour: I cannot help thinking that a fresh authority is required to prosecute for this offence. Surely in common sense the authority was given by Mr. Bremridge to prosecute Pickup for the past offence, and not for a problematical one. He cannot give authority to prosecute a person until that person has made himself liable to prosecution. I should strongly object to any authority to prosecute me until I had committed an offence. I had better consider this point during the adjournment.

Mr. Peckover: What we say, your Honour, is that the proceedings were authorised to be instituted against Pickup, and that the procedure which he had taken is the ordinary procedure in cases where the offence is recurring, and that is, to proceed against them for both offences.

His Honour: But at the time when this authority was given, Pickup had not committed this offence.

Mr. Peckover: He had not, your Honour.

Mr. Dunn: You see that it was on June 8 that, according to your contention, he was to be liable to a penalty of £5, which penalty might be recovered by the Registrar, in the name and by the authority of the Society, and therefore you have not got any authority to recover that £5. There could not be an authority to prosecute a person until he had committed an offence.

An adjournment was then made for luncheon, and, upon resuming, his Honour asked Mr. Peckover if he had anything else to say.

Mr. Peckover said that he could only repeat that what had now been done was entirely in accordance with the usual practice of the Society, and the authority had invariably been taken on previous occasions in the way in which it was now presented.

His Honour: I should think that the Society would give a general authority to prosecute all offenders; but it seems that this is a particular authority.

Mr. Peckover: It is intended to be a general authority, so far as these particular defendants are concerned.

His Honour: I am inclined to think that the intention of the authority was to cover such penalties as might in future be incurred; but you make it impossible to interpret it in that way by applying it to particular people.

Mr. Peckover: But that does not make it any less general in regard to these particular people.

His Honour: I think the limitation of the people to be prosecuted carries with it also the limitation that the authority is for the particular offences.

Mr. Peckover: What I suggest is, that if it is competent for the Society to give a general authority to take proceedings against all persons who render themselves liable to penalties under this Act, there is no reason why they should not so take proceedings against particular persons, if they render themselves liable.

His Honour: This is quite likely, but I do not think it is expressed or implied in this document. What is implied in this document seems to me to be that certain persons who are named are to be prosecuted for past offences.

Mr. Peckover: I do not want to take up your Honour's time unduly.

His Honour: This is a non-suit, with costs.

Sale of Food and Drugs Acts.

Cream of Tartar.

On Tuesday, October 13, 1903, at Bournemouth, Alfred Thrift, grocer, St. Swithin's Road, Bournemouth, and William Bolton, grocer, Cromwell Road, Pokesdown, were summoned for selling cream of tartar not of the nature, substance, and quality demanded. Mr. H. Trevanion defended Mr. Thrift, and Mr. A. E. Francis Francis appeared for Mr. Bolton.

In the case of Mr. Thrift the analysis showed that the cream of tartar contained 8¼ per cent. of calcium sulphate, and 4½ per cent. of calcium acid phosphate.—Mr. Rogers, for the prosecution, said that the defendant relied on a warranty which the prosecution would accept, but in order to get at the wholesale dealers it was necessary to prove the case. It was also stated that the defendant had purchased a keg of the article from the Liverpool Chemical Company, the lid of the keg bearing the words "Pure cream of tartar," and the invoice for it stating it to be 98 per cent. standard.—Defendant also proved that the article had not been changed in any way since he had received it, but was sold in the same condition. This case was dismissed.

In Mr. Bolton's case Mr. Rogers pressed for a nominal fine. In this case the amount of calcium sulphate was 10 per cent.

Mr. Francis pointed out that "commercial" cream of tartar, which was allowed to be of a lower strength, was that usually sold, and that the British Pharmacopœia article at 98 per cent. of purity was a chemist's drug principally.

The Bench said that Mr. Bolton had been selling goods that he did not know the quality of, and had not protected himself in the way the previous defendant had done, so that while there would be no fine, they must convict and impose the costs (20s. 6d.).

Camphorated Oil.

On Friday, October 16, 1903, at Wellingborough Police Court, the Ecton Industrial Co-operative Society, Limited, was summoned by Thos. Mattinson, Kettering, inspector under the County Council, for selling, on September 14, camphorated oil deficient in camphor.

Mr. Stops (of Becke, Green, and Stops, Nottingham) appeared for the defendants, and said that there were no real neglect on the part of defendant because the charge was only for the defect of camphor in the oil sold, which had not been made by defendants. He therefore asked that only a nominal fine should be imposed. He had received a letter from the manufacturer explaining how the mistake arose.

Mr. Mattinson said he purchased the camphorated oil, which was now admitted to be defective. He produced the analyst's report. A fine of £5 and 6s. costs was imposed.

Merchandise Marks Act.

Fels-Naptha Soap.

On Monday, October 19, 1903, at St. Helens Police Court, eight charges of falsely applying the trade description of Fels-Naptha soap were down for hearing against the St. Helens Co-operative Society and its officials—two cases against the officials and six against the Society.

Mr. Riley, who appeared for the defence, pleaded not guilty in one case against the manager, and for the Society he also pleaded not guilty, with the reservation that he would be entitled to contend that a corporation could not be sued.

The Clerk said he should advise the magistrates that a corporation could be sued.

After hearing the evidence the manager was fined £5 and costs, but the case heard against the Society was dismissed.

Mr. Paxton, for the prosecution, asked for a case to be stated for appeal in repect to the Society, but on being told by the Clerk that the case against the Society had been decided on facts, not on law, he stated that he would not go on under those circumstances.

Mr. Riley then said if the remaining cases against the Society were withdrawn, he would advise the other official summoned to plead guilty.

This was agreed to, and the second official was fined £5 and costs.

"Pure Magnesia."

On Friday, October 16, 1903, at Wolverhampton Police Court, before Mr. N. C. A. Neville, Charles Lumley, of 134, Coleman Street, Whitmore Reans, was charged, under the Merchandise Marks Act, with selling carbonate of magnesia to which a false trade description, viz., "Pure Magnesia," was applied.

Mr. G. F. Allwood, inspector under the Food and Drugs Acts for the borough, said that the defendant styled himself a wholesale druggist and confectionery agent, of 134, Coleman Street. Defendant was not a qualified chemist, but was accustomed to deal in drugs, and supplied small shops. One of the shops he had supplied was that of Mrs. Bevan. On August 28 he (Mr. Allwood) called at the shop of Mrs. Bevan, and saw several packets for sale labelled "Pure Magnesia." He bought some, and submitted a sample to Mr. E. W. T. Jones, the borough analyst, who gave a certificate that it was magnesium carbonate, and contained only 39·2 per cent. of pure magnesia. Mr. Allwood added that when he spoke to the defendant about labelling the packets "Pure Magnesia," defendant said that that was "simply a trade dodge," and that they all did such things in trade. He had been advised to label the packets "Carbonate of magnesia," and had done so. Defendant also told him that he did not manufacture the magnesia, but bought it and packed it.

Mr. T. P. Haslam, who defended, called the defendant, who said that he had had no intention to deceive. He was advised a year ago by a chemist that the article could not be labelled "Pure Magnesia," and he started labelling it "Carbonate of Magnesia." If his employé, who had now left him, had carried out his instructions, the packets supplied to Mrs. Bevan would have been labelled "Carbonate of Magnesia."

Mr. Neville said that this was a case, to use the mildest term, of gross neglect. Here was a man who, apparently, knew nothing about chemistry, selling what was labelled "Magnesia. Warranted Pure. Manufactured by C. Lumley." It was thus stated to be magnesia, when it was not magnesia, to be pure when it was not pure, and it was also not manufactured by C. Lumley. If a man conducted business in that style, got labels printed that were absolutely untrue, and broke an Act of Parliament, he must expect to be heavily fined. It was absolutely absurd that men who knew nothing about the important business of chemistry should go and tell a tissue of untruths by these advertisement cards. He fined Lumley £5 and costs—total, £6 7s. 6d.

LONDON GAZETTE NOTICES.

PARTNERSHIPS DISSOLVED.

Henry Thomas Hamilton and James Cecil Burton, general medical practitioners, Chilham and Chartham. Debts will be received and paid by J. C. Burton.

William Francis Grant and Albert Henry Lowman Newstead medical practitioners, 38, Green Street, Bethnal Green. Debts will be received and paid by A. H. L. Newstead.

POISONING CASES AND INQUESTS.

The deaths by poisoning reported during the seven days ended Wednesday, October 21, 1903, were twenty-three in number :—

Poison.	Accident.	Suicide.	Uncertain.
Alcohol	1	—	—
Belladonna and Turpentine Liniment	—	—	1
Carbolic Acid	—	2	1
Chloroform	3	—	—
Fumes	1	—	—
Laudanum	—	2	—
Liniment	—	—	1
Mercury	—	1	—
Oxalic Acid	—	1	—
Potassium Bichromate	—	1	—
Potassium Cyanide	—	1	—
Ptomaine	4	—	—
Salt of Lemon	—	1	—
Other Drugs	1	1	—
Total	10	10	3

Alcohol.—A woman at Lambeth died from acute alcoholic poisoning.

Belladonna and Turpentine Liniment.—An open verdict was returned at the inquest on the body of a woman who died in St. Thomas's Hospital, London, after drinking a quantity of belladonna and turpentine liniment.

Carbolic Acid.—A woman at Spennymoor and a man at Tonyrefail committed suicide with carbolic acid. A woman at Louth died from carbolic acid poisoning.

Chloroform.—Three deaths occurred during operations, chloroform in each case being the fatal anæsthetic. A woman at Stafford, a boy at Bootle, and a man at Keswick were the persons who died.

Fumes.—A worker in the employment of a firm of chemical manufacturers at Manchester was asphyxiated by noxious vapours.

Laudanum.—A labourer at Lambeth, and a printer's reader at Sneinton, committed suicide by taking laudanum.

Liniment. — A woman at Ashton-in-Makerfield died after drinking a poisonous liniment.

Mercury.—Mercurial poisoning caused the death of a man at Battersea.

Oxalic Acid.—An ex-sergeant in the Army committed suicide by taking oxalic acid.

Potassium Bichromate.—A Hexham tradesman died from a dose of potassium bichromate, self-administered.

Potassium Cyanide.—A worker at a silversmith's in Clerkenwell took a large dose of potassium cyanide with fatal effect.

Ptomaine.—Mr. Charles Thompson, a Manchester chemist's apprentice in his twentieth year, died from ptomaine poisoning. An electrical engineer at Hornsey, a youth at Shoreditch, and a child at Thornton, died also from the effects of unwholesome food.

Salt of Lemon.—A tailoress, at Leeds, committed suicide by taking salt of lemon.

Other Cases.—A woman at Lincoln died from the effects of taking an abortefacient drug. A Leeds miner poisoned himself with a drug, the nature of which was not stated. A woman died in a chemist's shop at Keady, Ireland, in circumstances which pointed to poisoning.

Attempts at Suicide.—Carbolic acid, chloride of lime, furniture polish, hydrochloric acid, laudanum, and rat-poison were used in unsuccessful attempts at suicide.

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

Workhouse Dispensing.—The medical officer at Hunslet Union Workhouse has been granted a gratuity of £50 for dispensing medicines. He objected to do the work unless paid extra for it.

Non-Poisonous Phosphorus.—Makers of phosphorus matches have been able to prepare phosphorus in a form which is stated to be entirely non-poisonous, and can, at the same time, be used for "non-safety" matches, to strike on any surface.

Fire at a Chemist's.—Considerable damage was done last week by fire at the premises of Mr. D. Jones, chemist and druggist, of College Green, Towyn. The conflagration originated in the drug warehouse, and the damage is covered by insurance.

Medical Service at St. Paul's.—On Wednesday, October 21, 1903, the annual medical service, organised by the Guild of St. Luke, was held in St. Paul's Cathedral. The congregation included many of the more prominent members of the medical profession, while pharmacy was also represented.

Cattle Poisoned.—On a farm at Littleworth, near Spalding, out of a herd of twenty-two valuable pedigree shorthorn cattle, five have died in circumstances which point to poisoning. A veterinary examination has confirmed this opinion, and an investigation of the field shows the presence of a large quantity of wart wort.

Analyst's Report.—The West Riding County Analyst (Mr. A. H. Allen), in his report for the last quarter, states that in 614 samples of food and drugs which were examined, the only cases of adulteration of drugs were three samples of sweet spirit of nitre, which contained less than the minimum proportion of ethyl nitrite.

A Pharmaceutical Failure.—Someone in Scandinavia, says the *Westminster Gazette*, has unearthed the report of the examiners on Dr. Ibsen's papers at his examination for the degree of bachelor. Ibsen was ploughed, owing to his deficiencies in Greek and arithmetic. He aspired in those days to be a pharmaceutical chemist, and, failing to satisfy the examiners, had to seek some other opening in life.

Type-Written Labels.—The Remington Typewriter Co. has placed on the market a typewriter, writing block type, especially designed for such purposes as label-writing, the preparation of display placards, notices, etc. It will readily be grasped how useful such a machine as this might be for labelling purposes in pharmacy. A great feature of the machine is that its work is absolutely indelible and indestructible.

Boric Acid in Milk.—Two prosecutions were heard at Brighton, last week, against dairymen, for selling milk containing 8·4 grains of boric acid per pint. Dr. A. Newsholme, medical officer of health, considered that quantity very harmful, and, in spite of the evidence of Dr. Samuel Rideal, who was of a contrary opinion, the Bench convicted, holding that the presence of the acid was to the prejudice of the purchaser. Fines of 20s. and costs were imposed.

Thefts of Perfumery.—On Wednesday, October 14, 1903, at the North London Police Court, a charge was heard against a clerk named Dibb, who had been in the employ of the Crown Perfumery Company, for stealing soaps and perfumery to the value of £25 from that company. The defence was that the goods had been purchased by the prisoner at "staff prices," as was allowed by the firm, and resold by him as "job lines." The case was adjourned, prisoner being admitted to bail.

A Drug Committee in Default.—At a meeting of the Committee of Management of the Portsmouth Hospital on Friday afternoon, Mr. E. H. Cooper asked were the Drug Committee disposed to report; they had not heard from them for several months.—Dr. Emmett agreed that they ought to have a report from this committee, as it dealt with an important matter. It was pointed out that Alderman T. Scott Foster had expressed his determination not to attend any further meetings of that committee.—It was decided to appoint two additional members.

A New Weight.—In the *London Gazette* has been published an Order in Council approving of a new standard weight of fifty pounds, or "half-cental," which has been proved to the satisfaction of the Board of Trade to be required, and has consequently been made and duly verified, and deposited at the Standards Department. The weight is octagonal in form, and two illustrations of it are published in the *Gazette* as a schedule to the Order. The new weight does not, in spite of remarks of the lay Press, make the prospect of the adoption of the metric system much brighter or nearer.

Medicine Stamp Duty.—A correspondent states that the Inland Revenue authorities are particularly active in Glasgow at present, very few chemists having managed to escape their attentions. The aggregate of penalties demanded must amount to some hundreds of pounds. It is reported that, in most cases, the plea of inadvertency has been urged, but whether it is being accepted in every case is not known. Local feeling is exceedingly bitter, as many pharmacists were of opinion that they were safe from all proceedings under the Medicine Stamp Duty Act till the end of the year, and it is anticipated that there will be a record attendance at the local association's first meeting next week.

A Sponge Combine.—Fuller particulars of the sponge combine briefly mentioned last week are to hand. A company has just been registered, under the name of International Sponge Importers, Limited, being amalgamation of the businesses of Messrs. Cresswell Bros. and Schmitz, Henry Marks and Sons, Limited, and I. and M. Cohen, of London. These firms have been established for over half a century, and hold a leading position in the trade. A public issue of the company's prospectus is expected at an early date, offering £125,000 in six per cent. cumulative preference shares for subscription. The present partners, eight in number, become the directors, and will hold all the ordinary shares between them.

A Hospital Drug Supply.—At the meeting of the Hertford and Ware Joint Hospital Board on Saturday, Mr. Horsey inquired if the Board could not be put on a different footing with regard to the purchase of drugs. London hospitals, he said, obtained special rates, whereas they paid the same as the ordinary retail purchaser, who only bought a hundredth part of what the Board purchased. Surely, he thought that better arrangements might be made. Some time ago he called attention to the cost of eucalyptus oil, for which they were paying 30s., whereas the best oil could be obtained from London at 18s., and a second quality at 15s. The result was that they were now paying less for the oil. It was understood that the drug question would be gone into at the next meeting of the Board.

An Old-Time Toilet Recipe.—A correspondent of the *Daily Mail* has sent to that paper a recipe found originally in an old folio manuscript book. The preparation is described as a wash to beautify the face, and is made as follows:—Take three quarts of Sack, and a very young sucking Pig, stick it, and let the blood run into the Sack, Scald and clean it, as soon as possible, that it may be put into the Still warm; then slice in eight lemons peel and all, a quart of garden snails bruised, one quart of worms cleaned, three good handfuls of beans and flowers. Mix altogether, put into a cold still and lay your pig into the middle of these ingredients, with the skin side downwards; then fill your Still with the rest, and draw off of this quantity five pints of water: add to these ingredients 1 lb. of white lily roots sliced.

An Inland Revenue Prosecution Withdrawn.—In the Leeds Police Court, last March, Mr. George Crawshaw, pharmaceutical chemist, of Hyde Park, Leeds, was summoned at the instance of the Inland Revenue authorities on a charge of having exposed for sale medicine liable to stamp duty. For the defence it was contended that Mr. Crawshaw's "price list and family guide," by the issue of which the Inland Revenue authorities claimed that the defendant was liable to stamp duty on the medicines enumerated therein, was not intended to be a public advertisement. The Stipendiary Magistrate reserved his judgment. Since that date the matter has been pending, but a communication has now been received from Somerset House announcing that the Inland Revenue authorities have decided to withdraw the informations.

Don Memorial Fund.—A joint meeting of the members of the Forfar Field Club and subscribers to the Don Memorial was held in the Town Hall, Forfar, last week, to consider and resolve as to the form and site of the proposed memorial to George Don, Forfar's self-taught botanist. Recently two gentlemen from Dundee—Mr. Charles Kerr and Mr. Cumming—had stated that the Committee of the Dundee Conference had a surplus of £5, which they had to devote to some object, and they proposed to allocate it to the Don Memorial. A total of £105 had now been subscribed. The unanimous recommendation of the Field Club was that the memorial should be erected on the Reid Park, Forfar, and a committee was appointed to wait on the Town Council, in order to ascertain if they approved of the action to erect a monument in the Reid Park.

Tariffs and Education.—The Board of Trade has received, through the Foreign Office, a despatch from His Majesty's Consul-General at Hamburg transmitting a memorandum on the condition of chemical industries in Germany, in which, speaking of the remarkable development of these industries during the latter part of the last century, he writes:—"There can be no doubt that, to a certain degree, this result has been due to the economic policy followed in Germany during the last decade; and that a judiciously arranged Customs tariff—which, whilst admitting most chemical primary materials duty free, has protected the weaker branches of industry by more or less high import duties on competing foreign chemical products—has contributed towards the development of German chemical industries. At the same time, however, it must be borne in mind that there are other causes to which the same should likewise be ascribed. Efficiency in the knowledge of chemistry, attained after a long and thorough training in one of the many excellent state-aided educational establishments of this country, unabated study and research after entering practical life, with constant attention to the progress of chemical and physical science all over the world on the part of the technical staff of German chemical factories, combined with a thorough business knowledge on the part of the commercial managers—these certainly have had an important share in placing German chemical industry in its present predominant position."

London Wild Flowers.—In a letter to the *Times*, Mr. C. J. Cornish remarks on the number of wild flowers still found in the London area. He proceeds to refer to a remarkable collection of the wild flowers remaining in Fulham, made by Mr. W. Clarkson Birch, and presented by him to the Field Club of St. Paul's School. The collection, which is only of leaves and flowers, not of the roots of the plants, was made in a twelvemonth, and contains no less than 130 varieties of flowering plants, though the market gardens for which Fulham was famous have almost disappeared, and bricks and mortar are rapidly taking their place. It would puzzle most people to guess where these flowers could have found room to grow. But on the banks of the London river many of the water plants still survive, and the bank flowers are recruited by seeds washed down from the upper Thames. From the river bank came hemlock, dropwort, two kinds of pepperwort, several kinds of cresses, and gipsywort with nettle-shaped leaves and white flowers. On a reservoir embankment lately made were quantities of greater skull-cap, with blue tubular flowers, and a specimen of the great willow herb and purple loosestrife. The wanderings of plants are illustrated in a remarkable fashion by two species in this collection—*Galinisoga parviflora* and *Tetragonia crystallina*, a native of Chile. Its leaves are coated with what look like spangles of ice crystal, from which its name is derived. Both plants were found by Mr. Birch growing on a rubbish heap. A specimen of the *Aster trifolium*, or sea starwort, was found growing by the river, a plant usually found on salt marshes, and plentiful at Canvey Island, at the river's mouth. The purple-flowered lucerne grows on the reservoir banks in abundance. Even the harebell was found, and cuckoo flower, bristly ox-tongue, selfheal, scarlet pimpernel, crane's-bill, mallow, and the London rocket are among other flowers in the list.

A Decline of National Intelligence.—The fourth annual Huxley Memorial Lecture in connection with the Anthropological Institute was given on Friday, the 16th inst., by Professor Karl Pearson, who took for his subject "The inheritance in man of mental and moral characters, and its comparison with the inheritance of physical characters." Traders declared, he said, that Britons were no match for Germans and Americans; men of science proclaimed the glory of foreign universities and the crying need for technical instruction; politicians caught the general apprehension and rushed to heroic remedies. Looking round dispassionately from the calm atmosphere of anthropology, he feared there really was a lack of leaders of the highest intelligence in science, in the arts, in trade, even in politics. He believed we had a paucity of the better intelligence to guide, and of the moderate intelligences to be successfully guided. The mentally better stock in the nation was not reproducing itself at the same rate as it did of old; the less able, and the less energetic, were more fertile than the better stocks. We were standing, he thought, at the commencement of an epoch, which would be marked by a great dearth of ability, and the remedy lay beyond the reach of revised educational systems; we had failed to realise that the psychical characters, which were, in the modern struggle of nations, the backbone of a State, were not manufactured by home and school and college; they were bred in the bone; and for the last forty years the intellectual classes of the nation, enervated by wealth or by love of pleasure, or following an erroneous standard of life, had ceased to give us in due proportion the men we wanted to carry on the ever-growing work of our Empire, to battle in the fore-rank of the ever-intensified struggle of nations. The remedy lay first in getting the intellectual section of our nation to realise that intelligence could be aided and be trained, but no training or education could create it. They must breed it, that was the broad result for statecraft which flowed from the equality in inheritance of the psychical and the physical characters in man.

PERSONALITIES, BUSINESS CHANGES, ETC.

Lieutenant-Colonel Clifford Probyn, J.P., L.C.C., has resigned his seat on the Metropolitan Water Board.

Mr. W. Thompson, of Manchester, has been re-appointed public analyst for the Borough of Stockport.

Mr. J. Preston, chemist and druggist, Sheffield, has removed his business from 56, Fargate, to 105, Barker's Pool.

Mr. John Stevens, J.P., Mayor of Queenborough, Sheppey, of the firm of Stevens and Son, chemical manufacturers, has been elected an Alderman of the Corporation.

Mr. Alexander Bottle, J.P., and **Mr. Wm. James Barnes,** chemist and druggist, of Dover, have been appointed Justices to exercise the powers conferred by the Lunacy Act, 1890.

Professor Smithells, of the Yorkshire College, a member of the Board of Examiners of the Pharmaceutical Society, lectured on Tuesday, October 20, on "Radium and its Problems," before the Leeds Philosophical Society.

Mr. S. R. Atkins, J.P., President of the Pharmaceutical Society, will be the guest of the Sheffield Pharmaceutical and Chemical Society at the annual dinner to be held on Thursday next, October 29, at the Royal Victoria Hotel.

Mr. T. H. W. Idris, L.C.C., President of the British Pharmaceutical Conference, will be the guest of the Bournemouth Pharmaceutical Association at the annual supper on Friday, October 30, to be held at the Hôtel Métropole, Bournemouth.

Mr. T. C. Lamb, chemist and druggist, of Chatham, has been invited to retain the Mayoralty of the Borough for another year. Alderman E. T. Wootton, J.P., chemist and druggist, of High Street, Margate, has been selected to carry out the duties of the Mayor at the Municipal Election on November 2.

Mr. T. H. Vincent has commenced business on his own account as a sundriesman to the trade at 6, Mitre Street, London, E.C. He holds a number of agencies, and the experience gained by him while with the Volcanic Aëration Co. will doubtless enable him to give advice on questions of detail and requirements of customers.

TRADE NOTE.

Addition to the P.A.T.A. List.—One of the latest additions to the P.A.T.A. list is Dr. Mackenzie's Catarrh Cure Smelling Bottle, the minimum retail price being fixed at 11d. per bottle, and the minimum price from wholesale houses to retailers 9s. per dozen, or in one-gross lots and upwards at 8s. 6d. per dozen net, carriage paid. A new and more convenient pocket size, concave on one side, suitable for carrying in the waistcoat pocket, is shortly to be introduced.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

General Markets.

London, Thursday, October 22, 1903.

Like the weather, the trade in Drugs and Chemicals has been wretchedly bad during the past week; indeed, for some time back business has been anything but encouraging. The strained relations between Russia and Japan, the financial outlook in America, and the general state of the money market at home, have all contributed to the general depression. Ipecacuanha is dearer, and the statistical position of this drug is such that a further advance is not altogether unlikely. Podophyllin root is also higher owing to the scarcity of labour, and for the same reason Senega is in a similar position; in fact, American Botanicals are, with few exceptions, dearer all round. Cascara is, however, for the time being, slightly easier in the New York market. Strychnine and its salts have advanced one penny per ounce. The Opium market is quiet and unchanged. As regards Quinine, there is very little doing, whilst Menthol shows an upward tendency.

ACID CITRIC.—1s. 0½d. per lb.

ACID TARTARIC.—English on the spot, 1s. 1d.; foreign, 1s. 0¼d. to 1s. 0½d.

ALUM.—Lump, £5 12s. 6d.; powder, £6 2s. 6d.

ARROWROOT.—At Wednesday's sales this article was in slow demand, and the whole of the offerings of St. Vincent were held at 2d. to 3½d.

BISMUTH CARBONATE.—8s. 1d. per lb.; subnitrate, 7s. 4d.

BLEACHING POWDER.—English, £5 2s. 6d.

BORACIC ACID.—Crystals, 22s. 6d.; Powder, 24s. 6d.

BORAX.—Crystals, 13s. 6d. to 14s. 6d. per cwt., according to quantity; powder, 15s. 6d. to 16s. 6d.

BROMIDES.—Potassium Bromide is quoted at 1s. 11½d. per lb.

CARBOLIC ACID.—Steady. Crystal 34° to 35° C., 5¼d.; detached crystals 39° to 40° C., 7d. per lb. Crude 60° F., 1s. 6½d. per gallon. Liquid (95 to 98 per cent.), of pale straw colour, 1s. 2d. per gallon.

CAMPHOR—No alteration in any of the varieties.

CASCARA SAGRADA—Is temporarily lower in New York, owing to "bear" influences. 87s. 6d. to 90s. is quoted here for new to old bark.

CASSIA OIL.—3s. 2d. per lb. (80 to 85 per cent. cinnamic aldehyde).

CINNAMON.—None of the offerings found buyers at the spice sales.

COCAINE.—15s. 6d. to 16s. per oz. for the hydrochloride, and 18s. to 18s. 6d. for the pure alkaloid.

COCOANUT OIL.—Ceylon spot, £25 10s.; Cochin spot, £31.

CODEINE.—No alteration. 9s. 5d. per oz. for the pure alkaloid.

COD-LIVER OIL—Is still very firm at fancy prices. Norwegian, 520s. to 530s. per barrel. Newfoundland non-freezing, 475s.

CINCHONA.—The London auctions were held on Tuesday. The total number of packages catalogued was 1,780, and the greater part found buyers. The average unit was 1⅜d. to 1½d.

CLOVE OIL.—No alteration since last week—4s. to 4s. 3d.

COCHINEAL—Is strong, at 1s. 6d. for black.

CREAM OF TARTAR.—86s. for 98 per cent.

ERGOT.—Sales have been made at 1s. 10d. It is reported that a higher figure has been paid in Spain.

GINGER.—Nearly 400 bags washed rough Cochin were disposed of at the spice auctions on Wednesday, good bright at 32s.

GLYCERIN.—68s. per cwt. for ½-ton lots.

IODIDE OF POTASSIUM.—Unchanged at 8s. 9d. per lb.

IODINE.—9s. 9d. to 10s. per lb. for the resublimed, according to quantity.

IODOFORM.—11s. 8d. per lb. for the pure crystals or powder.

IPECACUANHA.—There has been a very decided rise and very good business has been doing. The prices are 6s. 3d. for Rio, 6s. for Minas, 5s. for Cartagena. Sales have been made at these prices, and stocks are small.

ISINGLASS.—At Tuesday's sales there was a fair supply. The total amounted to 746 packages. There was a fair demand, and about one-half sold at full to dearer rates. Brazil imports were 1d. to 2d. dearer for Para lump. West Indian sold at steady rates. Maracaibo sold at better prices. Bombay imports met a better demand, Kurachee leaf selling at full prices. The supply of Penang went off slowly. Russian: Samovy book found buyers at steady rates. The next auctions will be held on November 24.

LINSEED OIL.—Easier. London spot pipes £18; barrels £18 7s. 6d.

MACE.—Fair to good pale Java sold at 2s. 6d.

MENTHOL.—Firm at 22s. 6d. to 23s. for best brands on the spot; to come forward (December shipment), 20s. is quoted, which shows an advance for the latter position.

MERCURIALS.—Calomel, 2s. 8d.; corrosive sublimate, 2s. 4d.; red precipitate, 2s. 11d.; white precipitate, 2s. 11½d.; mercuric sulphate, 2s. 4d. per lb.

MORPHINE.—4s. 6d. to 4s. 8d. for the hydrochloride.

NUTMEGS—Sold at fair prices at Wednesday's sale. West Indian 60's at 3s., 61's 2s. 11d., 68's to 72's at 2s. 2d.

OLIVE OIL.—Mogador, £33.

OPIUM.—Quiet and unaltered.

OXALIC ACID.—2⅝d. to 2⅞d., delivered free London.

PALM OIL.—Lagos on the spot £28 5s.

PEPPER.—At the spice sales good prices were obtained for white Singapore.

PEPPERMINT OIL—Generally has been quiet. H.G.H. is 15s. 6d. on the spot. Stilwell's, in tins, 12s. 4½d. Japan is a little dearer—7s. 3d. on the spot.

PIMENTO—Was dearer at the spice sales. 70 bags sold at 4⅛d. to 4¼d.

PODOPHYLLIN ROOT—Is exceedingly scarce, and the price quoted is 28s. per cwt. landed.

QUICKSILVER—£8 7s. 6d.

QUININE.—There is little doing. 1s. 0½d. per oz. is the price in the second-hand market.

SENEGA—Is very firm, and owing to the weather and shortage of labour, no more will be collected until the ice breaks next spring. An advance appears likely. The price is now 3s. 4d. landed here, and offers for America come at 3s. 2½d. c.i.f.

SHELLAC—Is again higher; the spot price quoted for fair free TN is 210s., and for AC garnet 180s.

STRYCHNINE.—Presumably in consequence of scarcity of suitable raw material, English and German makers have advanced the price of Strychnine and Salts 1d. per oz. The price of the pure Crystal is now 1s. 9d. per oz.

TURPENTINE—Quiet. American spot, £2 5s.

PATENTS AND TRADE MARKS.*

New Patent Applications.

HYPODERMIC SYRINGE (No. 25,678, of 1902).—J. R. Ratcliffe, Elmdon, Wake Green, Moseley, Worcestershire. The glass barrel has a clear, or unrestricted, aperture, or bore throughout its entire length, and is fitted with a glass or other plunger. The needle has secured to it a socket-like headpiece, or cap, which fits directly over the discharge end of the barrel. The exterior surface of the said discharge end of the barrel is preferably made to a slightly tapering, or conical, form, whilst the cap is also internally tapered to correspond therewith. On the withdrawal of the cap a whole hypodermic tablet can be readily inserted in the barrel at its discharge end.

MANUFACTURE OF COMPOUNDS OF ALUMINIUM (No. 25,683, of 1902).—H. Spence and P. Spence and Sons, Limited, both of the Manchester Alum Works, Manchester. Relates to a process for the production, or manufacture, of ammonium alum and basic aluminium sulphate from normal aluminium sulphate, which consists in acting upon a solution of said normal sulphate with ammonia until the desired proportion of the sulphuric acid present has combined with the ammonia, and thereafter separating the ammonium alum and the basic aluminium sulphate. The highly basic sulphate produced by these means in the form of a definite crystallised compound, in which one molecule of Al_2O_3 is combined with only two molecules of SO_3, is readily soluble in hot or cold water, and may be produced in comparative purity from impure solutions.

HANDLES FOR SURGICAL AND SIMILAR INSTRUMENTS (No. 28,711, of 1902).—Dr. M. Liese, Assistant Physician in the Royal Frauenklinik, Munich, Germany. The two handles, or halves, of the instrument are so constructed as to avoid all angles on the external edges, the shanks gradually curving to the upper and outer parts of the respective finger rings or loops, thus forming the outer portion of the grip. The two portions of the clasp or fastening for the handles run away from the outer and lower parts of the rings or loops horizontally towards one another, and in the plane of the blades. The teeth of each portion of the clamp are perpendicular to the plane of the blades, and are so cut as to fit into the grooves or teeth of the other, the number of teeth being immaterial; thus, when closed, a perfectly smooth surface is obtained, completely closing the space between the shanks. Even when only partially closed, the clasp, or connection, is of such perfect and firm construction that silk, thread, or catgut cannot possibly pass between or beneath the teeth and enter the space between the handles.

Note.—Opposition to the grant of any of the above-mentioned patents must be filed at the Patent Office, on or before November 30, 1903.

New Trade Mark Applications.

"**HYRALDITE,**" for chemical substances of all kinds for use in dyeing and printing, by the Manufacture Lyonnaise de Matières Colorantes, 44, Chemin de la Vitriolerie, Lyons. 257,091.

"**ODOL,**" for (1) chemical substances used for agricultural, horticultural, veterinary, and sanitary purposes; and (2) chemical substances prepared for use in medicine and pharmacy, by K. A. Lingner, 26, Southwark Bridge Road, Surrey. 255,112-3.

"**BENZ-CLENZ,**" for chemical substances used for agricultural, horticultural, veterinary, or sanitary purposes, by Cuxson Gerrard and Co., Crown Buildings, Corporation Street, Birmingham. 256,578.

"**CUTA-MEDA,**" for (1) liquid medicine and ointment and medicated soap, and (2) perfumed soap, by Taylor's Drug Co., Limited, of 3, 5, and 7, Guildford Street, Leeds. 256,933-4.

"**ENGELIN,**" for chemical substances prepared for use in medicine and pharmacy, by D. H. von Engel, 22, An der Weide, Bremen, Germany. 257,259.

"**SEAPONGS,** for instruments, apparatus, and contrivances, not medicated, for surgical or curative purposes, or in relation to the health of men or animals, by G. Pearson, 17, Angel Row, Nottingham. 256,842.

Note.—Opposition to the registration of any of the above-mentioned trade marks must be filed at the Patent Office, on or before November 21 1903.

SCHOOL OF PHARMACY NOTES.

The New Session.

The Session, 1903, is now in full swing, and 17, Bloomsbury Square has regained its usual impression of busy student life. The few remaining from last session's company look once more with joy upon the well-known "lab.," the scene of their struggles with Minor chemistry. From a student's point of view the opening day was very successful, and the smoking concert at night was worthy of the best traditions of the Square. The sounds of revelry which rose high in the air testified to the soundness of the lungs of the young pharmacists of the future. The number of "Minors" is considerably in excess of those of last year, and the number of lady students in the School constitutes a record. Their own particular laboratory is full, and they have overflowed into the Major laboratory, erstwhile sacred to the sterner sex.

The Football Season.

The Square football season opened with a practice match, at which some score of members were present, and under the eyes of the newly-elected captain, V. C. Hewlett, showed their "socker" accomplishments on a wet and sloppy field. The season commenced in earnest on Saturday, the 17th, with a match against Beckenham Reserves. The result was, however, not altogether encouraging, as the "Square" team lost, the score being fourteen to one in favour of their opponents. There is a proposal to change the name of the club from "The Pharmaceutical Football Club" to "The Pharmaceutical Football and Athletic Club." Seeing that the outdoor athletic operations of the School are usually confined to football, there does not seem to be any very pressing reason for the change.

PUBLICATION RECEIVED.

Practical Orthochromatic Photography. By Arthur Payne, F.C.S. Pp. 178. Price 1s. net. London: Iliffe and Sons, Limited, 3, St. Bride Street, E.C. 1903. From the Publishers.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and 'Patent Notes for Inventors' free on application.

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

Liability to Stamp Duty.

I congratulate you on the latest concession obtained from Somerset House. It is now as it ought to be. I objected to numbers on labels from the beginning. There is one point I want to draw your attention to, and is one I am afraid many chemists will cross the mark. I have spoken to many. Some are sure of their ground and others not so sure. It is this —I prepare a "cough mixture," and print on the label, "Prepared According to the P. J. Form." If necessary, I can show an officer from Somerset House the exact formula. Can I do more than calling it the "cough mixture," and say how it should be taken? So far it will leave me exactly where I was before the Sanguinetti case. Some of my friends hold that I can print in the label that it is a "Cure for coughs, colds, bronchitis, influenza, etc." I am not sure, I only hope I can, but I have my doubts, as I am afraid it would affect the Revenue. If I am allowed to print the above sentence on a label I hold I am at liberty to print bills for distribution, and also advertise it in the newspapers, etc. Do you think the I.R. authorities would allow that? Where is the limit? The terms cough, liver, stomach, diarrhœa, etc., were concessions before, but now we have a right to them provided we can prove the origin of the formula. To mention my "cough mixture" again, I have a right to call it by that name, but how far can I legally go beyond that? My reading of it is this—only I think it is too good of the Revenue to treat me so kindly—as long as I do not call it "Lewis's" or "prepared only by Lewis" I can advertise it as much as I like without stamping it. Would you think it wise to see the authorities on that point, or are you quite sure about it already? I believe many chemists feel rather uneasy about it.

October 19, 1903. "D. L." (233/44).

*** If a preparation, sold by a chemist and druggist, comes within the scope of the special exemption, and is not rendered liable apart from that exemption, the seller can state what he chooses in recommendation of it upon labels or hand-bills. Chemists and druggists should, however, avoid undue recommendation, as by the very fulness of the "puffing" they may some day be held to have implied that the preparation is not a "well-known" remedy.—[Ed. *P.J.*]

The enclosed is a cutting from the *Staffordshire Sentinel* of this day's date, which contains a report of a recent meeting of the North Staffordshire Chemists' Association:—

> The main subject of discussion was the altered regulation of the Inland Revenue in regard to the sale of drugs and medicines to grocers and small shopkeepers. Hitherto this class of shopkeepers had been allowed to sell certain cough mixtures, pills, and powders, without a licence and without the articles being stamped with the Government stamp. After December 31 next, the Inland Revenue will require shopkeepers retailing such articles to have a patent medicine dealers' licence. This subject is causing considerable agitation amongst chemists throughout the country who do a wholesale trade, and strong action is being taken to modify the interference by the Revenue with a system which has been allowed to exist for half a century or more.

It is a pity that personal trading interests should be allowed to percolate so freely at the Association's meetings, and through the medium of the local paper, with apparent approval. One can only trust that the Inland Revenue will effectively exterminate the present lax state of affairs which, according to the last paragraph of the report, have existed fifty years or more. Fifty years have the individual rights of the chemist and druggist been infringed upon by a class of traders who retail ice cream, tripe, chips, tobacco, etc., and the means of supply to the said traders are "those traders who do a wholesale trade." Exactly, those who endeavour to sink their own ship, but our ship will stand more than needle pricks.

October 19, 1903. "North Staffs" (234/32).

Well-known Books of Reference.

I shall be obliged if you will allow me to mention the fact that the Board of Inland Revenue has graciously consented to regard articles prepared in accordance with formulæ in the 'Extra Pharmacopœia' as "known, admitted, and approved" remedies for the purpose of the medicine stamp duty, provided that a sufficient reference to that book appears in the labels under which the articles are sold.

London, W., October 15, 1903. W. Harrison Martindale.

*** In addition to the 'Extra Pharmacopœia,' the Board of Inland Revenue recognises as well-known books of reference the 'British Pharmacopœia,' the 'Pharmaceutical Journal Formulary,' the 'British Pharmaceutical Conference Formulary,' Squire's 'Companion to the British Pharmacopœia,' Braithwaite's 'Pharmaceutical Formulary,' MacEwan's 'Pharmaceutical Formulas,' foreign pharmacopœias, and hospital pharmacopœias. Doubtless, other standard works of reference will also be recognised, if such recognition should appear desirable.—[Ed *P. J.*].

The West-Riding Federation.

It seems to me that Messrs. Gledhill, Broadhead, and Pickard are making much ado about a very little matter. I had the honour to be appointed by the Bradford Association to act as a delegate along with Mr. Waddington at the Dewsbury meeting, when the suggested rules for the West-Riding Federation were discussed. As was quite right and proper, the conveners of the meeting came ready with certain suggestions, but some of these certainly did not commend themselves to the judgment of either Mr. Waddington or myself. We did our best to remedy the matters as we thought, and sometimes the majority was with us and sometimes against us. Whatever the result, we accepted the ruling of the meeting. If we found it difficult to get alterations made, that fact does not reflect at all upon the Dewsbury delegates, or upon the conduct of the chairman, who was absolutely impartial, but merely shows that we failed to bring over the majority to our views, and that I believe is the sole meaning of Mr. Waddington's remark. I do not think that the fact that only one-fifth of the resolutions stand in the names of the Dewsbury delegates (see Mr. Gledhill's letter of October 3) proves at all that Mr. Waddington made any false statement, for naturally the Dewsbury delegates would not be anxious to amend the rules they had themselves drawn up. The wonder is that they moved any amendments at all. I am very sorry to see, from the tone that these gentlemen use, that the Dewsbury members of the Federation appear to be jealous of the preponderating influence of Bradford in the councils of the Federation. I do not think that they have any cause to be so at all, as I am certain, from an intimate knowledge of the whole facts, that the Bradford Association has not any wish (nor indeed has it the power) to have things all its own way in the Federation. With regard to the latter part of Mr. Pickard's letter, I can only say that I think he ought to have known Mr. Waddington better than to have attributed to him the opinions that he does.

Fred. A. Wilcock.

Newcastle-on-Tyne, October 17, 1903.

*** As no good purpose can be served by continuing the discussion in our columns, this correspondence must now cease.—[Ed. *P.J.*].

Does Saccharin Affect Digestion?

I am an old pharmaceutical chemist. I used to be in business here in the shop now kept by Mr. T. B. Cattell. He recently lent me the Journal of October 3, and in it I saw a report of Mr. A. J. Winogradow, quoted from *Zeitschr. für Nahrungs u. Genussm.*, on his research upon the action of aniline-colouring substances on digestive power of pepsine. He finds that all such substances have a prejudicial effect on the digestive power of pepsin, and in twelve of them the effect was very marked. This paper has induced me to write you on partly the same subject. For several years, in consequence of an attack of diabetes, I have more or less regularly used saccharin in food. I have for some year or two suffered from dyspepsia also, and have been led to suspect that it was due to saccharin, for nothing which my doctor could do had any effect in relieving the stomach derangement. I am now abstaining entirely from saccharin, and already perceive a considerable improvement in the symptoms complained of. I think if you would not object to introduce a discussion on this subject in the *Pharmaceutical Journal* it might elicit the experience of others. It seems to me almost certain that all these allied substances, having such a powerful affinity for animal membranes as we know them to possess, must, when absorbed by the membranes of the digestive tract, seriously alter their condition and impair their processes.

Sutton Coldfield, October 19, 1903. George Johnson.

Dispensing Bottles.

When dispensing I have always considered it a part of my duty to measure all dispensing bottles before filling the same, and my experience has taught me that, where this is not done, owing to the badly-finished English-made dispensing bottles on the market, the "mitte ℥viii." found on medical prescriptions is but seldom complied with. Out of half-a-dozen so-called ℥viii. bottles, bearing the names of well-known glass-bottle manufacturers, together with those of respectable pharmacists, that I measured the other day, only one could be correctly called an ℥viii. bottle. The others when filled up to the top of the neck could be made to hold only ℥viiss. This fact then, I think, is important to those that have to deal with potent medicines and do not measure their dispensing bottles before filling them. And, whilst the man who tells us that the foreign-made chemist is a more competent man than his English brother may or may not be correct, it is certain that the foreign-made bottles imported into this country are a cheaper and a better-graduated thing.

Criccieth, October 20, 1903. J. Williams.

Chemists' Account Books.

I shall be grateful if you or any of your numerous readers can help me to a better system of book-keeping for the New Year. I confess that the only books that I keep at present are a record of daily receipts, day book, and ledger. I never book anything that I pay, and therefore can never trace any payment unless I have a settled invoice for it. And as for stock-taking, I have never had the courage to face it nor the time necessary for it, and I do not know whether my stock is worth £600 or £1,200. Of course, all this is very careless—very. But I have been content to think that, if my bank balance was right, it didn't matter. But latterly, as the Scotchman says, "I hae ma doots." And what has set me thinking is this, that I have had considerable dealings and friendly converse with two proprietors of drug stores, limited, and they have several times surprised me by the ease with which they could put their hands on their dealings with any particular firm for the last three months, or the corresponding period of any previous year, and other useful information of that kind, which it would cost me considerable time and trouble to ascertain. These men have a properly-equipped office and staff of clerks, which the one-horse chemist cannot have; but most of us have an apprentice, for whom it is often difficult to find full work, and he might well fill in his spare half-hours by keeping a set of books; it would be useful to us in many ways, and would be good experience for him. I have found that very few assistants have even a rudimentary knowledge of booking. There are many standard works on book-keeping, and in August, 1901, there appeared in the *Pharmaceutical Journal* two articles, which are very good so far as they go, but they are like all the rest of them in this respect—that they simply deal with the purely financial part, which is common to every class of business, and give no information at all on those special points which are peculiar to the chemist's business. What is wanted is some quick and ready means of putting one's hand, at a moment's notice, on certain data—*e.g.*, the price last paid for any article, the annual expenses of the business, the amount of one's dealings with any particular firm, the value of goods received into stock during any given period, the amount of accounts owing at any moment, and various other useful information of a like character. Any wrinkles on this matter would be appreciated by

October 19, 1903. "Simplicitas" (98/18).

The 'Pharmaceutical Journal Formulary.'

The success of your 'P.J. Formulary' is evident and assured. It gives another illustration of the fact that whenever we find ourselves between the d—— and the deep sea it is greatly wise to choose the latter, flinging our bread upon the waters, that, guided by providence, the seeker may find the fructified good after many days, the bulk of badness being gone to its own plane. With this view I think it high time for me to have some finger in the pie, and send you herewith a few of my own most useful nostrums; they have all of them done duty many years as a combinational element in my business mass, and I keep to them still, prepared to defend myself should the employment of them ever be called into serious question.

October 18, 1903. "J. C. H." (233/19).

I enclose a few good formulæ for publication in the "Supplement"; those hitherto appearing do not seem equivalent. Your collection will prove most valuable.

October 20, 1903. "R. H. P." (234/34).

Will you please have the enclosed formulæ printed and published in your register of recipes? We congratulate you upon the concession obtained from Somerset House and reported in last week's Journal.

October 20, 1903. "F. & D." (234/28).

You are kindly publishing different formulæ for chemist preparations. I have a few which have a very big sale, and I should consider it a favour if they could be included in your already useful list.

October 15, 1903. "F. W. S." (232/14).

Seeing that the *Pharmaceutical Journal* Recipes is likely to be a most useful publication, both to individual chemists and to the trade generally, I am sending some more recipes, which I should very much like you to insert, if not too late.

October 10, 1903. "R. M." (230/19).

I enclose a few recipes for the 'P. J. F.' I find some already published will meet some of my requirements, so I need not repeat them. I think I was one of the first to suggest the publication in a letter to the *P.J.*

October 8, 1903. "A. W. H." (229/24).

I send you a few recipes. Kindly put in the 'P. J. F.' I strongly approve of the publication. I may send more hereafter.

October 6, 1903. W. A. Grace.

Enclosed find a few formulæ to be registered in the 'P. J. Formulary.' Please accept our hearty thanks and congratulations on the venture. We hope it will obtain the success it deserves.

October 8, 1903. "A. G. & S." (229/26).

I send you two recipes for the 'Formulary.' What a valuable publication it will be!

October 9, 1903. "J. C." (229/45).

The inclusion of the enclosed formulæ in the Journal "Recipes" will be esteemed. Might I suggest that a reliable list of B.P. preparations which can be recommended for ailments without involving stamp duty be appended to the "Recipes"?

October 13, 1903. "B. H." (231/27).

I enclose a collection of formulæ used in my business for inclusion in the 'P. J. R.', and thank you in anticipation of their insertion. Hearty congratulations and best wishes for success in your arduous labour.

October 16, 1903. "W. F. C." (233/12).

I should feel greatly obliged if you would include the enclosed formulæ in *Pharmaceutical Journal* 'Recipes.' The prompt action which you have taken in this matter ought, I am sure, to increase the strength of the Society by interesting those chemists who are not at present connected with it.

October 10, 1903. "G. W." (230/31).

I have pleasure in submitting the enclosed recipes, which I trust you will be able to include in the 'Pharmaceutical Journal Formulary.' They are, I consider, good recipes, and have a good, steady sale with me. Thanking you in anticipation, and also thanking you for the way in which you have studied our interests and welfare.

October 12, 1903. "A. M." (230/44).

I shall be glad if you will include enclosed recipes in your 'P. J. Formulary.' Thanking you for the pains you are taking in this very vexed question of liability to stamp duty,

October 11, 1903. "A. C." (230/22).

I shall be glad if you will include the enclosed formulæ in the 'P. J. F.' Although you say that it is not necessary to number recipes, I think it still advisable, as I think the Board will eventually come to the conclusion that without definite means of identification, among the mass published, identification will be impossible, and the concession therefore withdrawn.

October 16, 1903. "W. S. W." (232/33).

I beg to tender you my best thanks for the great interest you are taking over the Inland Revenue restrictions. I think the additional benefit to us—viz., the omission of number of formula—a great boon.

October 21, 1903. "J. F." (235/23)

The Paris Centenary.

Will you permit us, as the English chemists in Paris who had the great honour of meeting the Presidents of the Pharmaceutical Society of Great Britain and of the Conference in Paris on the occasion of their official visit to express in your columns our gratification at the presence of Mr. Atkins and Mr. Idris, and our appreciation of their cordiality? Their visit has had the effect, not only of furthering reciprocity between English and French pharmacists, but also of bringing into closer relationship the English pharmacists resident in Paris.

R. E. Lloyd, T. Rawlins,
J. R. Stevenson, T. Hannay,
E. J. Chatburn, W. S. Bound,
Paris, October 21, 1903. Frederick. J. Boss.

The "C.O.D." System.

Application has been made to the Chamber of Commerce to urge upon the Government the adoption of the system of cash on delivery (C.O.D.). There is a difference of opinion among the trades, and I would like to find out what the feeling is of houses in the trade you represent. A sub-committee has been formed to collect information, and I shall be glad to learn, through the Editor of the *Pharmaceutical Journal*, what are the views on the subject of chemists and druggists.

London, October 21, 1903. Thos. Christy,
Chairman of P.O. Committee.

Information Wanted.

Address (A. D.—97/13).—Can any reader supply the address of a firm trading as Courvoisier and Co.?

Mexican Beans (E. H.—98/10).—Can any reader supply the name of a dark-coloured bean, coming from Mexico, which is used by Spanish ladies. The bean is burnt and the smoke allowed to enter the eyes, which are said to be brightened thus to a very great extent. The bean is thin and about two to three inches in length.

Spring Water Crystals (G. J. G.—98/20).—What is the composition of these crystals? They are used for increasing the sparkling properties of aërated waters.

BIRTH.

St. Cyr.—On September 25, at Kingston, Jamaica, the wife of E. L. N. St. Cyr, M.P.S., of a son.

MARRIAGES.

Fielding—M'Mahon.—On October 14, at Park Villas, Victoria Road, by the Rev. Canon D. M'Namara, P.P., St. Finbarr's, Patrick J. D. Fielding, F.C.S., eldest son of Jeremiah Fielding, St. Joseph's Place, to Hannah M. (Cissie), second daughter of Maurice M'Mahon. No cards.

Macdonald—More.—On October 15, at Porterswell, Uddingston, by the Rev. T. H. Walker, assisted by the Rev. James R. Sabiston, B.D., Donald Fraser Macdonald, M.P.S., to Anne, daughter of Mr. James More, Thrumster, Caithness.

Whysall - Cullen-Truswell.—On September 23, at the Church of the Holy Rood, Edwalton, by the Rev. John Killick, vicar of Little Crompton, Gloucester, assisted by the Rev. A. Sutherland, vicar of Edwalton, George Ernest, second son of William Whysall, Grantham, to Mary Gertrude, eldest daughter of Walter Cullen-Truswell, of West Bridgford.

DEATHS.

Bryant.—On September 11, Nicholas John Andrew Bryant, Pharmaceutical Chemist, formerly assistant to Mr. W. H. Bucher, pharmaceutical chemist, of Boscawen Street, Truro. Aged 32. Mr. Bryant, who had been a member of the Pharmaceutical Society since 1895, went during that year to South Africa, and was associated with Messrs. Lennon and Co., at Port Elizabeth and Bulawayo, and later, until the war broke out, as manager of that firm's business at Bloemfontein. In March last he went to Burghersdorp to manage the same company's establishment, and subsequently went into business for himself. There he died somewhat suddenly from Bright's disease.

Burrows.—On October 21, at "Northbourne," Eton Avenue, Hampstead, Zillah, the wife of Eggleston Burrows, Chairman of Vinolia Company, Limited. Aged 36 years. Funeral Service at Holy Trinity Church, Clarence Road, Kentish Town, on Friday, October 23, at 12.30. Interment at Marylebone Cemetery, Finchley.

Holl.—On October 7, George Holl, Chemist and Druggist, Newcastle-on-Tyne. Aged 47. Mr. Holl served his apprenticeship to Mr. Edward Davis, of Bishop's Castle, and for nine years he was with Mr. T. Lunn, of Worcester, subsequently opening a pharmacy at 231, High Street, Lewisham. Three years afterwards he sold the business and went to the North of England. He was first with Mr. J. Roberts, in the Bigg Market, and then with the old-established firm of Taylor Gibson, until the business was bought by J. Roberts, when he again went to the Bigg Market and remained there.

Knapman.—On October 20, at 59, Heathland Road, Stamford Hill, N., Louisa (*née* Ferry), wife of John William Knapman Librarian to the Pharmaceutical Society. Aged 56.

Sharples.—On October 19, George Sharples, Pharmaceutical Chemist, Preston. Aged 83. Mr. Sharples, who had been a member of the Pharmaceutical Society since 1843, was born on December 26, 1819, at Ribbleton Lodge, Preston, and was educated at the Grammar School. He served his apprenticeship with Mr. Thomas Copeland, at 7, Fishergate, and in 1842 he took over the business, which he conducted for over sixty years. Many chemists in Preston and other parts of the country, now in business for themselves, served their apprenticeship to Mr. Sharples, who, in addition to his pharmaceutical practice, had a very large business in electrical, medical, surgical, chemical, and scientific apparatus, and at one time his shop was the telephone exchange for the town, several electrical engineers receiving their early training there.

Stevenson.—On October 13, Robert Stevenson, Chemist and Druggist, Edinburgh. Aged 37.

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped directed envelope for reply. No notice can be taken of anonymous communications.

Formulary (J. S. W.—98/12).—An index will be published with the completed volume.

Formulæ (G. W. I.—98/26).—Your question is answered in this week's issue, in the article at page 574.

Cement (H. M. M.—97/34).—Have you tried a saturated solution of orange shellac in methylated spirit?

Blood Purifier (H. W. H.—98/5).—The label will render the preparation liable unless you disclose the formula.

Name for Pharmacy (M. F. B.—98/11).—We are not aware that any permission will be required in such a case.

Solution (J. W. S.—97/32).—It is a matter for experiment. Have you tried ether, acetone, or glacial acetic acid?

Tinct. Cantharidis (J. E. F.—98/15).—As a wholesale transaction it is exempted by Section 16 of the Pharmacy Act, 1868.

Wine for Diabetics (D. J. B.—97/31).—Light French and German wines, such as claret and still hock, contain the least sugar.

Carbolic Oil (G. H. B.—98/6).—The oil often assumes a greenish tint, but we are not aware that the fact has ever been explained.

Colour of Mixture (W. W. H.—98/21).—It is impossible to say what colour the mixture should be without preparing it. What is your difficulty in the matter?

Mercuric Benzoate (A. W. C.—98/3).—A hypodermic injection is prepared by dissolving mercuric benzoate, 3, and sodium chloride, 1, in recently boiled and cooled distilled water, 400.

Razors (A. J. G.—97/26).—It is doubtful whether the popular belief is well founded, but you could test its truth by microscopical examination of the edge of the razor under varying conditions.

Poisons in Medicines (S. B.—231/11).—You must follow the same practice in selling medicines containing poisonous ingredients, whether the recipes are registered in the 'P. J. Formulary' or not.

Post-Graduate Courses (W. W.—232/8).—It is doubtful whether such a scheme as you suggest could be adapted to pharmaceutical requirements, but the matter will receive consideration.

Celluloid (R. B. M.—97/33).—(1) Consult the article on "Ivory Substitutes" in the second series of Spon's 'Workshop Receipts.' (2) You could not expect to make it unless you have a hydraulic press.

Bronchial Mixture (A. J. H.—98/8).—The formula will be published in due course, and you will then be able to benefit by the exemption if you label the preparation as suggested. You must not use the name in the possessive case.

India-rubber Stamps (J. G.—229/7).—Any maker of india-rubber stamps can supply what you require, but Mr. C. D. Richford, 8, Snow Hill, London, E.C., and Mr. A. B. Hickisson, 76, Southgate Road, London, N., make a specialty of stamps for chemists and druggists.

Linden Flowers (E. G. M.—98/14).—The lime tree, *Tilia europœa*. They contain a fragrant volatile oil, and have been used in warm baths to allay nervous irritability. A strong infusion has been administered as an enema for the same purpose, or drunk as tea in cases of chronic epilepsy.

Formulas (M. H. and C.—233/40).—(1) They will all be liable unless the recipes are published and that fact is indicated on the labels. (2) The names "Strong Aperient Pills" and "Mild Aperient Pills" will not incur liability. (3) Yes, they will be re-published in book form.

Piper Case (W. A. D.—98/19).—It was the leading case which decided that the exemption of "patent medicines" from the provisions of the first fifteen sections of the Pharmacy Act, 1868, does not apply to ordinary proprietary medicines such as chlorodyne, which have never been the subject of Letters Patent.

Book on Refraction (G. B. W.—98/2).—The book you mention is recommended by experts as a useful work for students, but you will require others if you wish to secure a competent knowledge on the subject. See the *P.J.* Photographic and Optical Supplement, published March 28, last. We know nothing about the school you mention.

Formulæ (G. S. D.—98/9).—(1) The Pulvis Potassii Chloratis Compositus is a mixture of powdered potassium chlorate, 1, borax, 1, sodium bicarbonate, 1, and white sugar, 2. (2) The menthol drops (Nebula Menthol) are prepared by dissolving menthol, 180 grains, in olive oil, 2 fl. ounces. (3) The boric snuff (Insufflatio Acid Borici) consists simply of boric acid in fine powder.

Sugar Boiling (H. S.—98/1).—Presumably you wish to prevent "candying." For that purpose, add with the water to each seven pounds of sugar as much cream of tartar, or cream of tartar and powdered alum in equal parts, as will lie upon a sixpence. Sometimes, also, a little butter is added when the syrup begins to cool. Consult the article on "Confectionery" in the second series of Spon's 'Workshop Receipts.'

Bismuth Salicylate (G. H. B.—98/7).—Probably a little iron is present in the salt or the acid. The salt is sufficiently decomposed by water to give the characteristic colour reaction of salicylic acid with ferric chloride. Moreover, all commercial samples of the salicylate are said to contain free salicylic acid. Are you sure that salicylic aldehyde is given off? It appears improbable. Heat a little salicin cautiously in a test-tube and note whether the odour of the salicylic aldehyde evolved is the same as that you have observed. You must amuse yourself by constructing the equations you ask for.

Labels (W. W. W.—98/16).—The "Emollient Winter Cream" and "Cod-liver Oil Emulsion" are not rendered liable by the labels you send. The words in the second line of the label for "Digestive Powder" may be held to create a proprietary right, and should therefore be deleted. The "Children's Cough Balsam" and "Compound Tincture of Myrrh and Borax" are undoubtedly liable, unless you state where the formulæ are published. The disclosure on the other two labels may be sufficient, but it would be wiser in those cases also to state the source of each formula.

Labels (J. R.—233/13).—It will be sufficient to write "Codex" or "B.P." on the labels for Blaud's Pills. The label for Easton's Syrup will be liable unless you print the formula for the preparation on the label, or can state thereon that the syrup is prepared according to a formula in the B.P. The name "Dr. Bow's Liniment" is permanently liable, because duty has been paid for some time past on a proprietary article bearing that name; you might secure exemption by labelling the preparation "The Liniment—as prescribed by Dr. Bow," and indicating on the label where the formula is published. The other labels you send do not incur liability. We cannot undertake to return labels unless duplicates are sent.

Reference to Formulary (J. D.—98/17).—Your conclusion i correct and, provided your preparations are not rendered liable apart from the special exemption, you can continue to use your existing labels, after stamping them thus:—

PREPARED ACCORDING
TO THE
PHARMACEUTICAL JOURNAL FORMULARY.

An india-rubber stamp for this purpose can be obtained at a trifling cost.

Correction.

Brighton County Court Case.—In place of the last line of the report of a Brighton County Court case, at page 563 of last week's issue, *read* "Judgment was entered for defendant with costs." We regret that, by a reporter's error, judgment was stated to have been entered for plaintiff.

Calendar for the Week (October 25—31, 1903).

Days of		Events of the Week.	Sun	
M	W		Rises	Sets.
25	**S**	**Twentieth Sunday after Trinity.**	6.41	4.47
26	M	Dupuis born, 1742.	6.43	4.45
27	Tu	Total Eclipse of the Sun in America, 1780.	6.45	4.43
28	W	☽First Quarter, 8.33 a.m.	6.46	4.42
		Bradford and District Chemists' Association, at 8.30 p.m.—Visit of Mr. S. R. Atkins, President of the Pharmaceutical Society.		
		Edinburgh Chemists', Assistants', and Apprentices' Association, at 9 p.m.—Opening Meeting.		
		Plymouth and District Chemists' Association, at 3 p.m.—Annual Meeting.		
		Thames Valley District Chemists' Association, at 7 p.m.—Opening meeting.		
29	Th	Barnsley and District Chemists' Association, at 7 p.m.—Annual Meeting.	6.48	4.40
		Chemists' Assistants' Association, at 8.30 p.m.—Visit to London Hospital Dispensary.		
		Glasgow and West of Scotland Pharmaceutical Association.—Opening Meeting.		
		Sheffield Pharmaceutical and Chemical Society, at 6.30 p.m.—Annual Dinner.		
30	F	Bournemouth Pharmaceutical Association, at 8 p.m.—Annual Supper.	6.50	4.38
31	S	John Evelyn, born 1620; died February 20, 1706.	6.52	4.36

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Anderson, Arblaster, Arrowsmith, Atkinson, Austin, Barker, Beall, Bennett, Bird, Birkbeck, Black, Blamey, Booth, Botham, Braddock, Briggs, Buckley, Burgin, Cain, Campkin, Cave, Chester, Clarke, Clarkson, Cleland, Colby, Colley, Cox, Croft, Crowther, Davies, Dawson, Dobson, Dotchin, Duberly, Dunn, Eberlin, Ferrall, Forster, Freeman, Galbraith, Gostling, Gradidge, Grayson, Grimwade, Gwinn, Hall, Hampson, Harrison, Haselar, Haynes, Herbert, Holmes, Horton, Houfe, Hudson, Humble, Hume, Jackson, Johnson, Jones, Kerr, Lawman, Lawson, Lees, Lewis, Maben, Macdonald, Machin, Marshall, Martindale, Massingham, Matthews, McIntosh, Mitchell, Newton, Ockwell, Oldbury, Orton, Palmer, Parker, Peel, Pescod, Pickering, Plenderleith, Priestley, Raffan, Robertson, Rose, Row, Rowland, Sadler, Scott, Seymour, Shacklady, Shattock, Skinner, Smith, St. Cyr, Stead, Stewart, Sumner, Tocher, Todd, Town, Travis, Vincent, Wain, Walker, Walmsley, White, Whitehead, Whysall, Whyte, Wilcock, Willey, Williams, Wilson, Wolstenholme, Yendall.

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The Pharmaceutical Journal
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Annual Subscription, 20s. Post Free; Single Copies, 4d. each, by Post, 4½d.

CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, October 29, 1903.

Successful Meetings of local Associations have been held at Liverpool, Kingston-on-Thames, Plymouth, and Bradford.

The Fourth Article by Mr. J. H. Heap, on the "Commerce of Drugs," is published in this issue. The article is profusely illustrated.

The Adjourned Summons against an Edgware Road (London) chemist, under the Indecent Advertisements Act, came on for hearing on Monday last. The case was dismissed.

The General Purposes Committee of the Federation of Grocers' Associations has had the advantage of hearing the views of Mr. F. W. Beck, solicitor, on the Medicine Stamp question.

Several Interesting Articles are published in this issue. The first of a series of articles entitled "Paris Sketches," based on interviews with prominent Frenchmen, will appear next week.

At Last There Appears a Likelihood of a chemist obtaining a seat in the House of Commons. Mr. T. H. W. Idris, L.C.C., J.P., has been selected as Liberal candidate for a "safe" constituency.

The Executive of the North British Branch of the Pharmaceutical Society held a meeting on Friday of last week. "Medicine Stamp Duty" and "The Pharmacy Bill" were under consideration.

In the Students' Columns is published the second article on the Dispensing of Medicines. Dispensed medicines are classified according to their uses and physical characteristics. The dispensing of mixtures is also discussed in some detail.

At Wednesday's Meeting of the Bradford Chemists' Association, the President of the Pharmaceutical Society was present, and gave an address, which was received with the greatest enthusiasm. Mr. Atkins is the principal guest at the annual dinner of the Sheffield Pharmaceutical and Chemical Society this evening.

Still Another "Concession," fully equal in importance to those already granted, is announced by the Board of Inland Revenue in a letter to the Editor of the *Pharmaceutical Journal.* The Board has changed its mind on the subject of liability being incurred when mention is made of an organ or part of the body. Such mention will not now render the preparation liable to stamp duty.

Twenty-two Pages of "Recipes" are published this week. In the *Inset* will be found a subscription order form for the completed work. Members and Student-Associates of the Pharmaceutical Society will be entitled, if they subscribe in advance, to one copy each at the nominal price of 5s. 6d., post free. On and after January 1 the price will be raised. It will be impossible to publish all the formulæ in the Journal, and in the completed work will appear a large number of recipes which have not hitherto been published.

Judgment Was Given in the Bradford County Court, on Tuesday last, against an unqualified assistant who had dispensed and retailed a bottle of medicine containing morphine. The defence was raised that as the defendant held the Apothecaries' Hall dispenser's certificate, he was an apothecary, and, therefore, entitled to exemption from the provisions of the Pharmacy Act; further, that the sale was supervised by a registered chemist, who was sitting in the back room. Both these arguments failed, and judgment was given for two penalties of £5 each, with costs on a higher scale.

CONCERNING JURY SERVICE.

It may be of interest, having regard to recent correspondence in the Journal on the subject of jury lists, to give actual extracts from the Statute Book and endeavour to ascertain precisely the obligation of the county and parochial authorities in this matter. So far as one has been able to learn there are only two places in England and Wales (the other parts of the United Kingdom not being amenable to the Juries Acts) where the familiar and time-honoured decoration of the church doors during the first three weeks in September is no longer to be witnessed. Those places are Plymouth and Worcester, and in each of them pharmacists actually in practice are being prejudiced by a newly-invented and, as it would appear, unauthorised procedure. For if no list be exhibited or even prepared, and the under-sheriff or equivalent local officer merely uses the burgess roll for summoning purposes, the pharmaceutical chemists whose names may be on that roll are deprived of their legal opportunities of objecting to a service from which they were specifically exempted by statute; and they cannot possibly take the prescribed measures to preserve the rights accorded by Anno vicesimo quinto et vicesimo sexto Victoriæ, cap. cvii.—otherwise known as the Juries Act, 1862. The actual terms of the exempting clause are as follow:—

> All registered pharmaceutical chemists . . . actually practising . . . shall be, and are hereby absolutely freed and exempted from *being returned*, and from serving upon any juries or inquests whatever, *and shall not be inserted in the lists to be prepared by virtue of the principal Act or this Act.*

It is obvious, therefore, that the Statute of 1862 contemplated a continuance of the procedure prescribed by

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previous legislation in regard to the jurors' list or jurors' book, and does not authorise, legalise, or even contemplate the use of the burgess roll as a ready-made substitute. A strong confirmation of this assumption is provided by Section 6 of the 1862 Act. Dealing with the duties of churchwardens and overseers on receipt of the precept with reference to jury lists, the section enacts that the penalties for "making default therein shall be in all respects the same as provided in the principal Act." Neither the provisions of the principal Act (6 Geo. IV., cap. l.) nor the continuing portions of the 1862 enactment have, up to the last Session of Parliament, been repealed, and it is difficult to understand the source of authority for the special practice in the two boroughs already named. The principal statute referred to in the Act of 1862 is that passed on June 22, 1825, under the name of "An Act for consolidating and amending the laws relative to jurors and juries," and its objects were (1) to codify the numerous and complicated enactments which had been accumulating in regard to juries since the reign of the first Edward; and (2) to extend the class from which jurors might be drawn. After defining who shall be and who shall not be qualified to serve, the statute prescribes the manner of listing them (Section IV.), and states that the Clerk of the Peace,

> "In every county, riding, and division in England and Wales, shall, within the first week of July in every year, issue and deliver his warrant . . . to the High Constables[*] of each hundred, lathe, wapentake, or other like district" (and such a wide description will cover most places) "by which he shall command them to issue forth their precepts to the churchwardens and overseers of the poor of the several parishes, and to the overseer of the several townships within their respective constablewicks, requiring them to prepare and make out before the first day of September a true list of all men . . . qualified and liable to serve, etc., etc."

That seems a plain and specific duty cast upon the clerk as well as a definite obligation upon the churchwardens and overseers, and though those functionaries may have been by effluxion of time and the operation of Local Government Acts metamorphosed into more important and more glorious officers, the onus of fulfilling the duties recited in the statute has not been removed from their shoulders. Section VIII. of the Statute goes on to say that the overseers of the parish or township aforesaid shall forthwith, after the receipt of the precept, "prepare and make out in alphabetical order a true list of every man . . . qualified and liable to serve." And such lists, when prepared (or true copies thereof) shall, according to Section IX., be affixed on the three first Sundays in the month of September "upon the principal door of each church, chapel, or other place of religious worship within their respective townships or townships." A copy of the list has also to be kept by the churchwardens for inspection. These directions are clear and unmistakable, as are also the provisions for punishing default. Sections XLV. and XLVI. of the principal Act provide a penalty of £50 in respect of the clerk of the peace *neglecting or refusing to prepare a Jurors' Book* (*i.e.*, copy of list) *in the time and manner prescribed;* and the lighter inconvenience a 40s. fine is imposed upon recalcitrant overseers, hurchwardens, etc., who refuse or neglect to assist in making out any list required by the Act, or who shall refuse or neglect to affix a signed copy on the principal door of the church, etc., etc., as required by the Act. There is nothing in the amending Act of 1862 repugnant to the above-stated provisions, and one must necessarily assume that they are still in force. Moreover, the contention urged in some quarters that a borough is not included in the descriptions cited in the principal Act has no real weight, as the Local Goverment Act of 1888 has distinctly provided that a county-borough is to be regarded as a part of the county in which it is situated. The only ground upon which it seems possible for any liberty, city, or borough to claim exemption from the obligations herein set forth, is that they possessed, prior to 1825, separate civil or criminal jurisdiction, and had a special method of preparing their jury lists. It does not appear that either Plymouth or Worcester has claimed to come within this category, and seeing that the presence of a man's name on any jury list is, by the Jury Act of 1870, a legal compulsion upon that man to serve, the importance of the question now raised in this brief article is sufficiently apparent.

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PROPHETS OF EVIL.

Various correspondents of the principal medical papers are troubled with "views" on the dispensing of medicine. A medical man, whose name it is neither necessary nor desirable to advertise in these columns, has written to the *Lancet* making vague and apparently serious charges against dispensers of drugs. "There is no department of trading," he writes, "which calls for the exercise of more care and more scrupulous honesty than the manufacture and dispensing of drugs, and there is no department of trading in which fraud is more difficult of detection. Yet I venture to suggest that substitution and adulteration are as rampant in this branch of commerce as in the others to which you have called attention." The editor of the *Lancet* points out that the remarks of his correspondent are not supported by the results of an inquiry instituted on the subject and published in the *Lancet* in May last. The application of the lash in these columns would add nothing to the weight of the highly-merited reproof administered by the editor of the *Lancet* to its irresponsible correspondent, but it is not without interest to make another quotation, this time from the correspondence columns of the *British Medical Journal.* The writer, a medical man in Scotland, states that in the district where he is practising he holds the appointment of medical officer to the parish, having to attend to the poor within a certain area. The contract for supplying drugs, etc., has been since he came into office in the hands of another practitioner in the district who keeps an unqualified dispenser in his open surgery. The correspondent of the *British Medical Journal* is not satisfied that his prescriptions are correctly dispensed. He states that he has called and complained without effect, and is of opinion that if he reports the matter to the parish council he would be certainly accused of spite or jealousy. He mentions that there is a chemist and druggist within the same district, and the contract for supplying drugs is usually given to a chemist when there is one in the district. He asks: "How is it that the decision of the General Medical Council can be so flagrantly ignored in this case?" He states that if he were to open a shop himself for consulting purposes he would be required to conform to the law of the Council, and employ a qualified chemist or dispense only his own prescriptions.

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[*] Functions of High Constable now merged in the Clerk of the Peace.

Still another letter bearing on the subject of dispensing appears in the *Lancet* from the pen of a Mr. Walter Asten. This gentleman deprecates the suggestion recently made by Professor Schäfer at Leeds that materia medica should cease to form a part of the medical curriculum. "Inasmuch as probably nine-tenths of the general practitioners in this country to-day dispense their own medicines it is only fair to the public and to the profession that they should be properly trained to do so during their curriculum." He further states that inefficient knowledge of materia medical and pharmacy on the part of many members of the medical profession is very largely responsible for the reprehensible practice now so prevalent of prescribing and recommending proprietary nostrums. "If the B.P. is not *q.s.* along with an addendum, say, such as Martindale's, it ought to be, and it becomes a serious reflection on the part of the Pharmacopœia Committee if it be not kept up-to-date. But this modern practice of prescribing So-and-so's liquid extract and So-and-so's 'oids'—very often merely as the result of an interview with an eloquent commercial traveller—is the outcome and the evidence of a most deplorable ignorance which should not prevail."

From the above three quotations, pharmacists must draw their own deductions. If the gentleman who speaks of the rampant adulteration of drugs be correct, chemists are evidently a bold bad set of men, whose house needs setting in order. The other matters, while they affect pharmacists and medical men alike, may be left with all confidence in the proper hands. The General Medical Council has already tackled with conspicuous success the question of the open shop to the unqualified assistant, and the medical curriculum is equally safe in the hands of those responsible for the direction of medical education.

LOCAL ORGANISATION.

During the past three or four years many pharmaceutical associations have been formed in different parts of the country, and some of them are now doing good work not only locally but for pharmacy generally. A striking example of what may be attained in the course of a year by a local association was given last week at the annual meeting of the North London Branch of the London Chemists' Association, which was briefly reported at page 595 of the Journal for October 24. That report, owing to the shortness of time and the exigencies of space, was curtailed to the barest possible outline, hence it does not fully convey to those who are not acquainted with the Association what progress has been made during the past twelve months. On October 23, 1902, a meeting of about thirty pharmacists decided to form a North London Branch of the parent Association, and a committee was appointed to organise the affairs of the branch, Mr. R. B. Betty being elected honorary secretary. Since then, largely on account of the indefatigible efforts of that gentleman, the branch has increased its membership from thirty to one hundred and forty-five, and the balance-sheet, presented at the general meeting last week, showed that the receipts, from members' subscriptions only, totalled £30 odd. Of that amount £8 15s. had been expended in various ways, and £9 7s. 6d. had been forwarded to the central Association, leaving a balance in hand of £12 2s. 6d. Those figures alone point to a healthy state of affairs, while another indication of the enterprising spirit which dominates the proceedings of the North London Branch is the circumstance that its general meeting was held, not in a building of the type which is usual for such meetings, but in the town hall of a London borough.

GROCERS, CONFECTIONERS, AND STAMP DUTY.

Traders, outside the ranks of those who have been educated in a knowledge of drugs and their properties, are becoming more and more importunate in their efforts to encroach on the legal privileges of the qualified chemist and druggist. Action on the part of the Federation of Grocers' Associations has been forced by a resolution submitted on Wednesday, the 21st inst., to the General Purposes Committee of that body from the Swansea Grocers' Association. A full explanation of the grocers' position with regard to Medicine Stamp Duty was given by Mr. F. W. Beck—of the firm of Neve, Beck, and Kirby—Solicitor to the Federation, and the Committee, with Mr. Beck's approval, passed a resolution in favour of urging the Government to grant exemption from Stamp Duty in the case—as the *Grocer*, to which we are indebted for our report, somewhat vaguely puts it—"of such simple remedies as are safely and conveniently handled by the trade." One of the speakers naively asked whether the Inland Revenue authorities had been "got at by the Society of Chemists and Druggists." Mr. Beck thought not.

Meanwhile, a "well-known pharmaceutist" has given the *Westminster Gazette* some valuable, and for the most part, accurate information on the sale of cough lozenges by confectioners. It is pointed out that the confectioner is not touched by the Inland Revenue so long as he is what he pretends to be, a mere seller of sweets. But when a lozenge becomes medicated it ceases to be a sweet and becomes a medicine. As for the street hawkers who pretend to sell paregoric cough-drops, the fact is emphasised that they either break the Sale of Food and Drugs Acts by offering a specifically named substance which is not in the lozenge, or they break the Pharmacy Act by selling a scheduled poison in an unauthorised way.

THE NOVEMBER EVENING MEETING.

Attention is again directed to the fact that it is proposed in future to exhibit novel scientific apparatus and pharmaceutical appliances at the Evening Meetings of the Pharmaceutical Society, the first of which is fixed for November 10, when papers will be read by Mr. Edmund White, B.Sc., F.I.C., on "Kino," and by Mr. William Garsed, lately Salters' Research Fellow, on "The Assay of Crude Cocaine." The President will take the chair at 8 p.m. precisely. After the meeting, additions to the Museum and Library during the past month will be exhibited in the Examination Hall. The Secretary will be glad to receive short papers on scientific or technical subjects, which members would like to communicate at this or any subsequent meeting.

THE ADMINISTRATION OF THE PHARMACY ACT.

It was unfortunately necessary last week to record the failure, on technical grounds of legal procedure, of two proceedings instituted by the Pharmaceutical Society under the Pharmacy Act. At Leeds last week a judge was persuaded to allow the time of the Court to be spent in a discussion as to whether or not Mr. BREMRIDGE is Registrar of the Pharmaceutical Society. That point seems Gilbertian enough to suit the tastes of most persons with a strong sense of the burlesque, but those who were responsible for the defence of an unqualified defendant at Bradford on the 23rd inst. "went one better." It was contended, with apparent seriousness, that the holder of an Apothecaries' Assistant's Certificate was an "Apothecary," and therefore entitled, by Section 16 of the Pharmacy Act, 1868, to sell scheduled poisons to the public. That farcical defence having been overruled by the judge, it was alleged that the sale had been effected under the supervision of a qualified man. It appeared that the qualified man in question, who has retired from business and is a personal friend of the proprietor, has been in the habit of sitting in a room behind the shop, when the latter was left by the proprietor, in order that a defence might be set up in the event of proceedings being instituted for the sale of poisons. It should be mentioned that unqualified assistants in the same pharmacy have been fined, not once nor twice, for breaches of the Act on previous occasions. The incident furnishes a more callous example of what is known as "covering" than any other within memory. His Honour Judge BOMPAS, having personally inspected the premises, came to the conclusion that there could have been no actual supervision, and gave judgment for the Society on every point with costs on the higher scale. He also expressed the opinion that the owner of the business, who had encouraged the illegality and profited by it, ought to pay the penalties inflicted on his assistant.

CONGRATULATIONS AND CRITICISMS.

Sparsely scattered among the hundreds of letters expressing appreciation of what is being done by means of the 'Pharmaceutical Journal Formulary' to protect the interests of chemists and druggists, are certain letters of destructive criticism which seem to require an answer. Of these the most important is one from Mr. JOHN INGHAM, printed at page 652 of this issue. Mr. INGHAM confuses our collection of recipes with the Compendium of Medicines, which Mr. CARTEIGHE has suggested should be issued, and then proceeds on the mistaken assumption that all the recipes published are "stamped and sealed with the authority of the Pharmaceutical Society." It must once again be stated, however, that not one single recipe, among the thousands which, for the convenience of chemists, are being registered in the Formulary, has, *quâ* recipe, the authoritative approval of the Pharmaceutical Society, nor even the approval of the Editor of the Journal. It is necessary to recall that one of the objects for which the Society was established was the "protection of those who carry on the business of chemists and druggists," and when it is stated that it is at present no uncommon thing to receive one hundred collections of recipes by a single post, it should be obvious that the vast majority of chemists and druggists do think that they are being "protected" by the publication. A disclaimer of responsibility for the efficacy or value of the recipes is being printed on every page in which recipes have appeared. Again, seeing that every recipe is for a remedy already in use, it is not a little difficult to see how counter-prescribing is being encouraged by the mere fact of publication.

During the last two months, five letters have been received, couched in more or less vigorous language, and protesting against the publication of the recipes in English. The recipe sent by one of the protesters furnishes the best answer to the complaints. Our critic began by writing his formula in Latin, but before he reached the conclusion he fell from his pedestal and dropped into the mother-tongue. The greatest expert in dog-Latin would find his originality severely taxed if he were required to put into Latin such words as gingerbread, delectable basis, crystal violet dye, or brown paste colour, all of which, with many other such, occur in the recipes. One of the best-known books of recipes—'Pharmaceutical Formulas'—is itself a striking testimony to the superiority of the pharmacopœial method of giving formulæ in English. Opening the book at random, the name 'Injection Brou' strikes the eye. Two formulæ are given for this preparation: the first of the two is given, half in one language and half in another. Numerous other recipes in the same book are given wholly in English. It has been urged by one correspondent that there is a great danger of the 'Pharmaceutical Journal Formulary' getting into the hands of the public, who will wish to try or to make up the recipes. But there is very slight risk of danger in that respect unless chemists allow other people to have access to the book. The attention of members of the Pharmaceutical Society is particularly directed to the announcement which appears in the *Inset* with regard to the Formulary.

MEDICINE STAMP DUTY—A FURTHER CONCESSION.

At the moment of going to press we have received the following intimation of a further important "concession" by the Board of Inland Revenue:—

Somerset House, London, W.C.
October 28, 1903.

Sir,—With reference to the recent decision in the case of Ransom *v.* Sanguinetti, I am directed by the Board of Inland Revenue to acquaint you that they do not now consider that the mention merely of an organ or part of the human body of itself renders a preparation liable to Medicine Stamp Duty.

I am, Sir,
Your obedient servant,
(Signed) H. BARTLETT,
Assistant Secretary.

The Editor
The *Pharmaceutical Journal*.

The effect of this latest modification of the change in practice announced by the Board some months ago is to exempt compounded medicines labelled with such names as "Liver Pills," "Voice and Throat Lozenges," "Stomach Mixture," "Lung Tonic," "Kidney Pills," "Eye Lotion," etc., provided no words of recommendation for the prevention, cure, or relief of any ailment appear on the labels, or in any handbills, advertisements, etc., referring to the preparations.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Sandarac Oil.

The essential oil of sandarac resin, which is obtained by steam distillation to the amount of 0·26 per cent., is a golden yellow liquid with an aromatic odour and a bitter camphoraceous taste. It has the sp.g. 0·8781 at 15° C., and is dextrorotatory +67° 60′. It begins to boil at 167° C., and 90 per cent. distils below 170° C. It is soluble in most organic solvents.—*Haensel's Report*, through *Pharm. Zeit.*, **48**, 574.

Pine Bud Oil.

Pine buds yield 0·288 per cent. of a light brown fragrant oil, recalling the aroma emitted by the trees when the young foliage is exposed to sunshine. It has the sp.g. 0·9338 at 15° C., and is soluble in 90 per cent. alcohol, as well as most other organic solvents. From its colour the rotation can only be taken in alcoholic solutions; it is thus found to be slightly lævorotatory —0° 38′.—*Haensel's Report*, through *Pharm. Zeit.*, **48**, 574.

Disodium Phosphate Solution to Distinguish Cinchona Alkaloids.

J. Messner finds that the neutral chlorides and sulphate of the four cinchona bases may be differentiated by their behaviour towards a 5 per cent. solution of di-sodium phosphate. A 1 per cent. solution of the alkaloidal salt is prepared, to 10 C.c. of of which three or four drops of the reagent are added. An immediate and permanent precipitate is given by cinchonine; no alteration is shown by cinchonidine; a turbidity ultimately disappearing indicates quinine or quinidine. In the last case to another 90 C.c. of the 1 per cent. alkaloidal solution a few drops of hydrochloric acid, 25 per cent., are added. 10 C.c. of this acid solution gives with an equal volume of the sodium phosphate reagent a crystalline precipitate in the presence of quinine, but remains clear with quinidine.—*Pharm. Zeit.*, **48**, 455.

Grindelia Oil.

The dried herb of *Grindelia robusta* gave by distillation with live steam 0·28 per cent. of a dark brown essential oil with a strong peculiar odour. Its sp. g. is 0·9582 at 15° C., and the optical rotation in alcoholic solution −8°·08′. It is soluble in ether, amyl alcohol, and chloroform, but the solutions in alcohol, benzol, and carbon disulphide are turbid.—*Haensel's Report*, through *Pharm. Zeit.*, **48**, 574.

Nitrogen Determination.

Denigès publishes a method resembling Kjeldahl's, which, however, dispenses with the distillation. The substance is heated with sulphuric acid and potassium oxalate until the liquid is decolorised and reduced to a small volume. It is then cooled, dissolved in water and exactly neutralised with sodium hydroxide. The nitrogen will be contained in this product as ammonium sulphate, and may be determined gasometrically by means of sodium hypobromite, a known solution of ammonium sulphate being used for comparison. Or it may be boiled with normal solution of soda in sufficient quantity to displace the ammonium, which is entirely dispelled by boiling the alkaline liquid for ten minutes. After this the product is treated with normal acid in excess and titrated back to neutrality by normal alkali. The quantity of the latter required for this purpose is equivalent to the quantity necessary to displace the ammonia originally present in the fluid, and from this the quantity of nitrogen in the original substance can be calculated. —*Bull. des Travaux de la Soc. de Pharm. Bordeaux*, through *Zeit. des Allgem. Oesterreich Apot. Ver.*, 1903, 592.

Gravimetric Determination of Cinnamic Aldehyde as Semioxamazone.

J. Hanus finds that cinnamic aldehyde forms quantitatively a crystalline semioxamazone, $C_{11}H_{11}N_3O_2$, when its aqueous suspension is treated with a watery solution of semioxamazide which may be collected and weighed. He states that the determination of cinnamic aldehyde, either in the commercial synthetic product, in cinnamon or cassia oils, or in the barks, may be more accurately made by this method than by the bisulphite absorption process usually adopted. From 0·15 to 2 Gm. of the oil, or 0·1 Gm. of the synthetic aldehyde, is emulsified by agitation with 100 C.c. of water. From 0·25 to 0·35 Gm. of semioxamazide, dissolved in 15 C.c. of hot water, is added to the emulsion, and the mixture, after well agitating occasionally for three hours, is set aside for twenty-four hours. The precipitated cinnamic aldehyde semioxamazone is then collected on a tared Gooch filter, washed with cold water, dried for four or five hours at 105° C., and weighed. The weight thus obtained, multiplied by 0·6083, gives the amount of cinnamic aldehyde present. Cinnamon and cassia barks are steam distilled, 5 to 8 Gm. being operated on. The distillate, which should measure about 400 C.c., is shaken out with ether. The ethereal solvent is distilled off at 60° to 70° C., and the residual oil, emulsified with water, is treated with semioxamazide solution, as described above. The results obtained with synthetic commercial cinnamic aldehyde are nearly 5 per cent. lower than those obtained by the bisulphite method. Those obtained by weighing the semioxamazone from cinnamon and cassia oil are, however, from 4 to 6 per cent. higher than the figures given by the absorption method.—*Zeits. für Untersuch. der Nahr. und Genussm.*, **6**, 817.

Oleum Phosphoratum.

Among the means recommended for the retardation of the oxidation to which the phosphorus is liable, the following may be mentioned:—Saturating the oily solution with carbon-dioxide and the addition of limonene. Kremel, of Vienna, now states that the addition of absolute alcohol is most efficient, and he also prefers olive to almond oil as the solvent. The solution is prepared as usual by agitating the phosphorus in the warm oil, and 5 per cent. of absolute alcohol is added to the cooled product.—*Zeit. des Allgem. Oest. Apot. Ver.*, 1903, 597.

Horticultural Characters.

Probably few botanists would know how to distinguish the apple and pear when not in fruit, except, perhaps, in a general way by the habit of growth, the branches of the pear tree being usually more erect and the outline more pyramidal. The horticulturist, however, has noticed that the young leaf of the apple unrolls on one side, but that of the pear on both sides at the same time.—*Gard. Chron.*, **34**, 148.

Determination of Cinnamic Aldehyde.

J. Hanus has devised a means of determining cinnamic aldehyde gravimetrically by means of Kerp and Unger's semi-oxamazide. The process is suitable for the determination of the aldehyde in cinnamon oil or in cinnamon bark; the latter is distilled with water, and the distillate shaken out with ether. The semi-oxamazone is soluble in 10,000 parts of 96 per cent., and the assay is more accurate than the usual bisulphite method. The oil is suspended in water by violent agitation, a hot solution of the semi-oxamazide added, and the agitation continued. The semi-oxamazone separates in fine white granules, which can be collected, washed, and dried.—*Zeitschr. d. Unters. d. Nahrungs u. Genussm.*, **6**, 817.

Chloral Hydrate as Solvent.

Attention may be drawn to the extraordinary solvent powers of chloral hydrate. It has long been used for microscopical purposes to render objects transparent, but its solvent power may also be utilised in many other ways. For example, in toxicological investigations for the detection of alkaloids a 60 to 80 per cent. solution of chloral hydrate dissolves all alkaloids and their salts, even the usually insoluble tannates. Resins, gum-resins, and balsams are almost all soluble, and in the case of gum-resins quantitative a separation of the constituents may easily be effected, because by adding alcohol to the chloral solution the gum is precipitated, while the resin is thrown out by adding water. Fats, oils, and waxes show variations of solubility which may serve for their partial differentiation. Vegetable colouring matters are dissolved by chloral hydrate solutions, with the exception of indigo, and the presence of indigo in litmus—which is stated to be very common—may be thereby detected. In the investigation of blood-colouring matter, starch, gelatin, and proteids, the solvent action of chloral hydrate may also find useful application.—*Zeit. des Oest. Apot. Vereins*, 1903, 758.

New Volatile Oils.

Schimmel's Report for October contains several articles concerning new volatile oils. One of these named apopinol is manufactured by the natives of Central and North Eastern Formosa, and has been examined by a Japanese chemist. It is said to bear some resemblance to camphor oil, and its native name, Schú yu, signifies "bad-smelling oil." It is believed to be obtained from a Lauraceous tree. An account is given of it, in the Japanese language, in the Journal of the Pharmaceutical Society of Japan, March, 1903. It has been found to contain eugenol, safrol, cineol, and dipentene. Two other novelties from Japan are the oils of *Magnolia kobus*, D.C., and *Artemisia vulgaris*, Linn. The former comes from Central Japan, where it is distilled from the fresh leaves and twigs of the tree from July to September. It has a pleasant odour, like that of safrol, of which it contains a considerable quantity; it also contains a little citral. The leaves yield about 0·45 per cent. of oil of a clear yellow colour. It has a specific gravity of 0·9642, a rotation of —1° 6′, an acid number, 1·5, and an ester number, 0·87, and is soluble in 1-2 volumes of 80 per cent. alcohol, the strongly diluted solution showing opalescence. The oil of *Artemisia vulgaris*, known in Japan as "Yomugi" oil, is of a clear green colour, and possesses a strong odour of cineol, its specific gravity is 0·9101, its rotation, —13° 16′; its acid number, 1·56, and its ester number, 29·86. It is not perfectly soluble in alcohol, the solution, even in absolute alcohol, showing opalescence. The oil contains cineol and thujin; another, the oil of *Acacia bavenia*, Hook. and Arn., was found to contain about 50 per cent. of phenol, chiefly eugenol 8 per cent. of salicylate of methyl, benzyl alcohol, geraniol' anisic aldehyde, eugenol methyl ether, and probably linalool' decylaldehyd and ionon. The oils of *Psoralia bituminosa*, L., *Inula viscosa*, Desf., and *Helichrysum angustifolium*, Sweet., have been prepared from plants grown in the Riviera and forwarded by Professor Penzig, of Genoa. The oil of the first-named plant has the bituminous odour characteristic of the leaves; it is present to the extent of 0·048 per cent. At ordinary temperature it is semi-solid, and contains a fatty acid (lauric acid). The specific gravity is 0·8988 at 25° C., the acid number is 57·18, and the ester number, 12·25. The oil of *Inula viscosa*, which is present to the extent of 0·062 per cent., is a dark-brown, thick oil with a not unpleasant odour, and at ordinary temperature separates a good deal of paraffin. It contains a fluid fatty acid. The specific gravity of the oil is 1·006, the acid number, 164·63, and the ester number, 15·77. The oil of *Helichrysum angustifolium* is present to the extent of 0·075 per cent. It is yellowish brown, has a specific gravity of 0·9182, with a rotation of +0° 40′, acid number, 14·4, ester number, 118·16. It forms a clear solution of 90 per cent. alcohol, which becomes cloudy subsequently from the separation of a paraffin, having a melting point of 67° C. The oils of *Cistus monspeliensis* and *C. salviifolius* have also been examined. They possess an ambergris odour, like that of ladanum; the former species yields 0·015 per cent. of volatile oil, with a specific gravity of 0·9786, a rotation of +1° 40′, an acid number of 15·7, and an ester number of 37·56 at a temperature of 20°-25°. The clear brown oil separates out a quantity of paraffin, having a melting point of 64°. The *Cistus salviifolius* yields 0·024 per cent. of oil of a specific gravity 0·9736, rotation +17° 20′, and an ester number of 22·73. The oil is yellowish green in colour, and deposits paraffin.

Characters of Rice Oil.

Rice bran or meal, when free from adulteration with husks, contains, according to C. A. Browne, about 15 per cent. of oil, semi-solid in winter, and in summer consisting of a brownish liquid with a deposit of crystalline fats. It has the following "constants":—Sp. g., $\frac{99°}{99°}$ C. 0·8907; melting point (point of liquefaction), 24° C.; acid number, 166·2; saponification number, 193·5; ester number, 27·3; iodine number, 91·65; Reichert, Meissl number, 1·1; mean molecular weight of insoluble fatty acids, 289·3; melting point of insoluble fatty acids, 36° C. Although the oil becomes fluid at 24° C., it is not perfectly transparent until the temperature reaches 47° C. The high acid number is remarkable, being equivalent to 83·5 per cent. of oleic acid. Smetham has previously recorded the amount of free fatty acids in Rangoon rice oil as ranging from 31·6 to 77·2 per cent. of the total fat. The high melting points and molecular weights of the fatty acids, as well as the formation of insoluble soaps, point to the probable presence of acids which are higher homologues of the series. The author attributes the high free acid content of the oil to the presence of a lipase in the bran, which acts on the glycerides liberating the fatty acids. The presence of this ferment in a very active state in the rice bran was proved, as well as its powerful hydrolysing action on the glycerides of rice oil.—*Journ. Amer. Chem. Soc.*, **25**, 948.

Sambucus Canadensis.

The golden-leaved elder is generally supposed to be a variety of *S. nigra*, but A. D. Richardson points out that it is really a form of *S. canadensis* (the species official in the U.S.P.). It differs from the common elder, as the flowers have usually five but sometimes six stamens, sepals, and segments to the corolla, whilst in *S. nigra* these are usually four in number, but sometimes five; the leaves also have one more pair of leaflets, and the cymes are more cushion-shaped.—*Gard. Chron.*, **34**, 154.

Standard Sieves.

In a paper communicated to the Pennsylvania Pharmaceutical Association, J. P. Remington remarks that he has been struck with the difference in the appearance of powders sold by different manufacturers, and all labelled No. 30 powder. This was due to the thickness of the wire not having been specified. He suggests that the Pharmacopœia, when it designates a No. 20 powder, should state in addition that the wire should be of a certain gauge, say No. 28.—*Amer. Journ. Pharm.*, **75**, 460.

THE COMMERCE OF DRUGS (4).

BY J. H. HEAP.

THE previous article under this heading concluded the description of such auctions of produce held on the London Market as are of interest to the drug trade. It was shown how nearly all of these are held in the Commercial Sale Rooms, Mincing Lane, and in the course of the description two photographs of that building were given. In speaking of the auctions frequent allusion to the warehouses and wharves in which produce is stored was necessary, and of these also illustrations have appeared. We must now, however, deal with these institutions—for such they may be called—a little more fully.

Crutched Friars

has been many times mentioned, but the character and accomodation of the warehouse cannot be estimated from what has been said. The building of this name is entered from the thoroughfare of Crutched Friars by a narrow gateway guarded by a constable, one of the servants of the London and India Docks Company, the owners of the warehouse. On the right near the entrance are the tobacco and cigar store-rooms, on the left that for vanilla. Passing under the clock, one emerges into the yard around which the building is located. The size of the place is then appreciated. In front, behind, and at each side you notice a line of floors running up to six storeys and measuring over 200,000 superficial feet. In the space of these walls a fortune is deposited. Nothing but bare, blank brick-work confronts you; you are reminded, perhaps, of a Lancashire factory, but you gaze on the repository of solid value measured probably by little short of a million pounds sterling. Exactly facing you is the doorway leading to the rhubarb, musk, and tolu room, but for the chief storerooms for drugs you turn to the left, and see the lift which carries you to the top floor, on which the fortnightly show is made. On this side again, however, skins, balata, and shells form much more valuable items of the warehouse. Behind you are the offices, and on the right are floors allotted to produce far removed from drugs. The arrangement of the warehouses is briefly thus:—The north-west angle is occupied entirely by tobacco, cigars, and cigarettes, of which nearly half a million pounds value is often in stock. Over a third of the warehouse is taken up by this class of goods. Drugs fill the greater part of the upper portion of the north-east angle, and extend into the South warehouse, which is principally packed with skins. The lower portion of the Eastern warehouse is devoted to shells and balata. There are three fine showrooms on the top floor, running from east to south. First there is that for drugs, then one for indigo, and a third for skins. Indigo is not stored in bulk in these warehouses, but simply exhibited in the form of samples. Of the drugs quinine forms the most valuable item. Nearly all the "second-hand" quinine held in London is contained in this and the Cutler Street warehouse. Altogether drugs cover some 70,000 superficial feet at Crutched Friars.

WHARVES FROM THE THAMES.

ONE OF THE BEST KNOWN WHARVES.

The Wharves.

After the Dock Company's premises there are a number of wharves and warehouses belonging to various proprietors which make a business of storing drugs. The principal of these are Bull, Red Lion, Nicholson's, Smith's, Red Bull, Wilson's, New Hibernia, Cotton's, Brook's, Coventry's, Gun, St. John's, Sharp's, Davis's, and Symons's. Three of the most interesting of these wharves and warehouses are Bull, Smith's, and Nicholson's. Illustrations of these appear in the present article, and the first-named has been referred to before. A description of the last is noteworthy historically, and it serves also as a general indication of the character of the wharves. The following notes supplied by the proprietors are therefore included:—

Nicholson's Wharves, comprising Nicholson's Proper and Botolph, were up to the beginning of last century the property of the Honourable East India Company, whose ships sailed from these wharves to the East. The vaults, which were part of the ancient St. Botolph Monastery, are now used for storing wines and spirits. The walls of the vaults are of immense thickness, the partitions varying from 2 ft. at the base to 4 ft. at the crown. A particularly interesting feature of their construction is that the beams consist simply of tree trunks about 2½ ft. in diameter.

Within such historical surroundings one meets, nevertheless, with the most modern appliances. The wharves are lighted throughout by electricity, and possess some of the largest cranes that can be seen working on the river Thames. Ships are discharged by two of these powerful monsters at a pontoon floating in the river and connected to the quays by a bridge. In addition to dried fruit and general merchandise, which are discharged from these ships direct into the warehouses, over one million packages of green fruit from Spain, Italy, and elsewhere are landed and taken direct to the Pudding Lane and Covent Garden Markets yearly. Warehousing facilities are also supplied for the storing and handling of tea, coffee, cocoa, sugar, sago, tapioca, dried fruit, canned goods, and spices, such as pepper, nutmeg, mace, cinnamon, etc. Special arrangements are made for separate classes of goods, so that they may be worked and operated upon in the particular manner applicable to each.

A FLOOR IN NICHOLSON'S WHARF, WHERE ESSENCES ARE LARGELY STORED.

ANGLE OF CRUTCHED FRIARS WAREHOUSE.

The chief link by which Nicholson's Wharves are connected with the drug trade is their association with the essential oil business. A considerable portion of these products brought into the United Kingdom is landed and warehoused at the wharves in Lower Thames Street. It can readily be understood that in view of their expensive nature every care is exercised, and only experienced men employed, in the handling of such essential oils as:—

Aniseed,
Bergamot,
Cassia,
Citronelle,
Clove,
Eucalyptus,
Geranium,
Orange,
Peppermint,
Thyme,
Wintergreen, etc.

After landing, whether in leads, coppers, bottles, or tins in cases, they are examined and sampled, the samples as a rule being sent to Mincing Lane Brokers' Sale-rooms. Invariably those packed in tins in cases have to be tared, the oil being turned out into a receptacle and the tins weighed. After the samples holes have been resoldered and the tins, etc., found to be in a thoroughly sound condition, the latter are repacked into their original cases and piled away on the special drug floors. Spaces boarded off and known as "lock-ups" are placed on these floors, and in these the essences are deposited. The usual procedure after landing drugs is to sort for quality, and to ascertain if any damage has happened to arrivals. If in any way damaged they are classified and piled accordingly. Sampling, taring, and weighing having taken place, the goods are piled on the drug floors.

ENTRANCE TO DRUG WAREHOUSES, LONDON DOCKS.

The following drugs and goods of a medicinal character are warehoused:—

Areca nuts,
Betel nuts,
Bark (cinchona, cascara, etc.).
Bucha leaves,
Cardamoms,
Colocynth,
Colombo root,
Cummin seed,
Insect powder,
Juniper berries,
Kola nuts,
Liquorice,
Manna,
Nux vomica,
Orris root,
Orange peel,
Roots and seeds which are used for medicinal purposes,
Saffron,
Senna,
Stavesacre,
Squills.

With one other illustrative list of the drugs stored by these wharves, this portion of the subject may be concluded. The following are the most important items of interest lodged at Smith's wharf and warehouses:—

Cantharides,
Cardamoms,
Capsicums and chillies.
Castor oil,
Camphor, refined and crude.
Colocynth,
Cinchona, bark,
Essential oils (all sorts),
Iodine,
Ipecacuanha,
Liquorice, Spanish and Italian,
Medicinal gums,
Nux vomica,
Strophanthus seed,
Spice ginger,
Quinine suphate.

The Dock Warehouses.

Crutched Friars is one of the "town warehouses" of the London and India Docks Company. Another is in Cutler Street, but as the contents of this building consist mainly of such things as carpets, tea, and curios, we need say nothing further about it. The big store-rooms at the docks themselves, however, must be taken into account. Seeing that the London and India Docks Company now owns practically all the London docks, except the Millwall and the Surrey Commercial, it is a gigantic organisation. Its warehouses cover several square miles and hold millions of pounds worth of goods. The quicksilver stock alone will often amount to more than a quarter of a million sterling in value, and iodine represented by tens of thousands of pounds rests regularly on the drug floors.

A DRUG AND GUM SHOW AT LONDON DOCKS.

Drugs and allied products, as may be guessed, occupy a mere fraction of the total accommodation. They are practically all brought to the London—that is, one of the "upper"—docks, and there stored away in three warehouses on the north side. But these three buildings, or, rather, these three divisions of one building, though relatively small, are 360 yards long, and each room is 48 ft. wide, so that nearly five acres of ground are covered with drugs, gums, etc. Needless to say, the catalogues of articles go well beyond the cover of the Pharmacopœia. Gums, using the term in its wide commercial sense, cover a large field. A year's entries of these would probably amount to between 1,500 and 2,000 tons, and total in value somewhere about £60,000. In this class one would include:—

Arabic,
Ammoniacum,
Acroides,
Animi,
Asafetida,
Benjamin,
Copal,
Dragon's Blood,
Damar,
Elemi,
Euphorbium,
Guaiacum,
Grass tree,
Gamboge,
Kowrie,
Kino,
Mastic,
Myrrh,
Olibanum,
Senegal,
Storax,
Sandarac,
Thus,
Tragacanth.

Drugs, considered apart, form an equally comprehensive list; everyone of the following items comes frequently or occasionally into the warehouse:—

Aloes,
Aniseed,
Areca nuts,
Argol,
Asphaltum,
Annatto seed,
Alkanet root,
Buchu leaves,
Borax,
Bayberry Bark,
Blue flag root,
Burdock root,
Camomile flowers,
Cranesbill herb,
Cantharides,
Cardamoms,
Cascara sagrada,
Cassia fistula,
Chiretta,
Cocculus indicus,
Colocynth,
Colombo root,
Croton seed,
Cuscus root,
Canella alba,
Camphor,
Cream of tartar,
Cubebs,
Castor seed,
Divi divi,
Fennel fruit,
Gentian root,
Galls,
Guaza,
Guinea grains,
Iodine,
Isinglass,
Kola Nuts,
Vermilion,
Nux Vomica,
Opium,
Orris root,
Orchella weed,
Patchouli leaf,
Quinine,
Quassia,
Quicksilver,
Rosemary leaves,
Sassafras root,
Senna,
Squills,
Shellac, button lac,
Seed lac,
Sandalwood,
Safflowers,
Saffron,
Turmeric,
Tartaric acid,
Valerian root.

A WAREHOUSE OF BALES OF DRUGS, LONDON DOCKS.

Of these cardamoms, iodine, isinglass, and quicksilver form the chief value. The first-named is small in bulk; the imports probably do not exceed 100 tons, yet their value would work out at £20,000 or £30,000. Isinglass is a bigger item; the imports are some five times larger and the value nearly £150,000.

Essential oils naturally form a small volume and weight, something less than fifty tons a year being entered, but the value will be £70,000 or £80,000. In this would be

Aniseed,
Bergamot,
Cinnamon,
Citronella,
Cajaputa,
Croton,
Clove,
Cassia,
Eucalyptus,
Lemon grass,
Wintergreen.
Mace,
Nutmeg,
Peppermint,
Rose,
Sassafras,

Bark is stored in a separate building, not forming part of the drug warehouses. Here cinchona and cinnamon quills are brought together, and some fine packages of the latter appear in the picture of this floor.

The working of these items is an important part of their history on their way to the consumer. From the import steamer, generally lying in the lower docks, goods are brought up here by rail or lighter and transferred by cranes into the warehouse. They may then be simply stored until sold and despatched to other parts of the country or abroad, or they may be worked, that is, treated so as to equalise or grade the qualities. When this has to be done the contents of packages are emptied on to the floor, the packages themselves tared, the contents sorted or mixed as required, and then returned to the cases, after which the gross weight is ascertained.

The Docks.

We cannot devote more than a few words in these articles to a general description of the docks, but these few words seem necessary. The docks now existing in the Port of London are the following:—London Docks, St. Katherine Dock, West India Dock, East India Dock, South-West India Dock, Victoria Docks, Albert Dock, Tilbury Dock, Surrey Commercial Docks, Millwall Docks, Limehouse Docks, Brentford Docks, Chelsea Docks, Poplar Dock, Deptford Dock.

Until the end of the eighteenth century there were practically no wet docks in the port, and imports were discharged or transshipped in the river. Now there are three general practices in vogue. Goods such as we have to consider come into the docks, and are (1) landed on the quay and warehoused or delivered to carrier or consignee by the dock company, (2) landed on the quay and delivered to lighters, (3) delivered overside the steamer to lighters. In the second and third cases the goods are afterwards conveyed to warehouses not under the control of the dock companies, or to other steamers which carry them to fresh ports. Between six and seven million tons of goods enter the docks of the London and India Dock Co. in a year, and of this quantity only between one and two million tons pass over the quay of the dock company. The rest is dealt with in one of the other ways mentioned.

CINCHONA AND CINNAMON BARK AT LONDON DOCKS.

We have now passed from produce auctions to produce warehouses, and in mentioning the contents of the latter have met with many things which are not offered at auctions. In the first of these articles the crude and manufactured or semi-manufactured products which come in this class were divided from auction merchandise. The latter, of course, is disposed of privately, as well as publicly, but business in the former class is altogether conducted without the aid of auctions. Nevertheless it has its market centres for all that, and, therefore, these must be indicated. To begin with:—

The Royal Exchange.

This institution has its counterpart in all the leading European centres of commerce. In London, however, the building which serves the purpose of a general meeting place for commercial men cannot be said to reflect the character of the capital in the same way as do the bourses of the Continent. The reason is simple. If you go on the Hamburg bourse you witness a thoroughly representative gathering of the financial and mercantile houses. Not only are all classes of merchants to be seen, but stockbrokers congregate there as well. On the London Exchange, however, there are only three trades represented at each afternoon's meeting, when from half-past three to four o'clock the oil, drug, and chemical trades associate. Other trades either have their special meeting room, or do not come together at all. As for financial men, they have, of course, their own Stock Exchange.

The Royal Exchange is practically on the extreme west of that part of the city occupied by the community interested in foreign produce, and by the shipowners and shipping agents who deal with this. West of the Exchange you meet with merchants of a different order. For the most part their trade is export, and it has to do with articles altogether outside the drug trade. You can easily divide and subdivide the city into quarters for the various trades. Hence it is that when 'Change meets or breaks up you will find that most of the *habitués* come from or depart towards the streets lying eastwards. There are the oil merchants and brokers, with whom it was an object at one time to be located near the "Baltic," in Threadneedle Street. They collect at the western end of the space under the roof of the Exchange. The heavy chemical trade have their offices near Mincing Lane. Their chosen spot on 'Change is the fringe under the north gallery. The wholesale druggists, drug importers, and drug brokers, the manufacturers of fine chemicals, and the agents for these spread themselves over the eastern end of the Royal Exchange. For half an hour each day of the week, excepting, of course, holidays, representatives of these trades congregate, exchange opinions, interchange experiences, and effect a little business. The last-named is the least important now of the facilities afforded by 'Change assemblies. Actual purchases and sales are of comparatively little moment. The utility of the half-hour's meeting becomes more and more its convenience for a rapid acquisition of news.

THE NEW BALTIC MERCANTILE AND SHIPPING EXCHANGE.

After 'Change most of those who leave proceed to their offices but the oil trade generally turns its steps towards

The Baltic.

The building now bearing this name has only been recently erected. It succeeds a famous house in Threadneedle Street, where for many years the oil, seed, grain, and tallow trades met. When this old building was demolished a large room in the Great Eastern Hotel was used for a time. Meanwhile the fine building which is illustrated in this issue was being put up, and now the trades mentioned are represented by a edifice which is not surpassed by any similar building in Europe. The possession of such premises has been materially brought to pass by amalgamation of purely Baltic interests with those of the London Shipping Exchange. In consequence, the building known by the latter name, which was situated in Billiter Street, has been abandoned, and, under the one roof, the shipping trade is represented along with those mentioned above.

The new Baltic Mercantile and Shipping Exchange was opened as recently as April 21 this year. It covers an area of close upon an acre, and possesses noble architectural proportions. Its extreme width is 136 feet, and the height 30 feet. The main front is in St. Mary Axe, and it has a second entrance in Bury Street. Postal and telegraphic offices are furnished in the building for members' use, and dining, luncheon, and smoking rooms are also added. Auction and arbitration rooms have been provided, although the former are not regularly needed. The members' meeting room itself is probably the finest floor space to be found in the City of London; it covers nearly 20,000 superficial feet. Here it is that the important trade of London in fixed oils is centred.

The Metal Exchange.

To this merely a passing reference is needed. The only item in its scope which forms a solid connecting link with the drug trades is quicksilver. For the rest it has to do with larger products, such as copper, iron, tin, etc. Its situation seems curious, as it flanks one of the entrances to the Leadenhall Meat Market.

Before concluding these lines on market meeting places in London it should be repeated that the Commercial Sale Rooms, which have been mentioned several times as the home of the auctions, are also the daily meeting place for produce merchants and brokers. As an instrument in the sale of crude drugs, spices, gums, etc., etc., they are much more important than the Royal Exchange. The members' room, where *ex-cathedrâ* transactions are negotiated, has been illustrated. It may be chiefly remembered as the place where the speculation in quinine, which on occasion has been noteworthy, is effected. The rest of the building is mainly taken up by the large auction rooms, of which there are nearly a dozen—large, airy, and well-lighted.

RELATIVE STRENGTHS OF THE DILUTE ACIDS AND ALKALINE SOLUTIONS OF THE BRITISH PHARMACOPŒIA.*

BY R. C. COWLEY AND J. P. CATFORD.

The formulæ for preparing the dilute mineral acids are relics of the time when grain weights and grain measures were used for volumetric determinations, and 6 fl. drachms were ordered to contain exactly the molecular weight in grains of HCl (36·5) and of HNO_3 (63), and half the molecular weight in grains of sulphuric and phosphoric acids, *i.e.*, 49 grains in each case. Thus, equal volumes of these four are equivalent in saturating power, a fact that is obscured by the 1898 Pharmacopœia giving the equivalents of equal weights instead of equal volumes. Why the 6 fl. drachms were fixed upon was not apparent even in the previous Pharmacopœia.

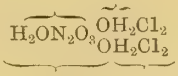
None of the acids or alkaline solutions were adjusted to the same or any simple proportional strength, so that among a dozen of them eight are irregular. This might be easily corrected and adjusted as follows:—

Acid.	B.P., 1898, C.c. Normal Solution.	Suggested 10 C.c. Should be Equivalent to
Acetic. dil.	10 = 7.16	7·5 of a normal sol.
Hydrobrom. dil.	10 = 13·4	15·0 C.c.
Hydrochlor. dil.	10 = 30·46	
Nitro-hydrochlor. dil.	10 = 26·75	
Nitric dil.	10 = 30·45	30·0 C.c. (or 3 N)
Phosphoric. dil.		
Sulphuric. dil.	10 = 30·63	
Liq. ammoniæ	10 = 56·58	50·0 C.c. (5 N)
Liq. calcis sacch.	10 = 6·64	5·0 C.c. (N/2)
Liq. potassæ	10 = 11·1	10·0 C.c. (normal)

One fluid drachm liquor potassæ would equal 2 fl. drachms of liquor calcis saccharatus, 80 minims of acid. acetic. dil., 40 minims of acid. hydrobrom. dil., and 20 of acid. hydrochlor. dil., acid. nitric dil., acid. sulphuric. dil., and acid. phosphoric. dil., and 12 minims of liquor ammoniæ. Since they have all to conform to a volumetric test they should be ordered to be made like any other volumetric standard solution, *i.e.*, rather stronger than is required, then titrated to find how much additional water is required.

The formulæ clung to up to now may be idealistic, but are not practically sound. Volatile substances in concentrated solution, such as ammonia and acetic acid, and hygroscopic ones, like oil of vitriol, are inevitably weaker each time that some is removed from a winchester. Diluted nitro-hydrochloric acid seems to require considering apart from the other diluted mineral acids, since it is defined as containing nitrous acid and free chlorine, in addition to the original ingredients. Such a paradoxical assertion from a less authoritative source might provoke scepticism. As it is, one may wonder whether the authors mean it in an ionic sense, and if they had ventured to give the compound a chemical formula, would it have been something as follows:—

As defined.



$$\underbrace{\overbrace{H_2ON_2O_3}\begin{matrix}\overbrace{O}\overbrace{H_2}Cl_2\\ OH_2Cl_2\end{matrix}}$$

Volumetrically.

If so, this strikes a rich vein of new remedies. Why not add to the list a "Chlorinated Sulphurous Acid" of formula $\underbrace{\overbrace{H_2OSO_2}}\underbrace{\overbrace{OH_2Cl_2}}$! And again, that pseudo-scientific preparation, spirit of nitrous ether, whose fickle character is perennially getting honest tradespeople into trouble, would not a judicious dose of aqua chlori fix it up as a staid, reliable preparation, with an unvarying volumetric standard? For it is noteworthy that the volumetric test for nitro-hydrochloric acid requires the full original quantities of nitric and hydrochloric acids. Calculated from the B.P. data, 4 Gm. should require 9·97 C.c. N/1 soda for the undecomposed acids, and the mixture is required to take "about 10 C.c." Where does the additional chlorine, etc., come from? And how are they proved to be there? The B.P. is discreetly silent in this respect. In the aqua regia of the alchemists the free chlorine asserted itself by its behaviour towards metallic gold, but the modern attenuated substitute yielded no such evidence to Dr. Tilden (B.P. 1868). This may be accounted for from the ionic point of view. The aqueous solution contains all the gaseous products in solution, and although of course chlorine combines with gold, yet equally, of course, nitrous acid reduces gold chloride to metal again, result *in statu quo ante*.

Until tests can be given furnishing positive proof, it would be better to drop the questionable definition, and, if medical prescribers will have it, let it be brought into line with the other dilute mineral acids of 3N strength, so that 1 fl. drachm of it would be equivalent to 3 fl. drachms of

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* Read before the Liverpool Chemists' Association, October 22, 1903.

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normal liquor potassæ, or 10 C.c. of it would be equivalent to 3 Gm. of potassium bicarbonate. Three years since Dr. Attfield in his "Digest" suggested "an investigation of the rate at which the nitric and hydrochloric acids in the presence of water attack each other from day to day." As no one appears to have responded, we have commenced it, as regards the acidimetric test, with standard alkali, and if any noteworthy results are obtained they will be communicated at the next meeting of this Association.

NOTES ON THE MEDICINE STAMP DUTY ACTS.*

BY ANTHONY S. BUCK.

What should be the action of chemists with reference to the present reading of the so-called Patent Medicine Stamp Acts?

The Acts which govern the stamping of medicines have been passed in various years, commencing with 1783, and the last in 1891. I do not propose to go through these various Acts in detail, as the purport of these few notes is simply to commence a discussion on the patent medicine law as it exists in 1903.

In reading these Acts over we must see at a glance that the Inland Revenue authorities are only putting into force the powers which they have possessed for between ninety and 100 years; that is, from the passing of the 1812 Act, with its amendments.

Until last year the Inland Revenue authorities have not been too hard upon chemists, and have enforced the Act in a most reasonable light; but, all the same, we have been in a constant state of excitment about the liability of labels, all the time having a fair idea of what the law was at that particular date, and how much of it was likely to be enforced by those in power. Perhaps there were words used describing the medicine which, although it was not otherwise liable, brought it within the law, but these occurred so seldom that unless we got into trouble over them we only gave them passing notice. I refer to such words as "celebrated," "famous," "infallible," etc.

If we had been content to leave well alone, no doubt the minor points of the Act which have been in abeyance for so long would still have been allowed to remain in much the same condition. Then Mr. Glyn-Jones's test-case, where it was attempted to obtain as a matter of right the suppression of these minor points, came to the front, and very likely to knowledge of this friendly action coming on had the effect of awakening the officials to the rights which they had under the Acts, and which, if enforced, would prove to be a very easy way in which to augment the finances of the country, and also add considerably to the returns of the department. Many of us have cause to know that both members of the Customs and Inland Revenue departments are good business men, and look well after their employers' interests.

The amount collected from patent medicine stamps in recent years has not been large. When first this tax was collected it was estimated to produce £15,000. In 1860 it produced a little over £40,000, and last year £300,000. Now, after putting on one side a proportion for our own country's large manufacturers, as Beecham, Elliman, Owbridge, Kaye, etc., and a second moiety for the proprietaries which are dumped into this country by our American cousins, I think we shall come to the conclusion that the amount formerly paid by the English chemist, which could generally be in turn collected from the self-dosing British public, has only been a small one. My point here is that in many cases it is advisable to stamp and then push the medicine for all it is worth, as the amount of tax can be recovered from the purchasers.

And just one word on another point; we have those amongst us who want exemption from jury service as a right, and who occasionally write to the papers on this matter. My idea is, let well alone, or worse may follow, as in the quinine case.

Now to revert to the subject. Chemists are most affected by this stamping of medicines, although others, such as confectioners, and proprietors of shops where everything is sold, come under this branch of the law.

In the case of chemists, the Board have seen fit to make very considerable concessions if the chemists will only take a little trouble, and see that small details are attended to. In the case of confectioners, stores, and unqualified manufacturers of medicines for the human body, no concession is allowed, but these persons can always get off by paying, or —I am sorry to say it—by evading the Act, as has been done in Yorkshire recently, by sending the pills in paper, unlabelled, and giving empty labelled boxes. This rather reminds me of an incident which occurred during a visit I paid to the Giants' Causeway in 1880. When the tide receded a fresh water spring was left free, and at low tide an old man used to sit at this well, his business being to sell the water and bestow the whiskey.

Perhaps you will remember how, during last winter, our local papers had an advertisement for throat pastilles put forward as a cure for certain chest troubles, and without stamp. These were made and advertised by a firm of toffee makers, and although you and other chemists had to stamp your special cough lozenges, these, I take it, could be supplied as curative substances, and by any confectioner, without patent medicine licence, stamp, or knowledge.

Gentlemen, will the kind attention of the Board be an advantage in this case or not? I say it will, although we must not lose sight of the possibility of these people stamping their goods, thus gaining respectability for them in the eyes of the public, and pushing them tenfold more than in the previous winter.

Now, we have it from the Board, as expressed in their letter of September 29 this year, that they cannot make a distinction between 1d. and 2d. articles and those of larger amounts. I take it that we do not wish them to do so. Our Vice-President, Mr. T. F. Abraham, on a former occasion, suggested a sliding scale for stamps, according to the value of the medicine below 1s.—say, ½d. on 1d. or 2d. I have also seen this suggested by many writers during the last few days. Even if the Inland Revenue people would have accepted such an arrangement it would have been far from satisfactory. We should have been taxing ourselves, whereas by laying low they have condescended to allow us to affix a small label to each package, which will not be so much trouble to place as the Government stamp, and instead of their costing £1 0s. 10d. per 1,000, we shall no doubt be able to obtain the conceded labels for the odd 10d., or even less.

My original note on this label was to the effect that we should have small labels printed, as "P.J. Formulary," or "P.J. Recipes," or "C. and D. Diary," etc., and fill in the number of the form in ink, which would no doubt have been allowable. This arrangement would have been useful for men who had a small sale in penny lines, and those who had large sales would have been well able to pay for the printed labels with numbers. Now all this has been knocked on the head by the latest and most valuable concession of all, which will tend to bring our position to much as it was before, and by which we shall not be expected to disclose the actual formula that the medicine is prepared from, and our trade secrets can be kept secure. For this latest we have to thank the Editor of the *Pharmaceutical Journal*, who brought the point before the Board, and they have agreed that we may simply give the title of the work from when the formula is taken. This decision really places us in the position we had before the Ransom *v.* Sanguinetti case. This case induced the Board to take the view that liver pills and cough mixture were liable to duty. The wording of the Inland Revenue's latest note (from *Pharmaceutical Journal*, October 17), is:—"As regards the case in which several different formulæ for a preparation appear in a recognised book under the same name, the Board will not insist on a disclosure of the precise formula from which the preparation is made up." In 1902 instructions were issued to Inland Revenue officers which at this time will be found most interesting. These instructions were the outcome of a visit paid to the commissioners by Mr. Cross and Mr. Barclay in 1886, and it was at this time that the authorities agreed to give information on the point as to whether labels were liable or not. This was a very valuable offer, as the marking of these labels must have deprived the Revenue of very large amounts; but, like most good things, in later years it came to be abused, and now it has been finally withdrawn. I am not surprised at this, as the proceedings must have entailed an enormous amount of work, and at best it was only a case of helping the medicine men to get off without paying.

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* Read before the Liverpool Chemists' Association, October 22, 1903.

Now, I think this guide to the officers was very fair and considerate, and contained instructions which to the average chemist would be all that he would require. I can quite see that to those men who have to compete with the stores, and who follow the lines of these go-ahead or up-to-date men, that greater attention will have to be paid to side issues.

We first have the four reasons for liability to stamp duty:—First, subject of a patent; second, prepared only by ——; third, secret preparation; fourth, any printed matter referring to the cure, prevention, or relief.

Next it refers to exemption of pure drugs and confectionery, etc., and the Lamplough case, where health salts and like preparations were exempt. I am sorry to find that the various effervescent granules do not come under this heading unless they simply have alkaline salts added. I think these should be free, as I take it there is now no secret in the preparation, as all leading chemists prepare these on the same lines, and all wholesale houses prepare them of the same strength for the convenience of those who have not a good demand. The end of this clause speaks of those to whom the exemption applies. It says: "Chemists, etc., or a person holding an Excise Patent Medicine licence." Are we to understand from this that the right to sell pure drugs unstamped may be purchased for the paltry annual payment of 5s.? It seems to me that this is so, and I consider that the unqualified is let down very lightly.

Next clause, things to be burnt and fumes inhaled, although recommended, not liable. Toilet articles, unless specially recommended, are not liable.

Then we find that an old handbill of ten or more years before may render a medicine liable, even if all labels and present wrappers have been altered, and every care taken to keep the medicine outside the scope of the law.

The last clause but one seems to me to be one which should never have been altered; but from the Board's letter of September 29, we find that this has occurred. The wording of this clause is:—"The Board recognise the necessity that exists for giving to a preparation such a designation or name as shall distinguish it from other medicines, and they do not attach any further meaning to such words as cough mixture, liver pills, corn paint, etc. Labels so worded must contain no other reference to an ailment."

The finishing touch to these general observations is in these words:—"The Board trust that the foregoing observations will enable their officers to restrict their purchases of medicines to cases in which there has been an actual infringement of the law."

Now, gentlemen, can you conceive a more generously-worded order delivered to detectives, treating of the way in which they shall attempt to trap the chemists? Nothing said about slight slips—only actual infringements; otherwise, clear attempts to defraud the Revenue.

The next point I want to bring forward is in connection with those medicines labelled "for dispensing purposes only." These are mostly foreign, but by courtesy we are allowed also to have British medicines supplied unstamped for this purpose. I have rarely been more surprised than when I found out that if I took, say, 4 oz. of Hommel's Hæmatogen from a stamped original bottle I was not allowed to dispense it neat without putting a medicine stamp on it, according to value, although it had paid duty on the original bottle. I can quite understand that there would be a difficulty in proving whether the 4 oz. was taken from a stamped or unstamped bottle, as in most pharmacies a bottle of each would be kept behind the dispensing counter, and in many cases the scientific work be performed behind a screen.

I cannot distinguish between a packet of Steedman's powders being allowed, after once stamping, to be sold singly, and a portion of Angier's Emulsion or Aletris Cordial from a duty-paid package not allowable without restamping.

Some of our local M.D.'s would be slightly annoyed if, when next ordering lactopeptin, gr. x., send twelve powders, this was dispensed with a threepenny medicine stamp on the box. Would not it give the profession away, and perhaps lead to the chemist losing the doctor and patient as clients? We cannot, as things are now, afford to raise petty annoyance in dispensing, although this treatment would very likely have the effect of curing some practitioners of the habit of prescribing ready-made goods. The better plan would be to mention this fact to our supporters, and ask them to kindly add some harmless ingredient when prescribing these lines.

A useful point to remember in selling our own goods will be that a verbal recommendation does not bring these within the law, when a verbal claim to private formulæ or the only place where you can get them, would do so. You will all be aware of the Pharmaceutical Society's offer to include any private formulæ sent to them by chemists in the first edition of the 'P. J. Recipes.' This is an arrangement which will prove most convenient for those who have a number of small lines, but I cannot help thinking that those who have 1s. or larger goods should consider whether it will not be more to their advantage to stamp them, and especially if they are worth pushing. At my establishment we have few proprietary medicines, as I have always considered that if the doctors help us it is to our advantage to play into their hands, and not have the counter covered with our own goods for the cure of almost every ailment known to the human race.

Some few weeks back Mr. Bremridge wrote asking me to mention the Society's publication to chemists, requesting them to send up formulæ. I have not done so until now, as this is the first meeting since the letter arrived. Many, no doubt, have sent forms from Liverpool, but I think we should consider to-night if it be advisable to send any formulæ from the Association as a body, or leave it to individuals. On looking over the recipes which have been or soon will be published, we shall no doubt find formulæ so near to those medicines we supply that it would be allowable to claim the published ones as our own, and especially as the full list of ingredients need not be given, but only the main ones.

As to the way in which chemists are affected, I cannot see that the present reading will make much difference. In the case of herbalists, I take it that most of their goods are simples, and will be exempt as such; but some of the latters' penny medicines, which are often supplied to them on cards by wholesale druggists, will give trouble. To me, the increased stringency seems to have been directed more to outsiders than to ourselves.

In conclusion, as these notes have taken up more of the time of the meeting than I had any right to, I would enjoin my fellow-chemists to keep as much within the law as possible, attend to the small details which are required of them, and be truly thankful for the concessions which the Board have granted to pharmacy.

THE 'PHARMACEUTICAL JOURNAL FORMULARY.'

BY J. F. BROWN (DOVER).

The first impression received from its perusal is that of its kaleidoscopic character; it presents almost endless permutations of familiar materials. And very familiar most of them are. Is it possible to sift the chaff so as to find a few grains of therapeutic lore, or by some attempt at classification, to learn the proportions in which staple drugs are actually used; perhaps to modify the accepted views on incompatibility by examples of successful exhibition in spite of them; or in fine to learn anything which this *omnium gatherum* of recipes has to teach?

Taking those published up to No. 600 as a basis, this is what I have noted. The importance of a regular fulfilment of the functions of the bowels is strikingly brought out. But it would be a mistake to lump together all those who habitually take a liver pill with the "sick, lame, or distempered" persons who are properly the objects of medical attendance. The preservation of health might be equally well served in most cases by some alteration of diet or of daily habits; but it is human to seek the line of least resistance; to swallow a pill is less trouble than to do anything else, so the custom is imperceptibly erected into a law.

Out of a formidable list of eighty-five aperient pills, tablets, or powders, no less than seventy-four contain aloes, while podophyllin is present in thirty; the mercurial compounds number thirty-two, of which seventeen contain calomel and fifteen blue pill. Out of the total 600 aloes is present in 114, and easily heads the list of drugs most frequently used. The aperient mixtures are only four, one with rhubarb, one the familiar mist. alba, or hospital house mixture, the other two variants upon the elixir of cascara. Seven emulsions—one of petroleum, the others of cod-liver oil—do not call for remark. A group of specifics—two formulæ for anæmia pills, of iron and arsenic, a compound damiana pill, a pill of fucus vesiculosus for corpulence, and one of sulphurated calcium for the complexion, may be briefly noted.

Returning to the aperients, 324 and 325. Why podophyllin with compound extract of colocynth should be labelled liver, and, with compound rhubarb pill, cathartic, is rather a puzzle. Also I note, with regret, the persistence in styling a pill as 321, containing castor oil soap, by the much-abused name of castor oil pills. The confounding of things that differ is the seed of much confusion and ignorance. In twenty-seven of the pills, etc., the green extract of hyoscyamus is employed as an adjuvant.

Cough remedies number in all seventy-two, of which fifty-five contain ipecacuanha, fifty squills, and thirty-two an opiate, while tolu, benzoin, and wild cherry are all represented. The use in one case of tinct. camph. co. sine opio is regrettable. The balm of Gilead, blood root, and white pine of No. 271 seems to betray an American source. In 270, the pint of linseed mucilage to a hundred-weight of sugar has a grotesque appearance; one wonders how much of the six pounds of chloroform survives the ordeal of lozenge-making. The term chlorodyne is not justly applied to a flavoured compound of chloroform, devoid of any anodyne properties, and, in fact, the popularity of this confection is a convincing tribute to the power of the great god Sham.

The class of lotions numbers eleven, made up of two for the eyes, viz., a simple boric acid solution and one with cocaine; three specially for the nipples, and half-a-dozen which may be called general utility compounds. Sixteen liniments comprise representatives of the acetic turpentine egg emulsion, also of that in which, by the use, in addition, of ammonia, some solution of ammonium acetate is formed; and of the types of Bow's Liniment and Roche's Embrocation.

Blood purifiers number twenty-one, of which fourteen are mixtures, five pills and pellets, one species, and one salts. Fifteen of these contain sarsaparilla, which may be regarded as the typical remedy; in eleven of the mixtures it is associated with potassium iodide, and in one with the bromide. One of the remaining mixtures is a simple aperient, one a quinine and iron tonic.

Six chlorodynes are included in the list, of which one—camphorodyne—is sharply differentiated both in name and composition. It contains two grains of morphia to the fluid ounce; Nos. 70 and 71 contain each four grains, and 581 and 582 2 2/5 and 4 4/5 grains respectively. Approximately, four grains of morphine to the ounce seems the standard. One only contains atropine sulphate. It is much to be regretted that a compound like 498, a flavoured syrup of chloroform, should be sold under the same name as is applied to preparations of morphine of considerable, if not dangerous, strength. As to carminatives, the term gripe water seems to connote a preparation containing an alkaline bromide, as infants' preservative does the presence of magnesium carbonate, in both cases with aromatics. It would be interesting to learn whether the undoubtedly extensive administration of the bromides to young children does actually produce that enfeebling of the body and clouding of the mind which are described as their characteristic symptoms. Formula 389 contains six minims of tincture of opium to the fluid ounce, equal in opium strength to 100 minims of paregoric elixir, of which No. 539 contains one-tenth its volume, *i.e.*, forty-eight minims in each fluid ounce; while Dr. Thatcher's—587—has one in eight. Four drops of laudanum have proved to be a fatal dose to an infant, and unpleasant consequences have followed on giving two drops, so that these compounds cannot be regarded with entire approval.

For corns, eleven formulæ provide relief. Eight are solvents, two plasters, and an ointment. With entire unanimity they contain salicylic acid, so that one pities those suffering from corns before its discovery, and in all the solvents the vehicle is collodion.

Chilblains are catered for by seven liniments, two lotions, and an ointment. Their main features are either stimulation with capsicum cantharides and the like, or the astringent and sedative action of lead and opium. One is sulphurous acid, pure and simple, and one—443—is identical with the traumaticine which was introduced, I think, from Vienna. Two catarrh snuffs, one Ferrier's the other more complex, form a small class by themselves.

Digestives are strong in number—thirty-nine, of which twenty-two are solids and seventeen liquids. On one of the latter—523—apparently following on the lines of the well-known Siegel's, one would like to ask what therapeutic efficacy has the powdered borax. Another, 160, is bald in its simplicity; it is merely vinum pepsinæ. Eleven of the mixtures contain bismuth and ten pepsin, but those which order pepsin in acid solution, *primâ facie* the proper physiological course, are in a minority. In 379 the terrors of effervescence between the bismuth subnitrate and sodium bicarbonate are set at naught; as also in 586, the solution of bismuth with ammonium citrate is ordered with hydrochloric acid—possibly, a milk of bismuth is intended. Of the solid forms, eight contain pepsin, the only example of powders contains oxalate of cerium, and the majority of the pills and tablets contain such benign and approved remedies as rhubarb, ginger, chamomile, and the like.

For diarrhœa a choice is offered between twenty-five formulæ, of which only two are for solids; seventeen of these contain chalk and twenty-two opiates; astringents like rhatany and catechu are largely used with aromatics. There is only one ordering sulphuric acid, which I remember years ago was a popular remedy; and in 553 pepsin is called for, I suppose on the assumption that some undigested food caused the diarrhœa. Eye ointments are but scanty in number, one of the yellow oxide of mercury, one containing the sulphate and oleate of zinc. Considering the frequent occurrence both of eczema and ringworm, the list seems meagre; for the latter, one ointment—mercurial; for the former two ointments, a pigment and two pastes (Lassar's). But the latter ointments are polypharmic in their number of ingredients. Ear drops, again, are only two in number, an oily solution of menthol and one containing camphor, chloral hydrate, and phenol in castor oil.

Fever remedies are nine in number, one in solid form. Quinine, acetanilide, gelsemium with aperients. One of the mixtures also contains quinine, the others saline diaphoretics.

Foot powders are three; two contain boric, one salicylic. A well-defined class is that of female pills, thirteen in number. All contain aloes; all but two iron; one—391—has the dioxide of manganese added.

Pulegium is the most frequent adjuvant.

Out of fifteen gout and rheumatic remedies, three only are mixtures, and one of these appears to be an escape—in botanical language—from another class, being potassium iodide and sarsa merely; the other two contain sodium salicylate and cimicifuga. Two are confections, like the "Chelsea Pensioner," and colchicum—regarded as a specific—is found in seven out of the ten pills.

A class of headache powders—nine—is all but unanimous. Eight of them contain caffeine, in the greater number combined with phenacetin. Itch has only two ointments given; it is probably dying out. Bearing in mind the extensive prevalence of influenza of late years, it is strange that only seven formulæ are given for it. Simple diaphoretics, quinine, and phenazonum, with sodium salicylate, are all represented.

It is noteworthy that not a single formula is included for gonorrhœa or like complaints. Kidney troubles have one mixture and eight pills allotted to them—the mixture, saline diuretic, No. 210; the pills containing in some cases as many as eight or nine ingredients. 515 contains half its weight of potassium nitrate, and must, I think, be troublesome to keep. The three liver mixtures do not present any special features.

In striking contrast to the neglected parasite which causes itch, the remedies for lice are no less than eleven—five in watery, six in fatty or oily vehicles. The complaining parent almost invariably accounts for the trouble by the statement: "The children go to school." Has the stimulus of popular education given to the interior anything to do with this undesirable activity on the exterior of the head. Stavesacre and quassia are the more favoured remedies. The increase of this trouble seems to me to date from the time when it became fashionable to say proudly: "I put nothing but water upon my head." Seeing that oils and fats are destructive to many parasites, it is just possible that our forefathers, in their extensive use of hair oil and bear's grease, were wiser than they knew.

An important series is that devoted to neuralgia, fifty-one in number, or, including as a sub-class nervines, fifty-three, of which more than half—twenty-nine—contain quinine. Brown-Sequard's pill is given twice—508 and 301, the difference being that the latter contains extract of opium. No. 549 is described as powders or tablets, but it is difficult to understand how 2¾ fluid ounces of tincture of gelsemium can be combined with five ounces sodium bromide, two ounces acetanilide, and half-an-ounce of caffeine to form a workable powder.

Pills are the favourite form, of which there are twenty-six. Mixtures nnmber fourteen, and powders eleven. Phosphorus was at one time highly thought of as a specific for this malady, but only two formulæ are given for free phosphorus and two the phosphide of zinc. Seven of the formulæ contain gelsemium.

Nine ointments may be briefly dismissed. Oxide of zinc and phenol for burns, and mercurials for ringworm follow orthodox lines. Of the four distinguished as healing, two contain boric, one phenol and one—a survival of antique pharmacy—fenugreek and marshmallow.

Children's powders for teething, etc., are of importance to the family chemist, but the eleven formulæ given for them do not present any striking feature. Three are non-mercurial, and contain the compound liquorice powder. Seven of the eleven contain calomel.

For piles, one internal and seven local remedies are provided, six of which are ointments, tannin with opium or morphia being the leading ingredients.

Pertussis is but sparsely provided for. The traditional Lobb's Mixture, potassium carbonate and cochineal, the rationale of which I could never clearly make out, and two variants upon Roche's Embrocation. Seven mixtures form a class of stomachics, one of which is obviously modelled upon the once famous Hop bitters. Half their number contain rhubarb, and the aromatic spirit of ammonia is an ingredient of the like number. For throat troubles are ten formulæ, three being for gargles—all with potassium chlorate; a linctus, two pigments, a confection, and three lozenges. The confection prescribes the internal use of olive oil, which is noteworthy. The pigment—132—orders the solution of sixty grains of menthol in six fluid drachms of glycerin, a vehicle in which Martindale said it was insoluble; the other pigment is Mandl's. Twenty-two tonics, equally divided between solids and liquids, do not call for any remark. Toothache tinctures, seventeen in number, form a well-defined class. Eleven of them contain camphor, seven chloroform, while chloral and oil of cloves are well represented.

For worms a choice of nine remedies is offered, principally as powders, cakes, or lozenges. Of the two mixtures, one calls for malefern for tapeworm, the other contains santonin and senna. Santonin is present in seven altogether, calomel in three. The remaining thirty or forty formulæ are chiefly for toilet articles. In 467, carbolic tooth powder is ordered to be prepared with precipitated chalk, which is generally held to impair its efficacy.

New Adulterant of Otto of Rose.—It is stated that a mixture of salol and antipyrine is employed to give a fictitious melting-point of 20° C. to oil of geranium; and that the mixture is largely used to sophisticate otto of rose.—*Journ. Pharm. d'Anvers*, **59**, 203.

ASH-YIELD OF DRUGS AS TESTS OF PURITY.*

Table showing percentages of ash yielded by drugs of good quality, and by powders obtained from the grinding of drugs of the same character in the firm's own mills.

	Whole Drug.	Powder.
Acaciæ gummi	2·74	2·99
	2·80	3·18
	2·75	
Aconiti radix (Anglic)	1·96	
(Exotic)	4·51	7·65
Aloe Barbadensis	1·73	1·51
	1·17	2·58
Aloe Socotrina	2·08	2·09
	0·77	
Aloe Uganda	0·59	
Ammoniacum	1·99	
Anethi fructus	7·73	
Anisi fructus	7·70	8·30
		10 78
Anthemidis flores	5·72	6·28
	5·78	
	5·54	
	5·54	
Araroba	2·53	
Arnicæ rhizoma	7·08	
Aurantii cortex	5·17	
	4·54	
	6·06	
Belladonnæ folia	12·82	10·85
Belladonnæ radix	9·26	5·29
Benzoinum	0·92	
Balsamum tolutanum	0·40	
	0·36	
	0·34	
	0·39	
Buchu folia	4·71	4·64
Calumbæ radix	4·72	6·97
Cambogia	0·38	1·81
Cannabis indica......	15·56	14·92
Cantharis	5·08	7·63
Capsici fructus	5·37	6·06
Cardamomi fructus ..	4·50	
	5·12	
Cardamomi semina ..	7·53	
	3·49	
	3·70	
Carui fructus	6·20	6·74
	5·76	6·20
	5·49	
Caryophyllum	4·62	4·66
	5·37	
	6·01	
Cascara sagrada	5·51	
	6·09	
Cascarilla	8·27	
Cassiæ pulpa	2·57	
Catechu	3·38	5·34
Chirata	4·01	3·09
Chrysarobinum	0·11	
Cimicifugæ rhizoma ..	6·21	
Cinchonæ rubræ cortex	1·36	5·20
Cinnamomi cortex....	4·94	4·75
	4·17	
Cocæ folia (Bolivian).	4·02	
(Peruvian)	8·09	
Coccus	3·41	9·49
Colchici cormus	1·85	2·51
Colchici semina	4·02	5·25
Colocynthidis pulpa..	12·00	
	10·10	
	12·40	
	11·40	
	11·20	
	11·70	
	11·70	
	11·20	
Conii folia............	15·14	
Conii fructus	5·53	
Coriandri fructus	4·06	
	4·93	
Cubebæ fructus	6·42	7·32
Cuspariæ cortex......	8·02	
Cusso	9·40	
Digitalis folia	11·21	9·39
Ergota................	3·19	3·25
	2·82	4·10
	2·92	2·69
	3·07	4·31
	3·70	3·14
Eucalypti gummi	0·17	
Euonymi cortex......	8·96	
Filix mas	3·27	
Fœniculi fructus	8·46	10·79
Galbanum	4·45	
Galla	1·76	1·75
Gelsemii radix........	1·57	
	1·79	
Gentianæ radix	2·43	4·53
	3·54	
Glycyrrhizæ radix	4·47‡	3·30
	4·85	
‡ Not decorticated.		
Glycyrrhizæ radix....	2·04	
	3·66	
Granati cortex........	5·99	
Guaiaci lignum	1·05	
Guaiaci resina	0·60	2·50
Hæmatoxyli lignum ..	1·58	
Hamamelidis cortex..	3·42	
Hamamelidis folia ..	5·54	
	4·32	
Hemidesmi radix	3·76	
Hydrastis rhizoma ..	4·35	
Hyoscyami folia (Exotic)	21·91	
(Anglic)	14·02	12·43
Ipecacuanhæ radix ..	2·38	2·23
	2·12	2·65
	2·45	2·03
	2·69	2·19
	2·38	3·38
		2·72
		2·59
		3·29
		2·55
		2·88
		2·49
Jaborandi folia	4·54	
	4 63	
	4·16	
	4·01	
Jalapa	4·31	3·78
	3·33	
	3·46	
	3·61	
	3·62	
Jalapæ resina	0·22	
Kino	0·80	
Krameriæ radix......	2·51	4·37
Laurocerasi folia†....	6·21	
Limonis cortex	3·66	
Lobelia	3·37	9·48
	4·68	
	3·84	
Lupulin	13·42	
Lupulus..............	6·90	
	7·46	
Mezerei cortex	3·09	
Myristica	1·91	2·46
	1·68	
Myrrha	2·58	5·82
	6·69	10 72
Nux vomica	1·13	2 45
Opium	3·77	7·18
† Dried.		
Opium	6·34	4·52
	3·61	
	2·77	
Papaveris capsulæ....	11·28	
	8·63	
Pareiræ radix	2·49	
Physostigmatis semina	3·11	
Pimenta..............	2·82	3·55
Piper nigrum	3·23	6·32
Podophylli rhizoma ..	3·16	
Pruni Virginianæ cortex	2·96	
Pterocarpi lignum....	1·52	
Pyrethri radix........	3·89	
Quassiæ lignum	2·51	
Quillaiæ cortex	7·99	8·19
Rhei radix............	4·93	8·80
	7·27	10·01
		10·69
Rhei radix (Anglic) ..	7·19	7·85
Rosæ Gallicæ petala..	1·84	
	3·11	
Sambuci flores	10·02	
Sarsæ radix..........	6·02	
(Mexican)	10·46	
(Honduras)	5·75	
(Lima)	5·12	
Sassafras radix	0·77	
Scammoniæ radix....	9·12	
Scammonium	3·42	
Scilla	2·08	2·51
Scoparii cacumina ..	2·26	
Senegæ radix	4·26	4·24
Senna Alexandrina ..	7·88	8·61
	8·55	
	8·15	
Senna Indica	8·35	9·45
	7·33	
	8·67	
	6·82	
	7·71	
Serpentariæ rhizoma..	5·76	10·13
Sinapis albæ semina..	4·05	4·32
Sinapis nigræ semini..	4·31	4·32
Staphisagriæ semina ..	13·26	11·69
Stramonii folia	20·18	22·02
	19·31	
	13·97	
Stramonii semina	2·44	
Strophanthi semina ..	3·78	
Sumbul radix	6·09	
Tamarindus	2·42	
Taraxaci radix*......	3·20	
Tragacantha	1·98	2·07
	1·73	2·21
	3·24	
Uvæ Ursi folia	2·45	
Valerianæ rhizoma ..	11·61	17·44
	11·02	
Zingiber	4·11	3·02
	2·43	3·78
	2·37	5·23
	2·57	6·27
	2·50	4·03
	4·89*	591
	5·29*	
	4·11*	
	4·35*	
	3·51	
	4·38	
	5·43	
	4·58*	
	4·13	
	7·37*	
	4·24	

* Bleached.

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* From the eleventh annual laboratory report of Messrs. Southall Brothers and Barclay, Limited.

GERMAN NATURALISTS AND PHYSICIANS.

The seventy-fifth meeting of German naturalists and physicians was held in Cassel at the end of September, and several papers of interest to pharmacists were read. The following brief abstracts from the *Pharmaceutische Zeitung* may serve to direct attention to their leading features:—

(1) Studies in the Menthol Series.

By E. Beckmann.

Oil of peppermint contains menthol and menthone, the former being convertible into the latter by careful oxidation, and the latter into the former by reduction. Hence, it is possible to increase artificially the proportion of menthol in peppermint oil by converting its menthone into menthol. Theoretically, four isomeric menthones and eight isomeric menthols are possible, and the author devotes himself to the study of these, but his results can scarcely be satisfactorily given in abstract.

(2) Constituents of Kawa Root.

By P. Siedler.

The author first describes the anatomy of the young, and then of the older root. Chemical examination of the root has already resulted in the isolation of two indifferent crystalline bodies, methysticin and yangonin, an alkaloid, and lastly a glucoside. But the most important constituent, and the source of the anæsthetic action of the drug, is the resin. This is now being examined by Siedler and Winzheimer. Dissolved in ether, it yields to 1 per cent. solutions of ammonium carbonate, sodium carbonate, and caustic potash respectively. small quantities of resin acids, but the bulk remains undissolved, and consists of resenes. These investigations are being continued.

(3) The Assay of Oil of Cloves.

By H. Thoms.

Recent researches on the composition of clove oil have shown that, in addition to eugenol and caryophellene, which were formerly considered to be its only constituents, the oil contains furfurol, amylmethylketone, benzoyleugenol, aceteugenol, acetsalicyleugenol, and methylheptylketone. Thoms has now modified his method, which is the only one by which the eugenol is directly determined, as follows:—Five Gm. of the oil is mixed with 20 Gm. of solution of caustic soda (15 per cent.), warmed on the water-bath for half an hour, and transferred to a separator. The alkaline solution is run off into a beaker, and to it is added the alkaline washings of the sesquiterpene layer. 6 Gm. of benzoyl chloride are now added to the beaker, and the whole warmed until the formation of benzoyleugenol is complete and the excess of benzoyl chloride decomposed. After cooling, the liquid is poured off from the esters that have separated and solidified, and the latter are washed with 50 C.c. of water, any crystals that may have been carried over during the process being returned. The crystalline cake is washed twice by melting it with water, shaking gently and cooling. 25 C.c. of alcohol (90 per cent.) are then added to the moist precipitate, warmed and cooled with constant agitation, so that the benzoyleugenol separates in small crystals. These are transferred to a filter, drained and washed with alcohol until the filtrate measures 25 C.c.; they are then dried and weighed. For the 25 C.c. of filtrate a correction of 0·55 Gm. of benzoyleugenol has to be made. Analyses made by the author show that the process is accurate. In conclusion Thoms points out that eugenol when quite pure has but an extremely slight odour, the aroma of clove oil being due to the esters which it contains.

(4) The Constitution of Myristicin and its Occurrence in French Oil of Parsley.

By H. Thoms.

The author has examined myristicin obtained from mace, and shows its close relationship with apiol.

(5) Colonial Notes.

By L. Bernegau,

consisted of an account of journeys in the African colonies, and was illustrated by numerous lantern slides.

(6) The Examination of Alkaloids.

By G. Frerichs.

The author gave an account of the examination of cusparia alkaloids that has been prosecuted for some time in Brunswick, and draws particular attention to the results obtained by fusing alkaloids with urea.

(7) Basic Derivatives of Santonin.

By E. Wedekind.

The author has prepared benzol azo-derivatives of santonic acid and examined the properties of some of them.

(8) Quantitative Determination of Free Phosphorus.

By J. Katz.

The author discussed the difficulties involved in the determination of phosphorus, and proposed the following modification of Straub's method:—10 Gm. of phosphorated oil or a corresponding quantity of any other solution of phosphorus, which, however, should not contain more than 0·1 Gm. of phosphorus, are violently shaken with 20 C.c. of a 5 per cent. solution of copper nitrate until all the phosphorus has been combined; 50 C.c. of ether and 10 C.c. of peroxide of hydrogen are then added, and the shaking continued until the black colour is discharged. The aqueous solution is separated, the ether washed with water, and the phosphoric acid in the mixed aqueous liquids determined in the usual way by precipitation with magnesia mixture.

(9) The Quantitative Determination of Theobromine.

By J. Katz.

The author reviewed the methods at present in use for that purpose, and then proposed the following:—10 Gm. of cocoa powder or chocolate are boiled for half an hour with 100 C.c. of water and 10 C.c. of dilute sulphuric acid, using a reflux condenser. 8 Gm. of calcined magnesia are then added in portions, and the whole made up to 300 C.c. The boiling is now repeated for an hour, the liquid filtered off with the aid of a pump, and the residue exhausted with three successive boilings with 100 C.c. water. The filtrates are mixed, evaporated to 10 C.c., mixed with 2 Gm. phenol, and transferred to a perforator. After perforation for three hours with chloroform, the chloroformic solution is evaporated to dryness, the last traces of phenol removed with a bellows, and the theobromine dried for half an hour at 100° C., and weighed.

(10) The Determination of Caoutchouc in Rubber Plasters.

By Karl Dieterich.

After a discussion of the subject, Dieterich proposes to precipitate the caoutchouc as nitrosite by passing nitrous acid through a solution of the plaster in benzol; the nitrosite is deposited as a gummy or leathery precipitate, which can be collected, dried, and weighed. The author proposes to examine a number of plasters and other preparations by this method.

(11) Results of the Examination of a Number of Fixed Oils.

By R. Meyer.

These include the oil from the seeds of apples, oranges, pears, beans, capsicum, coriander, oats, and rye. The author communicates the usual details in the form of a table.

THE STUDENTS' COLUMNS.

THE DISPENSING OF MEDICINES.—2.

The student having become familiar with the various parts of the prescription, and the grammatical rules bearing upon these, will be able to advance another step, and commence a study of the various forms of dispensed medicines. The following classified list may appear at first somewhat confusing to the beginner, since in some instances the same descriptive name appears under more than one divisional heading; for instance, lozenge is classed as a solid preparation for internal use, and elsewhere for local application. In explanation of this seeming discrepancy the student may meantime be told—it will be commented on more fully later on—that some lozenges, as, for example, bismuth, are meant to be chewed and swallowed like a piece of food, because their sphere of action is the stomach and its contents, whilst others, such as potassium chlorate, are meant to be sucked slowly, not broken up by the teeth and swallowed, because their action is intended to be local, that is to the surface of the mouth and throat, mainly the latter. Other instances are explainable on somewhat similar grounds, but this will be more appropriately deferred till the individual form comes under notice.

Classification of Dispensed Medicines.

(*a*) For Internal Use.

(1) Liquid.	(2) Semi-solid.	(3) Solid.	(4) Solid (powdered).
Mixture.	Confection.	Pill.	Powder.
Emulsion.	Capsule.	Tablet	Cachet.
Draught.	Jelly.	Lozenge.	
Drops.			

(*b*) For External Use.

(1) Liquid.	(2) Semi-solid.	(3) Solid.	(4) Solid (powdered).
Liniment.	Ointment.	Plaster.	Dusting Powder.
Embrocation.		Blister.	
Lotion.		Paste (Gelatin).	
Paint.			
Liquid Blister.			
Liquid Plaster.			

(*c*) For Local Application.

(1) Liquid.	(2) Semi-solid.	(3) Solid.	(4) Solid (powdered).
Throat Paint.	Eye Ointment.	Suppository.	Snuff (medicated).
Throat Spray.		Pessary.	
Gargle.		Bougie.	
Mouthwash.		Lozenge.	
Inhalation.		Pastille.	
Enema.		Tablet.	
Eye Lotion.			

Mixture.—This was described in the first paper as a fluid combination of drugs or chemicals, or both, either in solution or partly so and partly in suspension, the usual basis or vehicle being water or some simple preparation of a drug, such as an infusion, decoction, or aromatic water, etc. It is intended to be prepared in such a way that by merely shaking the bottle the various ingredients will be sufficiently mixed, so that when the dose is measured out, it (the dose) will contain an aliquot part of each ingredient. When each of these is miscible with or soluble in the vehicle, this object is easy of attainment, but when any of them does not fulfil these conditions, special means have to be taken in order to make it comply with the requirements of a properly prepared mixture.

In a liquid preparation, such as is a mixture, there is, of course, a much greater chance of interaction between the ingredients than there is in a pill or in an ointment, and this is a side of the dispensing art which requires vigilance, knowledge, and correct reasoning on the part of the dispenser; therefore, the student, when he is dispensing, should always be on the outlook for chemical reaction.

Some Explanatory Experiments.

By way of practically illustrating the various points commented upon above, the student is requested to carry out the following erperimental operations:—

(1) Pour 1 drachm of tincture of calumba into 4 drachms of water (example of miscibility of basis with vehicle).

(2) Pour ½ drachm of tincture of Indian hemp into 4 drachms of water (example of immiscibility of basis with vehicle).

(3) Gradually add, drop by drop, ½ drachm of tincture of Indian hemp to 1½ drachm of mucilage of acacia contained in a graduated measure, the mucilage being constantly stirred with a glass rod. When all the tincture has been added, gradually dilute the contents of the measure with water until they measure 4½ fl. drachms, the stirring being continued. Compare result with (3) (example of overcoming the immiscibility of a basis with the vehicle.)

(4) Rub in a mortar 1 drachm of sulphate of magnesium with 4 drachms of water (example of solubility of a basis in the vehicle).

(5) Rub in a mortar 1 drachm of carbonate of magnesium with 4 drachms of water (example of insolubility of a basis in the vehicle).

(6) Dissolve ½ drachm of sulphate of iron in 4 drachms of water. In another vessel dissolve ½ drachm of carbonate of potassium in 4 drachms of water, then pour the latter solution into the former (example of chemical reaction between two substances soluble in the vehicle, resulting in the formation of a basis which is insoluble in the vehicle).

(7) To 1 drachm of tincture of perchloride of iron diluted with 1 oz. of water, add 4 drachms of solution of acetate of ammonium (example of chemical reaction between two substances soluble in the vehicle, resulting in the formation of a basis which also is soluble in the vehicle, but of a colour different from the two substances reacting).

(8) To 2 drachms of diluted phosphoric acid mixed with an equal volume of water, add 1 drachm of tincture of perchloride of iron and agitate (example of chemical reaction as above resulting in the formation of a colourless basis).

(9) Dissolve 1 drachm of sulphate of magnesium in 1 oz. of water, then dissolve 1 drachm of bicarbonate of soda in 2 oz. of water. Mix the two solutions, then boil, when a white precipitate will form. (Example of unseen chemical reaction. Bicarbonate of magnesium is formed when the solutions are mixed, but being a colourless salt, and soluble in water, no evidence of the reaction having taken place is apparent. On boiling the solution, the bicarbonate of magnesium is decomposed, giving rise to carbonate of magnesium, which, being insoluble in water, appears as a white precipitate.)

These simple experiments will, more vividly than words, impress upon the student's mind the fact that much may depend upon the bringing in contact, under suitable conditions, of two or more substances. He must not, however, suppose that chemical reaction is the necessary accompaniment to the dispensing of a mixture. As will be shown in the next lesson, this happens only in the minority of cases. Nevertheless, the student should make it a habit when reading over a prescription to ask himself the question, Will a reaction take place when these substances are brought in contact?

VETERINARY RECIPES AND NOTES—2.

BY A VETERINARY SURGEON.

Acidity of Stomach.

Persons unfamiliar with the habits of animals wonder how the patient communicates to his human attendant the fact that he is suffering from "heart-burn" or acidity. Horses and cattle both show an excess of saliva, frothy fluid escaping from the corners of the mouth, and cattle frequently eructate. Horses do this to a slight extent, but their conformation does not lend itself to the return either of solids or gases. Pet dogs are martyrs to this trouble, and their eructations are scarcely less offensive than their dejections per rectum. Improper food is the commonest of all causes, but the presence of worms must not be forgotten.

Treatment.—Horses and cattle should receive a moderate dose of aloes—from 3 to 8 drachms, followed by the usual antacids employed in human practice. The following is a suitable powder for horses or cows:—

Sodii bicarb.	1 drachm
Sodii chloridi	4 drachms
P. rad. calumbæ	3 drachms

M. ft. pulv. nocte maneque cum cibos.

Rock-salt, or a roll for licking, should be always within reach; indeed, this is an almost certain preventive, and its value not understood. Some dried salt should form a portion of every alterative and condition powder. Dogs should have a preliminary worm-ball, consisting of pulv. areca recens, 2 grains, and half a grain of santonine, to each pound weight of the animal. This will often altogether remove the cause; but, failing to do so, we may prescribe:—

Liq. magnes. bicarb.	1 ounce
Liq. cocci	30m
Aqua ... ad	4 ounces

M. ft. mist. Dose.—1 Drachm to 1 ounce, acccording to size of dog.

Salt habitually given in dogs' food is apt to lead to a troublesome skin eruption, and an occasional aperient may be advised, as tincture jalapæ, M. 10 to 30. The most objectionable and least remunerative mixture to prescribe is ol. ricini and syrupus rhamni. The patient, his owner, and the upholstery of the room share in the dose, and the animal is left greasy and sticky.

Acne.

From the pressure of ill-fitting or too heavy harness, inflammation of the sebaceous follicles and sudorific glands sets up troublesome pimples, which, breaking, leave sores, and often lead to prosecutions for cruelty in keeping animals so "galled" at work. These pimples are peculiarly indolent, and much resemble in their pertinacity the "buncles" which trouble very young men. Our patient the horse will submit to a touching-up of each pimple with neat carbolic acid, and this is the quickest way of getting rid of them. Customers intending to treat the case themselves, and merely asking for remedies, should be advised to first wash with a saturated solution of sodæ bicarb., which may be supplied as a lotion, a good big bottle for eighteenpence, made attractive, as pharmacists best know how. The acid. carbol. will penetrate the pustule, and cause its rupture the better, after an alkaline wash has removed the grease and sweat accumulations. Hot fomentations may be prescribed. These should contain: Sodii bibor., 5 parts; glycerinum, 10 parts; aqua, 90 parts. Ung. sulph. is useful in this complaint, and sulphur should be prescribed in the form of "our own make" of alterative powders. The harness-pad, collar, and crupper should be thoroughly cleansed, and the counter prescriber isn't half smart if he doesn't supply a disinfectant for this and subsequent occasions. These little troubles of the stable cause great loss, and should not be allowed to run on until a veterinary surgeon has to be called in. The pharmacist ought to be prepared to advise on such things, without in any way encroaching on the vet., while proving his usefulness to the horse-owner.

Contagious acne, or German measles, or Canadian horse-pox, is an eruption of a similar character, only much more easily conveyed upon harness. The same treatment may be employed, or 4 per cent. of creolin prescribed. It is well to know the various synonyms. Segregation of the affected animals should be enjoined, and separate tools and utensils for the infected.

After-pains, Heaving, Straining, etc.

The contractions which follow on the expulsion of the young are normal physiological acts up to a certain point, but when the placental membranes or "after-birth" has come away, further violent contractions are liable to cause eversion of the womb, or may indicate inflammation (septic metritis). All animals are liable, ewes more so than others. If the membranes are retained, they should be removed with care. In any case it will be right to advise injections of antiseptics: Sodæ or potassæ permanganas, 20 grains; aqua dest., 10 oz., is often used; or:—

℞ Ext. belladonnæ	½ drachm
Ext. opii	1 ounce
Glycerinum	1 ounce
Aqua	10 ounces

M. Inject warm.

Better than either of the above will be found a 7 per cent. solution of pure carbolic acid, for ewes. It has an advantage over permanganate that it may be combined with 10 or 15 per cent. of glycerin. An excellent oil for use in this connection may be made as follows:—Acid. carbol. (purum), 1 part; ol. anchusæ, 14 parts. M. The shepherd or cowman's hands should be first dressed with this, and then he may introduce enough to lubricate the passage. Straining ewes will often be stopped almost immediately by the introduction of a tablespoonful of this. They do not absorb carbolic acid, as do some animals. Such a dressing would almost certainly prove fatal to a bitch, and no cat would survive it; but ewes can be so treated with perfect safety. Mares and cows will bear an ounce of this preparation, but with the great volume of the womb in these animals it is advisable to use a 2 per cent. chinosol or phenyl solution. In careful hands, chloroform may be advised, when it is feared that the womb will come out. Animals are easily made to inhale it upon a sponge in a nose-bag, or in the case of bitches and cats in a cardboard or paper cone, extemporised for the occasion. Chloral, in sedative doses, acts both as an anodyne and a sleep producer, but no modern mixture has proved better than Youatt's old remedy of tr. opii and spiritus æther. nit. For ewes 2 drachms of each, repeated in three or four hours. Although the weight of an average sheep is not more than an average man, she may take with safety a very much larger dose. Opium may be said to have all its good effects and none of its bad ones, when rightly administered to horse, ox, sheep, pig, and dog, and a very large dose is not often attended with danger. A laxative dose should be given in all cases, but never a drastic purge.

Alopecia or Loss of Hair, Baldness.

No chemist gets through his apprenticeship without discovering the vast amount of humbug attached to hair restorers, or fails to observe how many bald-headed barbers vend unfailing remedies. It is the same with the lower animals as with man; if the hair-bulb or so-called "root" is destroyed, nothing on earth will make it grow again. If a horse's knee is so broken—that is to say, the skin so deeply cut as to destroy the bulbs, the skin will never again grow hair. If often happens with animals that they lose their coats or hair from the ravages of external parasites, as mange, and, in the great majority of cases, the hair will come again. Remedies undoubtedly help the process. The following is recommended:—

Tinct. canthar.	1 part
Lin. camph.	7 parts

M. Rub in three times a week.

or,

Paraffin	1 part
Ol. viride	1 part
Ol. sesame	4 vel 5 parts

M. Rub in three times a week.

or,

Lin. ammon.	1 part
Aqua camph.	3 parts

M. Rub in three times a week.

It is always advisable to closely clip the broken and imperfect hair around a bald spot. This applies particularly to the patches of baldness upon dogs' backs, for which ladies often consult the family chemist. An oleaginous diet should be recommended, either in the form of oil-cake or a portion of cod-liver oil over the food. Most horses and cattle will learn to take it, if only a little is given at first. If refused altogether, linseed oil may be substituted.

Amaurosis, Blindness.

Pharmacists are rarely consulted as to this form of blindness in horses or cattle, but pet dogs come within their province. It is seldom curable, as it is due to paralysis of the optic nerve and its expansion, the retina. When following upon distemper, and perhaps caused by deposition of morbid products, it may be worth while to prescribe:—

Pot. iodidi	½ drachm
Syr. croci	1 drachm
Aqua	4 ounces

M. ft. mist. capt., ʒi. nocte maneque.

If the history of the case is free from fits or brain symptoms, small doses of strychnia may be given. There is no apparent alteration of structure to the ordinary observer, and this condition of the eye is known as "glass eye" to horsey people. The absence of expression will only be noted by close observers.

Anæmia.

This condition is so familiar—in the human female particularly—that it needs no description, except to say that in animals one looks for it in the colour of, or colourness of, the visible membranes, and not in a skin covered with hair. A great many young animals suffer from want of red blood corpuscles, and the two chief causes are want of sufficient good food, and the presence of worms, which rob them of the result of digestion. There is also a "pernicious anæmia" due, it is believed, to an infectious microbe, and affecting the bone marrow. Treatment consists in generous diet containing proteids and fat and mineral tonics. The following powders will be found suitable for ill-thriving colts and young horned stock or lambs:—

Sodii chloridi	4 parts
Ferri sulph.	2 parts
Quininæ sulphas	1 part
Gent. pulv.	10 parts

M. ft. pulveres. Dose.—Two-year-old colts and cattle, 1 tablespoonful lambs, ½ to 1 teaspoonful.

If the subjects are convenient to handle (not away at pasture) a change to mineral acids will be advisable, such as:—

Tinct. nucis vom.	ʒiv.
Inf. calumbæ	℥viii.
Acid. nit.-hydro. dil.	ʒiss.
Aqua ad	℥xii.

Dose.—For a colt or two-year-old beast, 1 ounce; lambs, 1 drachm.

Syr. ferri phos. co., M. 20 to 1 drachm, for lambs or very young stock, and aqua calcis in the drinking water, or with milk, if pail-fed. Adult animals are often benefited by arsenic in doses (horses and cattle) of 4 to 10 grains daily.

Angle Berries or Warts.

There is a perennial demand for remedies which will destroy warts and excrescences. The type of wart should be ascertained. If encysted or contained within a cup-like cavity, it will bring no credit to the prescriber to sell any escharotic substance. They need to be boldly slit open and squeezed out, and the site dressed with liq. ferri perchlor., for which a brush may be supplied, and a caution not to scatter it around. Warts having a narrow neck (pedunculated) can be got rid of by ligature, and as a dressing for such ligatures we may supply: Hyd. biniodid., 1 part; alum exsiccatæ, 3 parts; theriaca, *q.s.* Instructions should be given to soak fine string in water and then dress it with the above before tying on. The "doctor's knot" is the most trustworthy tie, but it must be tightly drawn in order to strangle the vessels of supply. The broad-based or spreading warts are the most troublesome, and for these a most effective paste may be made of: Arsenic, 2 parts; sapo mollis, 1 part. M. Needless to say, such a preparation must be offered only to selected customers, who can be depended upon to apply according to instructions, which should be given as follows. Wash the warts with a strong solution of soda or Hudson's extract, persistently soaking until the excrescence swells up and is moist throughout; then rub in the paste with a bone knife or flat piece of wood. Repeat in three or four days. Nitric acid, acetic, and chromic are also applied in the undilute state.

Warts upon cows' teats and in or upon the mouths of dogs are treated with hot blood, but as this is an article not usually stocked by chemists, we may advise saturated solutions of salicylic acid or liquor potassæ. The writer was employed as an apprentice in putting up drachm bottles of this inexpensive substance for sale at 1s. 1½d., and his employer gained a great reputation for the remedy. It was coloured and perfumed *sec. art.*, of course.

PHOTOGRAPHIC NOTES.

BY A PHARMACIST-PHOTOGRAPHER.

Colour-corrected Plates and Films.

When we consider the superior results that can be obtained by the judicious use of a properly isochromatised, or colour-corrected, emulsion, to those yielded by the ordinary or uncorrected plate, it is scarcely to be wondered at the increasing popularity of the former; in fact, it would appear only a matter of time for the ordinary dry plate to become obsolete—especially as the isochromatic plate is capable of producing a superior result, as regards the colour values, even without the employment of the colour screen or filter. In my own experience, I have always found it essential to use a colour filter, properly adjusted in tint to the plate, in order to obtain anything like a correct rendering; if such a filter be not employed to cut off the ultra-violet and some of the blue-violet rays, it seems evident that these more chemically active rays will complete the exposure before the less active yellow and green have time to act. For some classes of work it is therefore necessary that the emulsion should be of the highest degree of sensitivenese, in order to admit of a comparatively short exposure with the use of the colour filter. The Ilford company have recently added to their long list of productions a colour-corrected plate of high speed, under the name of the Rapid Isochrom. plate. I have not yet had an opportunity of testing this, but if, as represented, of equal quality to the chromatic plate by the same firm, but of double the sensitiveness, it should become very popular.

Films versus Plates.

Some time since, under this heading, I quoted an opinion that if a film could be produced at a moderate price, it would very largely supersede the glass plate, on account of its lightness in weight and non-fragile character. Since then, a film-plate has been introduced by the Kodak Company which goes far to fulfil the required conditions. The "Kodoid" plate consists of a thin transparent celluloid, coated with a colour-corrected and very sensitive emulsion and "non-curling." Each film is attached by metal clips at the edges to black cardboard, so that it is ready at once for insertion in the ordinary dark slide, or in the sheaths of a magazine camera. The film can be very easily detached from the cardboard support, and, as it remains quite flat in the solutions, is as easy to develop as a glass plate. I have been recently using some of these "Kodoid" plates, and find them very satisfactory in quality, and, when used with a yellow colour filter, they yield excellent colour-correct effects with a shorter exposure than some isochromatic plates I have been using.

Gaslight Development Papers.

Photography is generally regarded as a summer pastime, though why it should be so is not quite clear. Certainly, as regards the production of pictures, there is almost as fruitful a field of work during the winter months as in the summer, and the introduction of the many varieties of the so-called "gaslight" papers has made the printing an easy, if not an enjoyable, winter evening's amusement. Messrs. Wellington and Ward, who make the production of printing papers their chief concern, have recently sent me some samples of their S.C.P., or slow contact papers. These are made in a variety of grades—glossy, smooth matt, art white, and art tinted. The two last-named have been favourites with me for some time past, especially the art-tinted, which should be used preferably in a larger size than that of the negative to be printed from, the image being adjusted in the centre by the use of a suitable mask. In this way an engraving-like effect is produced, no mount being necessary, and the appearance may be improved by carefully ruling a line round the edges of the picture with a blunt point; the style used for writing in duplicate answers very well, or, better still, a plate mark can be put on with the aid of a copying press and a zinc plate.

Reducing Negatives with Ammonium Persulphate, etc.

At a recent meeting of the Royal Photographic Society, Dr. Prevost referred to what the President—Sir William Abney—said he considered "a very useful hint." A country chemist, explained Dr. Prevost, had experimented, with a view to improving upon the ordinary method of reducing dense negatives with ammonium persulphate. When treating such subjects as wedding groups, in which the hard black and white too often give an inartistic effect to the picture, this chemist at last adopted a plan as follows: He flooded the plate wth ordinary gum, afterwards rubbing off some from those parts most requiring to be reduced. Then the ammonium persulphate attacked those parts more strongly than the other parts; but, instead of doing so in a hard, crude way, as is so often the case when insoluble varnish is used, it produced—owing to the gum being soluble in water—beautiful softened edges to the outlines. Dr. Prevost added that he had tried this method, and found it highly satisfactory.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

MEETING OF THE EXECUTIVE, NORTH BRITISH BRANCH.

Friday, October 23, 1903, at 36, York Place, Edinburgh, Mr. D. B. Dott in the chair.

Present: Messrs. Boa, Cowie, Cummings, Currie, Doig, Dott, Dunlop, Fisher, Giles, Gilmour, Kerr, Maben, Mitchell, Naysmith, Nesbit, Spence, Storrar, Strachan, Tocher and Wilson.

The minutes of the last meeting were read and confirmed.

Nomination of Examiners.

The Executive went into Committee to consider the report of the Committee for Nomination of Examiners. On resuming, it was moved by Mr Tocher, seconded by Mr. Gilmour, and agreed:—

> That Frederick Orpen Bower, Regius Professor of Botany in the University of Glasgow; John Gibson, Professor of Chemistry in the Heriot-Watt College, Edinburgh; George Coull, Edinburgh; Alexander Davidson, Montrose; David Brown Dott, Edinburgh; David Gilmour, Dunfermline; Martin Meldrum, Irvine; and John William Sutherland, Glasgow, be nominated for election by the Council as members of the Board of Examiners for Scotland for the year 1904.

Appointment of Divisional Secretaries.

It appeared that, with two exceptions, suitable names had been obtained for all the districts in Scotland for which divisional officers were appointed last year. It was remitted to the Chairman to have the list completed and transmit the nominations to the Council prior to the November meeting.

Meetings in Edinburgh.

It was reported that Dr. James Taylor Grant, B.Sc. Lecturer on Bacteriology, Edinburgh School of Medicine and East of Scotland College of Agriculture, had consented to give the inaugural sessional address on the evening of Wednesday, November 18, 1903, his subject being "Bacterial Therapeutics," with special reference to its pharmaceutical aspects.

Ventilation of Hall and Laboratories.

A communication from the Board of Examiners was received in reference to the need for some more effectual ventilation of the hall and laboratories. It was remitted to the Chairman, Professor Gibson, and Mr. Nesbit to consider the matter, and, if necessary, take professional advice and report to the General Purposes Committee, who were empowered to report to the Council and have the work carried out.

The Pharmacy Bill.

A communication from the Secretary was submitted drawing attention to the decision of the Council to proceed with the Pharmacy Bill in next session of Parliament, and inviting the co-operation and active support of the Executive.

The Executive agreed to suggest to the Council that the Pharmacy Bill should be backed by some Scottish member of Parliament when again introduced, and to offer to assist in securing some names if the Council accepted the suggestion.

Mr. Giles suggested that the phrase "wholesale dealing" might be more clearly defined in the new Bill. He thought if something like this was added, "When sold to a qualified retailer," it might make the position much clearer. It said "in the ordinary course of wholesale dealing," and that was very difficult to determine.

Mr. Storrar remarked that if Mr. Giles could devise a definition of wholesale dealing that would be satisfactory he would do a great service to the Legislature. It was a very difficult question, and could not be limited in the way suggested.

The Assistant-Secretary said any attempt to define more precisely wholesale dealing might seriously limit the scope of the statute.

Mr. Giles asked if an unqualified person sold as a wholesale dealer a quantity of cyanide of potassium, or some such substance, to an analyst for the purpose of his business, would that be a wholesale transaction?

The Assistant-Secretary said he thought it would probably be so regarded.

Mr. Giles said it would be quite possible it would be going into the hands of men who had no technical knowledge of its properties.

The Assistant-Secretary said the analyst would have technical knowledge. He thought it would be unwise to attempt a hard and fast definition of wholesale dealing. If it was left undefined, then it lay with the Court, the Sheriff to determine in each case whether the acts specified were wholesale or retail. Every case would be decided on its merits.

Mr. Giles said his view of a wholesale transaction was when poison was sold to a qualified chemist.

Mr. Dunlop said he understood that a wholesale dealer could only sell to a retail chemist. The retailer could not evade the law by trying to make out that it was a wholesale transaction.

Mr. Maben said there had been a great deal of obfuscation over the wholesale question, but it was quite well defined in Section 17 of the 1868 Act.

The Assistant-Secretary pointed out that there was a further definition in the Arsenic Act of 1851, which specified a written order.

Mr. Nesbit said that many persons who formerly got supplies from wholesale houses, purchased direct from the makers, and nothing was said about it.

The Assistant-Secretary indicated that wholesale dealing, so far as selling was concerned, was exempted by Section 16 of the Act. The exemption in Section 17 related exclusively to labelling and such like.

The subject was ultimately allowed to drop, the feeling being that it was better not to limit the statute by any additional definition.

Medicine Stamp Duty.

It was reported that the Council had remitted the Executive's resolution of June 26 to the General Purposes Committee for careful consideration. The ultimate result had been that the Council decided to take no action.

Mr. Currie said that in the present divided state of opinion on the question it was thought inadvisable for the Council of the Society to approach the Inland Revenue authorities. Before the end of the year there would be a great many more considerations before them, and it was not thought to be the duty of the Council to give a decision.

Mr. Doig said his view was that if the Council had taken up the question as the only representative body in the kingdom he was quite sure the Board of Inland Revenue would have listened respectfully to them. They could have reasoned with them far more effectually than by written letters. There was a lack of knowledge on the part of the Inland Revenue, and he thought the Council would have done a very wise thing if they had made a strong representation, and it would have strengthened the position of the Society all over the country.

Mr. **Currie** said he was in a position to know that opinion was very much divided throughout the country on this question, and the preponderance of opinion was in favour of no action being taken by the Council.

Mr. **Giles** said he thought the Council had done right When the Revenue did anything that was irksome or against the interests of the chemists, then would be the time to take action.

Mr. **Maben** said the trouble was that when a man got a demand for a penalty he must either pay or defend the case. Suppose he successfully defended, he would get no expenses, and people were not prepared to do that unless they had some strong society behind them.

Mr. **Currie** asked if he intended that the Pharmaceutical Society should defend such cases?

Mr. **Maben** said he did not expect that, but the matter was being allowed to drift. The Chemists' Defence Association would do nothing in the matter. In Glasgow at the present time a great many articles were said to have been purchased by the Inland Revenue which should not be treated as liable until after January 1 next. In one case corn salve was purchased, and a demand lodged for £10. It had nothing on it in the way of recommendation, and no advertising material rendering it liable. In another case in which he had advised a chemist that his labels were liable, the chemist replied that it was all right, but he shortly after had a demand for £20 for two articles sold. The liability was incurred by an advertisement on a carton box and by the possessive case. The Chemists' Defence Association was applied to, but they would not take any action, and advised that there was no defence. He did not expect they would enter on any case under the present reading of the Revenue regulations.

Mr. **Currie** observed that they would have seen that the Inland Revenue had actually said that, in some cases, the directions on medicine dispensed by physician's prescription would involve liability to stamp duty. That was quite absurd.

Mr. **Boa** said each case would be taken on its merits.

The **Chairman** said he sympathised very much with what had been said by Mr. Doig. The action of the Inland Revenue was paltry and ill-advised in the public interest. The difficulty was for the Council to take any action in the matter that would be effective.

Mr. **Doig** said he did not intend to move any motion on the subject, but perhaps Mr. Storrar and Mr. Currie, as members of Council, would do their best to see that the matter was kept to the front.

British Pharmaceutical Conference.

Mr. **Giles**, reporting as a delegate, said it was a very enjoyable conference. The papers read were very educative and interesting, but the discussion was not taken advantage of so fully as it might have been. To him the most interesting was perhaps that of Mr. Leo Atkinson on the future of pharmacy. Mr. Atkinson advocated the formation of a guild of pharmacy, but he thought the Assistant-Secretary voiced the feeling of most of the members when he declared that the Pharmaceutical Society offered the best guild of pharmacy that could be conceived. Many of the papers were too technical for the majority of the members. At the Federation meeting the instructive paper of Mr. Tocher on Territorial Representation was a masterpiece. They had also a paper on Medicine Stamp Duty by the Editor of the Journal. But it was unfortunate that there was only one session of the Federation, as they had a formidable agenda, and there was not time to discuss the business that came before them. Another thing that he observed was that association sent up resolutions and had no one there to speak to them.

Mr. **Kerr** concurred in saying the Conference was most enjoyable. He enjoyed it even more than the Dundee one, perhaps because he had nothing to do but listen. It was desirable that the time for the Federation meeting should be extended by some means, as it was a most useful institution.

Mr. **Cowie** said the local Committee deserved their best thanks for the excellent arrangements at Bristol. He suggested that the papers should not only be printed in time to be handed to members at the meeting, but that they should be circulated to members beforehand, and, to a large extent, held as read. In that way more time would be given for discussion, and members would have a better opportunity of discussing them properly.

The Chairman said the papers read at the Conference were often very long, and it would be an advantage if authors studied brevity.

Centenary of the Pharmaceutical Society of Paris.

The **Chairman** said he had received a courteous invitation to represent Scottish pharmacists at the centenary celebrations of the Pharmaceutical Society of Paris, but, being unable to go, he had sent an apology. It was now too late to send a formal congratulatory message in time for the celebration, but this being the first meeting of the Executive since the invitation was received, the Chairman was authorised to write, in name of the Executive, a letter of congratulation to the President of the Society.

Imitation Chlorodyne.

Mr. **Maben** drew attention to a bottle labelled chlorodyne and sold for a penny. It contained a liquid which seemed to be oil of peppermint and extract of liquorice, but without any chloroform or morphine—the essential ingredients of chlorodyne. He suggested that the attention of the food and drugs authorities should be directed to preparations of this kind.

A general discussion took place, from which it appeared that there was a growing practice in some districts by certain vendors of supplying cheap imitations of well-known and powerful drugs, and that while this was undoubtedly a public danger, it seemed difficult to devise any means of putting a stop to it.

The matter was allowed to drop, and this was all the public business.

PLYMOUTH CHEMISTS.

SPECIAL MEETING.

Wednesday, October 21, 1903, at 7, Whimple Street, Plymouth, Mr. C. J. **Park** in the chair.

Divisional Secretary's Report.

Mr. R. F. **Roper** read a report which gave an interesting account of the work of the Pharmaceutical Society in the town. There are seventy-one registered chemists in Plymouth, of whom thirty-seven are members of the Society—a very satisfactory percentage. With reference to the protection of titles, he thought, notwithstanding opinions to the contrary, some distinctive title should be reserved or devised which should be free from possible usurpation by stores and trading corporations, without in any way interfering with other trades or professions, or with public interest or convenience.

Mr. J. Davy **Turney** proposed a hearty vote of thanks to

Mr. Roper for the able manner in which he had carried out his duties.

The motion, being seconded by Mr. Barge, was unanimously carried.

Mr. Roper, in reply, thanked the members for their kind appreciation, and suggested that Mr. F. A. Goodwin be nominated as Divisional Secretary for the ensuing year.

POOR-LAW DISPENSERS' ASSOCIATION.

ANNUAL MEETING.

Friday, October 23, 1903, at Surrey House, Victoria Embankment, W.C., Mr. Montagu G. Smith in the chair.

Reports.

The Hon. Treasurer (Mr. G. B. Walker) presented the balance-sheet, which was adopted.

The Hon. Sec. (Mr. H. D. Kelf) read a short report dealing with the numerical strength of the Association, the number of meetings held, and the work of the Committee.

Election of Officers.

The following being elected for the ensuing year:—President, Mr. Montagu G. Smith; Vice-President, Mr. G. W. Lindsay; Hon. Treasurer, Mr. G. B. Walker; Hon. Secretary, Mr. H. D. Kelf.

Mr. Montagu G. Smith gave a brief *résume* of the work of the Association for the past year and encouragement for the future. The most important business completed was the affiliation to the National Poor-law Officers' Association, which he felt sure would tend to strengthen their Association. The subscription had necessarily to be increased from 2s. 6d. to 4s. to meet the requirements of the National Poor-law Officers' Association, whose capitation fee was 1s. 6d. per member.

The Hon. Secretary, Mr. H. D. Kelf, Ph.C., Southwark Infirmary, East Dulwich Grove, S.E., will be glad to send a copy of the rules and objects of the Poor-law Dispensers' Association to any Poor-law dispenser in London or provinces.

LIVERPOOL CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Thursday, October 22, 1903, at the Royal Institution, the President, Mr. R. C. Cowley, in the chair.

Messrs. T. F. Percival, H. Kemp, W. H. Lenton, Gerald Lenton, and J. Oliffe were elected members of the Association.

Mr. R. C. Cowley was unanimously re-elected President, and made a suitable acknowledgment of the honour conferred upon him.

The President showed a sample of camphor water which had come under his notice. It had been prepared according to the method of the present Pharmacopœia, and, after being corked up in a clean Apollinaris bottle for some little time, showed a cloud, which, upon being put under a microscope, was found to consist of the hyphæ of a fungus. Mr. Cowley said that the formation of a fungus under such conditions rather condemned the use of camphor as a preservative. He attributed its presence to the organic matter contained in the sample of water used.

Messrs. Abraham, Hocken, Marsden, and Wyatt spoke upon this, the latter giving the suggestion that some oxidation of the alcohol to acetic acid had taken place, and the fungus would grow very readily in this.

Mr. Buck read a paper, which is printed at page 620, entitled

Notes on the Medicine Stamp Duty Act.

The discussion upon the paper was taken part in by Mr. Glyn-Jones, the President, and Messrs. A. C. Abraham and Stockdale, whilst a letter from Dr. Symes was read upon the subject. The conclusion arrived at was that nothing should be done to interfere with the good relations at present obtaining between the medical profession and chemists, and the meeting deprecated the publication of any further books of formulæ.

Mr. Cowley then read a paper on the

Relative Strengths of the Dilute Acids and Alkalies of the British Pharmacopœia.

(See page 619.) Owing to the lateness of the hour discussion on the paper was postponed.

FEDERATION OF GROCERS' ASSOCIATIONS.

GENERAL PURPOSES COMMITTEE.

Wednesday, October 21, 1903, at Newport. Among the questions discussed was

Medicine Stamp Duty.

Mr. W. Thomas, on behalf of the Swansea Grocers' Association, introduced the following resolution:—

> That this Association regrets to see a revival being made of an obsolete law with reference to stamp duty on medicines, by which it appears that any medicine not sold as a drug pure and simple is liable to stamp duty, and as a large quantity of simple medicines, pills, powders, lotions, etc., are sold in pennyworths and other small quantities by grocers, to the great advantage of the public in country and working-class districts, the imposition of this duty will cripple this trade and deprive the public of what is now a very great convenience, by compelling them to go to a chemist for these simple medicines. This Association, therefore, whilst appreciating the efforts already made by the Federation, expresses the hope that steps will be taken to represent in the proper quarter the impracticability of taxing penny articles, and urges that an exemption from duty shall be granted in the case of these simple remedies.

Mr. Barrow (Isle of Thanet) pointed out that the Government stamp on such medicines would not be a hall-mark as to their purity or guarantee that they would effect the object indicated, whilst the duty would prove a restriction to trade which the Federation ought not for a moment to countenance.

Mr. F. W. Beck, of the firm of Neve, Beck, and Kirby, solicitors, explained the legal aspect of the question. The Act under which the duty was revived was passed in 1802, and down to last year, or for the last 100 years, the Inland Revenue authorities had not levied a duty, recognising that for simple remedies which did not express direct ability to deal remedially with certain ailments, although strictly liable to duty, should remain duty free. But last year two cases arose in the drug trade. In one case proceedings were taken against a chemist at Brentford for the sale of what were known as influenza pastilles. Although a dismissal was obtained, afterwards the High Court reversed the dismissal, and decided that the pastilles professed to cure influenza, and were, therefore, dutiable articles. The principle of law was this: The duty was imposed upon nostrums, patent medicines, proprietary articles, and things which were held to be a cure for any specific ailment. It was held that if simple drugs, well known to everybody, in which the chemist claimed no proprietary right at all, were sold as suitable for particular purposes, they were not liable for duty. The duty struck at things in which the proprietor claimed for himself a peculiar right; but if the chemist put up something which any other chemist could put up, and said: "It is made according to the British Pharmacopœia, and I think it is good for so-and-so," it was held, and rightly held, not to be within the scope of the Act. This put a great deal of difficulty in the way of the sale of those small articles. Upon the present construction of the law, pennyworths of pills—liver pills, antibilious pills—or a remedy for any specific disease, were liable to duty. The only difference between the grocer and the chemist was that if the chemist put on his label that it was prepared in accordance with a standard recipe, he was not liable to duty. The position of the grocer was that he might sell any proprietary medicine which did not contain poison; he might sell any ordinary domestic remedy, provided he did not recommend it by label for the use of any particular ailment. That was, shortly, the position of the grocer; but he could not sell any other drug which was recommended for a specific disease, unless that article was stamped. The resolution from Swansea proposed the **Only Effective Remedy** for this inconvenience. There was the remedy of legislation on the subject, but seeing that the Inland Revenue authorities had been content to let it rest for so long for the convenience of the public, one would think that if proper representation were made to them they would be prepared to revert to their old method of procedure under reasonable conditions. The Swansea resolution was a perfectly sound and workmanlike one. He thought if they appointed a deputation no harm could be done, and, possibly, some good. There was another important feature. There was no reason at all why they as retailers should run any risk at all. It was a comparatively small trade, carried on for the profit and convenience of the customers, not of the grocers. It was a far more important matter for the manufacturers than the retailer. It was exercising the minds of the manufacturers, and it was their duty to find a way out of the difficulty if the difficulty remained. Grocers should take care to obtain a warranty from the manufacturer saying that he did not run any risk in selling those articles.

Councillor R. T. Duerdin: Do you think the authorities have been got at in any way by the Society of Chemists and Druggists?

Mr. Beck: The proceedings taken came as a great shock and surprise to a great many chemists, and caused a great deal more consternation among them than among the grocers. I do not think there is any reason to suppose that the authorities have been "got at." Perhaps they have become more stringent—it may be partly a question of revenue. I believe the revenue from this source amounted to £300,000.

Mr. G. R. Woodcock asked if a chemist put up a remedy which the chemist could sell, could the grocer sell it, bearing the statement that it was made up from a standard recipe? Was the grocer on all fours?

Mr. Beck: It is the person who ultimately sells who is responsible for the duty; consequently, the grocer cannot sell what the chemist has put up.

Mr. J. Evans: Are we liable for selling cough lozenges without a stamp duty?

Mr. Beck: If it is pushed to a conclusion it would unquestionably apply to cough lozenges.

The Chairman: I think Mr. Beck has put the matter very clearly, and has disentangled it from another question which was discussed with it in trade papers.

The Swansea resolution was carried, and referred to the Parliamentary Committee.

CHEMISTS' ASSISTANTS' ASSOCIATION.

ORDINARY MEETING.

Thursday, October 22, 1903, at 73, Newman Street, London, W., Mr. A. B. Britton, President, in the chair.

Several new members having been proposed,

Mr. R. E. Lownsbrough, recorder in pharmacy, called attention to a number of new remedies which had recently been placed on the market. Among these were methyl-rodin, new sidonal, thyranculin, optocene, and anthrasol. He stated that he proposed to obtain particulars of new remedies from wholesale houses, and enter them in a book, which would be kept in the rooms of the Association for the purposes of reference. The proposal met with the hearty approval of the meeting.

Mr. S. C. G. Tweedy then read a paper on the **Pharmacy of the Seventeenth Century.**

The paper consisted for the most part of extracts from a book by Dr. John Shroder, a London physician who practised in the time of James I. and James II. The animal remedies prescribed for all manner of diseases, including the "king's evil," were very curious, and were derived from forty of the terrestial animals, thirty birds, twenty-two fishes, and twenty-four insects, in addition to various vegetable and mineral products. The paper, which does not lend itself to reproduction in the Journal, was listened to with much interest and amusement.

Several members having spoken, the President proposed a hearty vote of thanks to the author. The vote was carried with acclamation.

WESTERN CHEMISTS' ASSOCIATION (OF LONDON).

ELECTION OF OFFICERS.

The following have been elected as officers for the present session:—President, Mr. J. W. Bowen; Vice-President, Mr. Frank A. Rogers; Treasurer, Mr. H. Cracknell; Secretary, Mr. W. J. I. Philp.

SUNDERLAND CHEMISTS' ASSOCIATION.

ANNUAL MEETING.

Tuesday, October 27, 1903, in the Grand Hotel, Bridge Street, Sunderland, Mr. R. H. Bell in the chair.

Election of Officers.

After the usual formal proceedings Mr. Bell felicitously proposed that his Worship the Mayor of Sunderland (Alderman H. J. Turnbull, J.P.) be re-elected President of the Association for the ensuing year.

This was seconded by Mr. Fairman, and carried unanimously. —This is the fourth year in succession that his Worship has occupied the position.

Mr. R. H. Bell was re-elected Vice-President; Mr. Jno. Mitchinson, Hon. Treasurer; Mr. A. W. Golightly, Hon. Secretary; and Messrs. R. Robinson and E. A. Harrison were elected Auditors.

The Council elected were as follows:—Alderman Harrison, Messrs. F. D. Purse, G. P. Fairman, C. Ranken, J. G. Harrison, E. R. Cherrett, and H. S. Corder.

The date of the annual dinner was fixed for Wednesday, November 25.

The remainder of the evening was devoted to the Medicine Stamp Acts. It was decided to call a meeting to consider further the matter at an early date.—The Pharmaceutical Society was specially commended for its work of compilation and collection of recipes.

Cordial votes of thanks were moved to the officers of the Association for their duties during the past year, which was thought by those present to have been a very successful one.

BRADFORD CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Wednesday, October 28, 1903, at the Royal Hotel, Bradford, Alderman H. Dunn, President, in the chair.

The Chairman, in introducing Mr. Atkins, said they felt greatly honoured by the presence of a President of the Pharmaceutical Society, and especially one who enjoyed the distinction of having been connected with pharmacy for sixty years, and one who had been on the Council of the Society for twenty-six years or more.

Address by Mr. S. R. Atkins.

Mr. Atkins said he wished to talk in a friendly way to them on pharmaceutical topics, and chiefly because many a difficult and knotty problem was best settled in such a manner. He knew little about Bradford, but he was well aware that not the least interesting feature of the city was the energy and intelligence of the members of the Bradford Association. He had come to know by converse with them what their views were upon current pharmaceutical topics, and felt that he should learn as much from them, to say the least of it, as they could from him. They would all feel that what remained now to be done in regard to

The Pharmacy Bill

was to push it forward through their Parliamentary representatives when next introduced. He could tell them that the Law and Parliamentary Committee had had several important meetings lately, and they had decided to reintroduce the Bill exactly as it stood with one important exception, that exception making it quite clear to the medical profession and to the veterinary surgeons that the Pharmaceutical Society did not propose to interfere with the exemptions which they had enjoyed. They had drafted a clause making that point clear to both those two bodies, and the effect of that would be that they would entirely disarm the antagonism of the medical profession and of the College of Veterinary Surgeons. As to Clause 7—which would no doubt be the subject of a special fight when the Bill came to Committee—he might say that on that qualifying clause for directors they had decided that that must stand precisely where it was; that whatever might happen in Committee or afterwards in the discussion in the House, for present purposes they were not prepared to modify that clause one iota. Alluding to the curriculum clause, he said nothing could be more obvious to him than the urgent need of

Systematic Training

and education. Nothing was more painful to him, as the Chairman of the Board of Examiners, than to see the sad slaughter which occurred in the examination-room. For years his conviction upon that question had been that nothing but systematic and prolonged training could remedy that evil. At present it was perfectly obvious that young men came up for examination who were conscious that they were quite unfit. Some of them came up as a preliminary canter to see what kind of thing the examination was; but the greater proportion were young men who were quite conscious of their unfitness for the test. Apprenticeship, unfortunately, had now lapsed into the hands of men who were often the least qualified to train. Apprentices were taken for the value of their labour or the amount of the premium, and they had the run of the shop, but actual systematic training was indeed a very small quantity. There were excellent provincial schools nowadays, he granted, but the candidates came for examination after only a very few months in the school. He appealed to the young men who were present to remember always that the value of systematic training could not be over-estimated in reference to its value in relation to the needs of after life. Upon the whole question of the Bill he urged them, when the General Election came, they should be most persistent in their interviewing of

Members of Parliament

and candidates upon the Bill. Sitting at the table of the Mayor of Salisbury recently, he had the member for the division on one side and the candidate on the other side, and he secured promises from both; and one of these gentlemen said that he was interested in the question as a shareholder in a large company, but he felt, after the explanation which had been given to him, that whatever else should come within the dealings of the company pharmacy should not. He (Mr. Atkins) assured them that they would be amazed if they knew how astonished members of Parliament were when they were told that companies, because they had contracted themselves outside of the Pharmacy Act, were able to do as companies what an individual could not do. The gentleman in question, after hearing the facts, said he would be glad to do all that he could to eliminate pharmacy from the company. Do not let them think of trying to do their work with their members in the excited atmosphere of the lobbies, where members were worried by all sorts of claimants, but let them educate members in their own constituencies. Going on to allude to the report of the Poisons Committee, he spoke of the absurdity of the two suggestions that the present means of distribution were insufficient, and that there was a difficulty about prices. He paid an eloquent tribute to the Minority Report of Mr. Walter Hills for its fairness and frankness. There was no information at present, he added, as to any intention in the direction of legislation, and they would all feel that even the Majority Report gave no justification for legislation, and it might be that the changes in the Government and the departure of the Duke of Devonshire from the Cabinet would affect the matter, but he wished them to remember that their opponents on this question were absolutely sleepless in their activity, and it was impossible to foresee what legislation might be proposed. In the event of legislation being proposed, he begged them to resist it with all the energy with which Yorkshiremen could fight, and he assured them that the chemists of other parts of the kingdom were looking to those large, sturdy, strenuous communities in Yorkshire and Lancashire to take a leading part in the resistance.

Upon the motion of Mr. Waddington, seconded by Mr. R. W. Silson, and supported by other members, a very hearty vote of thanks was accorded to the President, and the meeting ended.

CARDIFF AND DISTRICT PHARMACEUTICAL ASSOCIATION.

ORDINARY MEETING.

Wednesday, October 28, 1903, at the Park Hotel, Cardiff, Mr. Jabez A. Jones, President, in the chair.

Territorial Representation.

Mr. A. Hagon, in an eloquent and effective speech, proposed the following motion, of which notice was given at the last meeting:—

> That this meeting of the Cardiff and District Pharmaceutical Association is in favour of territorial representation, and is unanimously of opinion that such a measure

would very materially increase the interest of the trade in the work of the Society. Further, that this meeting respectfully urges the Pharmaceutical Society to formulate a scheme for such representation, and to include in such a scheme a provision for compulsory yearly registration of all qualified chemists, and payment of a small annual registration fee, such payment to carry with it a vote in the election of a representative in the district in which the member resides.

The President seconded the resolution, and was followed by Mr. Robert Drane, who thought that they would be in a much better position to go to Parliament for what they needed as a body could their mouthpiece, the Society, speak for the whole of the trade, and not for a section only.

Mr. W. R. Hopkins supported the motion, which was passed unanimously, amid applause.

It was resolved that a copy of the above resolution should be sent to all the chemists' associations in the country.

Mr. Richard Mumford brought up the question of

Stamping Medicines,

and showed specimens of labels not liable to duty; and some communications from Somerset House were read, and a lively discussion followed.

Other Matters.

The last item on the agenda concerned the dispensing of medicines by doctors, and local information on the subject was required. A special sub-committee was appointed to deal with the subject of co-operative buying, and the meeting terminated.

PLYMOUTH, DEVONPORT, STONEHOUSE AND DISTRICT CHEMISTS' ASSOCIATION.

TENTH ANNUAL MEETING.

Wednesday, October 28, 1903, at 7, Whimple Street, Plymouth, the President, Mr. J. Davy Turney, in the chair.

Annual Report.

The report, which was read, summarised the work of the Association during the past year. It referred particularly to the negotiations with Messrs. Oppenheimer with regard to the protection of prices, and to the fact that Mr. Lockie, M.P., had promised, at the request of the Association, to support the Pharmacy Bill.

The Chairman said that the number of members remained practically the same. He felt that the decision of the Association not to join with the anti-co-operative movement was wise. The Association had been very active in giving information to members of Parliament with regard to the Pharmacy Bill, in connection with which Messrs. Weary, Roper, Park and Maitland had interviewed local members. He thought that if other associations had done as much, members of Parliament would be well versed in the Pharmacy Bill, and it would be again their work to help the new Bill on in order that it may become an Act of Parliament. Still, he thought that a simpler Act for the protection of titles would meet with the approval of chemists throughout the country; the titles of pharmaceutical chemist and chemist and druggist should be reserved for those qualified by law, and if the Association would only keep pegging away it could accomplish much.

Junior Section.

Mr. Turney much regretted this was not so active as formerly, and that definite classes could not be established; he did not think those carried on at the technical schools were of much assistance to pharmaceutical students. In the North of England matters were arranged on a better system.

Mr. Park hoped the members would render every assistance to the new Bill. He, personally, would not vote for any member of Parliament unless he would promise to help the Bill or show any real reason that it was against the interests of the public why support should not be given.

Mr. Roper said the Pharmaceutical Society would have been wiser had they, in the early days of bringing forward a Bill, drafted a shorter one which had for its object the protection of titles. He felt sure that if chemists were united to something of obvious interest they would go further and combine again for their rights.

Treasurer's Report.

Mr. Barge submitted the accounts, which showed a balance in hand of £1 17s. Since the report had been printed he had received several other subscriptions, which would be handed over to the new Treasurer.

Mr. Maitland regretted there was such a falling off in the number of assistant members. He thought subscriptions should be collected earlier in the year.

The report was adopted, and a vote of thanks passed to the Treasurer for his services.

Election of Officers.

The following were elected:—President, Mr. John Barge; Vice-Presidents, Mr. Condy U'Ren (Plymouth), Mr. S. Perkins (Devonport), and Mr. F. Maitland (Stonehouse and district); Hon. Treasurer, Mr. F. A. Goodwin; Hon. Secretary, Mr. G. Fairweather; Hon. Auditors, Messrs. J. Foster and H. M. Morgan.

Other Matters.

On the suggestion of Mr. Spear, the advisability of holding a social evening was discussed, but no decision arrived at, the majority being in favour of this addition to the social functions, as it would attract those who were not dancing men.

Mr. Maitland proposed, and Mr. Barge seconded, a hearty vote of thanks to Mr. Turney for the able manner in which he had carried out the duties of President during the past year.—The motion was carried with acclamation.

Mr. Barge having taken the chair, it was decided, on the proposition of Mr. Turney, that the annual dinner be held on November 25, with the same committee as last year.

BRITISH PHARMACEUTICAL CONFERENCE.

MEETING OF THE FORMULARY COMMITTEE.

Thursday, October 22, 1903, at 16, Bloomsbury Square. Present:—Messrs. N. H. Martin, Harold Wilson, H. Wilson (Southampton), W. A. H. Naylor, F. Ransom, J. C. Umney, and F. C. J. Bird.

Letters and telegrams regretting inability to attend had been received from Messrs. Abraham, Boa, Wells, Wright, and Dr. Symes.

Mr. N. H. Martin was unanimously re-elected Chairman, and Mr. Bird Honorary Secretary.

On Mr. Martin resuming the chair the minutes of the last meeting were read and confirmed, and the Committee proceeded with the further consideration of proposed new formulæ. Specimens illustrating many of these had been prepared and stored under usual conditions for some months, in order to test their stability and keeping properties. Certain points in some processes gave rise to considerable discussion; in one or two instances the formulæ were referred back to the authors for further experiment. Several improved processes were adopted for preparations already in the Formulary, synonyms were inserted, and slight alterations made in some of the formulæ approved at the last meeting, in response to criticisms by members of the Committee during the interval.

The experimental work of the Committee is nearing its completion, so that the material for another edition of the B.P.C. Formulary will probably be ready at an early date.

THAMES VALLEY DISTRICT CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Wednesday, October 28, 1903, at the Kingston Hotel, Kingston-on-Thames, Mr. **Alfred Higgs**, J.P., President, in the chair.

Mr. C. J. G. **Bunker** introduced a discussion on

Co-operative Buying.

The speaker mentioned a plan which had been found workable in South London, where several chemists had agreed to buy proprietary articles in large quantities, so as to obtain the best possible terms.

Mr. H. E. **Clement** and Mr. R. B. **Betty** having spoken,

Mr. C. J. **Palmer** told the meeting of what had been done in Great Yarmouth. It was important, he said, in adopting any system of co-operative buying, that all transactions should be between members only, and for cash.

Mr. W. J. U. **Woolcock** advocated a larger scheme; he would like to see a central distributing bureau established. It should be possible in a large Association such as theirs to buy in much larger quantities than £5 lots, and thus to meet the competition of the large stores.

The **President** agreed with Mr. Woolcock. He felt that in a wide district it would not be a workable scheme, as had been suggested by other speakers, for one man to buy large quantities of one proprietary article, which would require much shelf-room, and might be thrown on his hands. He suggested that the matter should be sent for consideration to a special committee. He would be willing to distribute articles free of charge by means of his tran.

Mr. F. **Harvey** suggested that the members of the Committee might form buying centres for the chemists in their immediate vicinity.

Mr. **Bunker** thought that if there were a central distributing bureau the members should form a limited liability company. He moved the appointment of a small committee to consider the whole subject.

Mr. **Woolcock** seconded. He agreed that the formation of a limited company would be the best way to ensure that all the profits reached the members themselves.

Mr. **Palmer** moved, and Mr. H. F. **Bowen** seconded, an amendment to the effect that it should be left to the members to make private arrangements with the Secretary for co-operative buying. The amendment was carried, and was subsequently adopted as a resolution.

DINNER.

After the meeting a social dinner was held, Mr. **Higgs** in the chair.

The **Chairman** proposed the usual loyal toasts, after which Mr. R. A. **Robinson**, Jun., proposed the toast of the

Thames Valley Chemists' Association.

Though the Association had only been founded six months, it now had some sixty members.

The **Chairman**, in response, thanked the officers of the Association for the support which they had given him. "Nihil Sine Unitate" was the motto of the Association; he was quite sure that without unity they could accomplish nothing. He cordially thanked those present for their reception of the toast.

Other Toasts.

The other toasts included "The Chairman," proposed by Mr. **Palmer**, and "The Visitors," proposed by the **Hon. Secretary** (Mr. F. Harvey), and responded to by Mr. R. H. **Jones**, who had taken a prominent part in the founding of the Association.

Subsequently the **President** proposed the health of the Secretary, and eulogised the efforts of that gentleman in organising that very successful evening.

A musical programme, to which several members and visitors contributed, was an important feature of a most successful entertainment.

LEGAL INTELLIGENCE.

Pharmacy Act, 1868.

Proceedings at Bradford Under Section 15.

Pharmaceutical Society v. Bairstow.

On Saturday, October 24, 1903, at Bradford County Court, before his Honour Judge Bompas, K.C., an action was heard in which the Pharmaceutical Society sued Herbert Bairstow, an unqualified assistant to Messrs. Forshaw and Snow, of Westgate, Bradford, for two penalties of £5 each, under Section 15 of the Pharmacy Act, 1868, for selling poisons. Mr. A. Beldon appeared for the Pharmaceutical Society, and Mr. Last was for the defendant.

Mr. Beldon, in opening the case for the prosecution, said that the case was regarded of more than usual importance, because Messrs. Forshaw and Snow were very well known to the public of Bradford, and attracted large numbers of people to their shop by advertising on a large scale. The offences, which were committed on July 8 and 18, consisted in the making up of a prescription which contained morphine in appreciable quantity. The sale would not be denied, but he understood that two special defences would be set up. One of these was that the defendant was qualified by examination under the Apothecaries Act, 1815, and the other was that he was exempted by Section 16 of the Pharmacy Act of 1868, which related to the position of apothecaries. His answer to these defences was that Bairstow was not an apothecary, either by examination under the Act of 1815 or in any other way, nor was he exempted by Section 16 of the Pharmacy Act. It might be found that the defendant would produce an apothecary's assistant's certificate, but he (Mr. Beldon) had the Apothecaries Act there, and that showed that the apothecary's assistant was only entitled to compound and dispense medicines to a fully qualified medical man. Again, if this defence were sound, it was a rather curious fact that when proceedings were taken against Bairstow in 1898, he did not raise this defence at all but paid the penalty.

Mr. Harry Moon, having produced the registrar's authority, was cross-examined at great length by Mr. Last as to the manner of appointment of the Registrar, the questions being on similar lines to those put by Mr. Dunn in the Pickup case at Leeds on the 21st inst.

Mr. Last submitted that the defence was entitled to further documentary proof of the appointment of Mr. Bremridge as Registrar, and that such strict proof was all the more necessary than ordinarily in County Court practice, when it was a case of an action for penalties by a Society which went up and down the country trapping people with penalties.

Mr. Beldon: I object to the word "trapping."

His Honour: I think it does work which is extremely essential. Your client, Mr. Last, may be the most excellent person upon this earth, but there are people in this country who are acting as chemists without being qualified, and it is a danger to the public which ought to be put down, and I should think that anyone ought to help in every way that he can the persons who are endeavouring to do a great public duty. It seems to me that when, by a certificate signed by the Society—they necessarily knowing whom they appointed—a person is stated to be their Registrar, to ask for any stricter proof than that would be making the law of proof a delusion and a snare.

Mr. Last: Would your Honour be kind enough to take a note of the objection?

Mr. Beldon: And will your Honour also please take a note of the fact that Mr. Moon says he was present when Mr. Bremridge was appointed Registrar?

Mr. Last: That is only secondary evidence.

His Honour: No, that is not secondary evidence. The evidence of a person who has been present, and swears to it is better evidence than a mere written copy of a resolution. What better evidence could you have than that of a witness who swears that he was there when it was done? I will take a note of your objection.

In answer to further questions by Mr. Last, Mr. Moon said he could not say that he had ever seen an original assistant apothecary's certificate, and he was not aware that such a certificate qualified the holder for the sale of poisons. He knew that persons holding such a certificate had paid penalties, but he was not aware that any action on this question had been tried.

Mr. Last read an advertisement from a newspaper, in which a board of guardians advertised for a dispenser, who "must be a licentiate of the Apothecaries' Society, or hold their certificate," and he stated that these certificates were held in similar estimation in the Army, the Navy, and the hospitals.

His Honour said it did not matter what the guardians choose to think about the law.

Arthur Foulds, inquiry agent, of Manchester, proved the purchase, on two occasions, of a mixture containing morphine. He said he took a prescription for a cough mixture, and it was made up by defendant, Bairstow, in both instances. Bairstow never left the shop on these occasions, but went behind the dispensing screen. The only other person who was behind the counter was Mr. Charles Forshaw, who was not a qualified chemist and druggist.

Mr. Thomas Tickle, of Exeter, analyst, proved that the quantity of morphine in the mixture was 0·18 of a grain. Smaller quantities than this, he stated, had caused loss of human life. There were no directions on the bottle as to the dose which should be taken.

Mr. Last then opened his case for the defence. He said that Section 16 of the Pharmacy Act exempted persons qualified by an examination under the Apothecaries Acts to dispense medicines. In the present case the defendant held a certificate from the Apothecaries' Hall, Dublin. (Certificate produced, dated June 5, 1903.) Prior to obtaining this qualification the defendant was dispenser for several years to Dr. Rabagliati, of Bradford, who, his Honour would know, had one of the most extensive practices in the city and district. Now, the object of the Pharmacy Act was declared to be "to prevent the sale of poisons by unqualified and ignorant persons." In this case it was obvious that the defendant was not an ignorant person, and he submitted, further, that he was qualified to dispense by virtue of his certificate, and he would point out that in this case the charge was for dispensing two prescriptions.

Mr. Beldon: Selling, not dispensing.

His Honour: Under which Act is the certificate?

Mr. Last: It is a certificate by the Apothecaries' Hall in Dublin, which is equivalent to the Apothecaries' Hall in London.

Mr. Beldon: This is the Apothecaries Act, which I now hand in.

His Honour: I see that the apothecary and the assistant to the apothecary are two perfectly distinct qualifications. Do you think this is the same for Ireland as for England?

His Honour: You must give me the Act, Mr. Last, which makes that certificate a proper authority.

Mr. Beldon: My friend has given notice of special defence under the Apothecaries Act, 1815, and now he puts in a certificate under the Irish Act.

Mr. Last: At the time that special defence was filed I was under the impression that that Act of 1815 governed the Irish Act as well, but I have since ascertained, but only very recently, that the Apothecaries Act, 1791, under which the apothecaries of Ireland exist, is the one under which that certificate has been granted.

His Honour: A person qualified in Ireland is not necessarily qualified in England. If the English Act grants powers to sell poison to a legally qualified apothecary, that means legally qualified in England.

Mr. Beldon: I challenge my friend to show any section of any Act anywhere which makes an apothecaries' assistant an apothecary.

Dr. Lodge: It is pretty generally recognised that a professional man, having obtained a qualification in Ireland, can practise also in England.

His Honour: I cannot profess to be wise enough to recognise things unless you have shown me the Act which authorises them. Supposing a German apothecary came here, or one from China, he must be legally qualified, according to the law of this country, before he can act.

Mr. Beldon: But supposing an Irish apothecary were entitled; that does not cover the case of an apothecary's assistant. It is sufficient for my purpose that an assistant is not an apothecary, under Section 16.

The argument then turned on the question whether Bairstow's action had been selling or dispensing, and on that point Mr. Beldon quoted the case of Pharmaceutical Society *v.* Wheeldon.

Continuing his statement of case for the defence, Mr. Last held that, whether the defendant was qualified or not, if there was upon the premises a person who was duly qualified, and under whose supervision he was acting, then he was guiltless.

Mr. Beldon held that the meaning of such supervision was governed by the judgment of Mr. Justice Hawkins in the Wheeldon case as to the meaning of "personal superintendence."

Dr. P. G. Lodge then gave evidence, stating that he held that the certificate was as good in England as in Ireland.

Mr. Beldon objected to these statements as evidence.

Dr. Lodge: These medical Acts are better understood by doctors and others who are specialists on them.

His Honour: I dare say Mr. Moon can tell me whether the Pharmaceutical Society do, as a matter of practice, accept these Irish certificates.

Mr. Moon: We accept no certificates whatever in lieu of the qualifying examination.

His Honour: And you cannot refer me to any Act which makes an Irish certificate binding upon you?

Mr. Moon: No, your Honour.

Dr. Lodge: My qualification in the Apothecaries' Hall, Dublin, is registered as a legal qualification in this country.

His Honour: The Medical Act may, for anything I know to the contrary, authorise the Medical Council to register persons who have received medical qualifications in different parts of the United Kingdom; but the Apothecaries Act contains no such provision. I cannot—because, for some reason, it is arranged that the qualifications for doctors in England and Ireland shall be all one—say that it follows that the qualifications for chemists of England and Ireland should be all one.

Dr. Lodge: Apothecary is a medical term under the Act, and the apothecary is a medical man.

His Honour: Do you say that, supposing somebody came with a qualification in China, that we must register him?

Mr. Last: I do not contend for anything of the sort.

His Honour: The laws of Ireland are no more binding in England that those of China are. The certificate does not give the defendant any powers in England. The certificate, in any case, gives no authority to sell. It does not profess to give any authority to sell; it only gives authority to assist a qualified man in making up a prescription. On that point I agree with Mr. Beldon.

Herbert Bairstow, the defendant, deposed that on both the occasions in question, when he got the prescription, he took it behind the dispensing screen and into a room on the right of the screen in which a Mr. Parker, who was a qualified chemist, was in attendance. Mr. Parker examined the prescription, and said it was all right, and he might make it up. Mr. Parker could not be seen by anyone at the shop counter.

In the course of a lengthy cross-examination, the witness said that he made up the prescription, put the label on it, handed it to Mr. Foulds over the counter, and received the money for it.

Mr. William Parker deposed that he was a registered chemist who had retired from business, and being a friend of Mr. T. C. Forshaw, and having all his time on his hands, attended the shop in the absence of Mr. Forshaw, to superintend when necessary. He corroborated the evidence of Mr. Bairstow. Nobody at the counter could see into the room which Mr. Bairstow had described.

In cross-examination, witness stated that he simply went to the shop as a friendly action to Mr. Forshaw, and did not receive any remuneration. Mr. Forshaw was not in a position to dismiss him or insist upon him coming.

Mr. Last, in reference to a conflict of testimony between Mr. Tickle and Mr. Parker as to the dangerous nature of 0·18 of a grain of morphine, referred his Honour to the case of Pharmaceutical Society *v.* Delve.

Mr. Beldon said he might save Mr. Last some trouble by quoting the more recent case of Pharmaceutical Society *v.* Armson, Law Reports, 1894, 2 Q.B., page 720. Going on to reply on the defendant's case, he emphasised the point that whatever the powers of an apothecary were, the defendant was not an apothecary, but an assistant, and the exception of Section 15 only applied to the apothecary. As to the defence, founded on the alleged supervision of Mr. Parker, he did not think that it was necessary for him to show that that was untrue, because, if it was true, the supervision was not such as came within the meaning of the decision. If it was necessary to go so far, however, he should argue that the evidence of Parker and Bairstow was not to be relied upon, because there was absolutely nothing in the nature of the prescription which would make the circumstances of its sale stand out particularly in the recollection of these two witnesses. As to the point of supervision, Mr. Justice Hawkins had made it clear in the case referred to that the supervision must be actual personal supervision by the person qualified—employer, or the qualified assistant. In this case there was no evidence of actual supervision of the sale by anybody, for all that was claimed was that Bairstow went into a room and showed Parker the prescription, and then came out, leaving Parker in the room, and carried out the sale himself, so that Parker had absolutely nothing to do with the sale, and the offence charged was not dispensing, but selling. And in this case there was no supervision by a qualified person within the meaning of the Act of that sale, because Parker was neither the employer nor a qualified assistant to the employer. In one sense the sale was by Forshaw, the employer, but not in the sense of the sale referred to in Section 15, because the sale could not be effected by a person who was not on the premises at all. The sale was made either by Parker—who, though a qualified man, was evidently not a qualified assistant to Forshaw, for he was not employed by Forshaw—or by Bairstow, who was not a qualified man at all. It could not be a sale by Parker, because he had no interest in the business. In any case, it was evidently not a sale by a qualified man. The Pharmacy Act declared most decisively that it should be unlawful to sell any scheduled poison unless the person selling was qualified. And Mr. Justice Hawkins's decision determined that the sale must be either by "a qualified employer or a qualified assistant to such employer."

A long argument then ensued as to the extent and nature of the personal superintendence which was necessary, his Honour suggesting that he was against Mr. Beldon, on the point that Mr. Parker could not be regarded, within the meaning of the Act, as a qualified assistant to Mr. Forshaw, though the advocate pointed out that Parker would not be legally responsible for any neglect, or in any other way, and was simply used as a cover for evading the intention of the Act.

Mr. Beldon said he had further to submit that it was not true that Parker was on the premises, and that the prescription was taken to him, but that the evidence of Mr. Foulds as to the impossibility of this proceeding was conclusive.

Ultimately, after three hours and a-half of hearing, his Honour said that it was quite clear that he would have to give his decision upon the facts as well as the law, and he would, therefore, see the shop, in company with Mr. Bairstow and Mr. Foulds, that afternoon, and give his decision on Tuesday.

Judgment.

On Tuesday, October 27, his Honour gave judgment, and said he must decide in favour of the Pharmaceutical Society upon every ground. He had been to see the shop at which the defendant was employed, and, whilst he was not going to charge anybody with saying what he knew to be false, he had got to make up his mind whether it was more likely that the witness was mistaken who said that he went there for that particular sale, and carefully watched what happened, or that the witnesses were correct who, though there was nothing at all to call their attention to that particular sale, deposed that they remembered that the prescription was submitted by Bairstow to Parker. He thought that, according to the ordinary rules as to the most probable evidence, it was most probable that the evidence of the witness whose attention was directed to that particular act at the time was correct. Therefore, he did not think that Mr. Bairstow went and consulted Mr. Parker with reference to that particular sale. Moreover, he thought that if, on the contrary, the defendant was correct in stating that he went and consulted Mr. Parker, even that would not, on the authority of the case which had been quoted, make the sale other than a sale by Bairstow. According to the ruling in that case, Bairstow would be the person who sold, unless the sale was personally superintended by a qualified chemist, and, whilst he thought that Parker would have been a qualified chemist for that purpose, he thought that it would be necessary for Parker to have superintended the sale in the sense of having seen the person to whom the sale was made, and having seen that the goods sold were the goods which he had authorised to be sold. Merely sitting in a room and issuing this authority to make up and sell the prescription did not change the person who sold from the person who made it up and handed it over the counter to the person who authorised him to sell—Mr. Justice Hawkins gave what he considered was the reasonable meaning of the Act of Parliament in that respect—and he thought, therefore, that even if Bairstow and Parker were correct in what they said, that would not have transferred the act of selling from the unauthorised person to an authorised person. Therefore the question arose whether Bairstow had any qualification which was sufficient to justify the sale; and he thought there was no such qualification. The Act of Parliament said expressly that no one should sell who was not qualified under Section 4, with the exception of the qualified apothecary. He did not think, in the first place, that a qualified assistant apothecary was a qualified apothecary; and it appeared to him to be clear that if the Act said nobody could sell poisons but a qualified person, it meant that nobody could do this but a person qualified according to the law of England, and recognised by the law of England. Although it seemed that in the case of doctors their Medical Act had appointed an Irish representative upon the Council, and had made certain arrangements which enabled them to practice in England, the practice of chemists was regulated by a wholly different Act of Parliament, which he had looked into very carefully, and stated that a certain particular body of English people had the right to be treated as chemists; and he did not see that the Irish Parliament—as he supposed it was in the days referred to—could make a person a chemist in England; and therefore he did not think that the Irish apothecaries' certificate would have been sufficient if it had been produced. But it was not necessary for him to decide that, because, at any rate, the assistant apothecaries' certificate would not be sufficient. Mr. Bairstow did, himself, sell these poisons, and there was nothing to protect him; and, therefore, the two penalties of £5 for each offence must be inflicted. He understood that the suggestion was made that it would be better to enter judgment, not in the form of a mere debt, but expressly as a penalty, because there was a good deal of difficulty the other day about the enforcement of a penalty. He still retained his opinion that it would be sufficient to enter it as an ordinary judgment, and that would not prevent it being treated as a penalty; but as it seemed that some other Courts, at any rate, entered it in a different form, stating expressly that this was a penalty, and that removed all doubt, he thought that, if nothing was shown to the contrary, judgment should be entered in that form.

Mr. Last said he did not remember any such point being raised in regard to this action.

His Honour said that in reference to the last penalty which was inflicted in that Court, there was an application to the Registrar to make a note upon the judgment obtained under the Act which would enable the person complained of to be imprisoned. The Registrar expressed one opinion and he (his Honour) entertained another. He supposed he might have directed the Registrar, but the Registrar thought that the Court above ought in any case to be appealed to, and he was always anxious that when his opinion was doubted the Court of Appeal should be appealed to; but the Registrar agreed that, at any rate, his (his Honour's) view would be right if the judgment was entered in a different form, and that certainly suggested that it was desirable, if there was no difference of opinion, to save the expense of going up to the Court above by entering it in that form.

Mr. Beldon said he had been going to make application to his Honour upon that point if his Honour had not mentioned it himself. He also applied for costs on a higher scale than ordinary, claiming that the case came within Section 119 of the County Courts Act.

Mr. Last held that this was an ordinary case merely, and not coming within the meaning of any one of the three points in Section 119.

His Honour, however, upheld Mr. Beldon's contention, and allowed costs under Scale B.

Mr. Last then applied that the defendant should be allowed to pay at 10s. a month, stating that he had a wife and six children, and only 30s. a week salary.

Mr. Beldon: I should think the master ought to pay this.

His Honour: I should think the master, who is getting his man cheaper because he will do what is wanted, and at whose instigation obviously this course of procedure has been taken, ought to pay. It was evident from what Dr. Lodge stated that the master was pretty keenly interested in this matter, and he ought to pay something.

His Honour made an order for payment at the rate of £1 a month.

Indecent Advertisements Act.

A Charge Dismissed.

On Monday, October 26, 1903, at the Marylebone Police Court, Mr. Plowden had before him the case of Fredk. Neal, chemist, of 297, Edgware Road, who was summoned for, on August 17 last, exhibiting to view in his shop window certain printed matter of an indecent nature, contrary to the Indecent Advertisement Act. Mr. Ricketts, junior, solicitor, appeared for the defendant.

The case was heard at length on September 10, and a report of the proceedings appeared in the Journal (see page 439). The summons was then adjourned by the magistrate, in order that the defendant might have an opportunity of carrying out his promise to remove the advertisement complained of from his window. Mr. Ricketts pointed out that his client had removed the advertisement complained of, as he promised he would, and had not exhibited it since. Mr. Plowden said he had no power to put pressure upon the defendant to carry out what he had undertaken, but as he had availed himself of the opportunity given him to do so, the summons would be dismissed.

Grimsby Sessions.

Medicines or Refreshments.

On Tuesday, October 27, 1903, before the Recorder, John Reinecke, herbalist, appealed against a conviction for keeping open a refreshment house for the sale of liquors in prohibited hours.

Appellant claimed that the beverages sold were medicines, not refreshments. The drinks in question were dandelion stout and sarsaparilla.

The appeal was allowed. It is considered probable that the Board of Inland Revenue may now carry the case to the High Court.

King's Bench Division.

The Sale of a Business.

On Thursday, October 29, 1903, before Mr. Justice Kennedy and a special jury, Mr. H. W. Scobell, chemist, sued Mr. W. Fletcher Gadd for damages for breach of warranty in regard to the sale of a chemist's business at Ramsgate by defendant to the plaintiff. Mr. Shearman, K.C. and Mr. Hills appeared for the plaintiff, and Mr. Bankes, K.C., and Mr. Norman Craig for the defendant.

Mr. Shearman said the plaintiff claimed damages from the defendant because he said a chemist's business which defendant sold him did not come up to the representations made of it by the defendant. In May, 1902, the plaintiff was looking for a chemist's business, and he was introduced by Messrs. Orridge, business agents, to the defendant, who had one at Ramsgate which was for sale. It was represented by the defendant that the nett profits of the business amounted to some £340 a year, and plaintiff agreed to buy it for some £600; but he carefully put in the contract words that he bought it on the warranty that the profits amounted to £340 yearly. Soon after the plaintiff bought the business he found that the profits were nothing like £340 a year, but that, in fact, he had to carry it on at a loss. Subsequently, finding the defendant would not take back the business, or make any terms to him, plaintiff had to dispose of it at a great loss, and now sought to obtain damages from the defendant for the losses he had sustained.

Mr. Bankes, for the defendant, said his case was that the figures given by the defendant were absolutely correct.

Mr. Scobell, the plaintiff, was called, and examined at some length, and the case was then adjourned.

POISONING CASES AND INQUESTS.

The deaths by poisoning reported during the seven days ended Wednesday, October 28, 1903, numbered sixteen :—

Poison.	Accident.	Suicide.
Carbolic Acid	—	1
Chlorodyne	1	1
Coal Gas	—	1
Hydrochloric Acid	—	2
Hydrocyanic Acid	—	2
Laudanum	—	2
Morphine	—	1
Oxalic Acid	—	2
Potassium Cyanide	—	1
Kind not stated	—	2
Total	1	15

Carbolic Acid.—A woman at New Malden committed suicide by taking carbolic acid.

Chlorodyne.—A woman at Greenwich died from an accidental overdose (3 drachms) of chlorodyne. An engineer's wife at Richmond committed suicide by taking the contents of two bottles of chlorodyne. The coroner in this case commented on the ease with which the poison could apparently be obtained.

Coal Gas.—A silversmith in North London committed suicide by inhaling coal gas.

Hydrochloric Acid.—A man in London, and another in Birmingham, committed suicide by taking hydrochloric acid.

Hydrocyanic Acid.—The wife of a doctor at Upper Holloway committed suicide by taking prussic acid. James Thomas Livesey, a chemist's assistant at Jarrow-on-Tyne, was found dead, having taken prussic acid.

Laudanum.—A man at Perth, and a woman at Middlesbrough committed suicide by drinking laudanum.

Morphine.—An elderly gentleman at Paddington took an overdose of morphine.

Oxalic Acid.—This was taken with fatal effect by a woman at Sheffield and a man at Margate. The latter had purchased four packets of the acid from a limited company.

Potassium Cyanide.—A master jeweller committed suicide on Hampstead Heath by taking a quantity of potassium cyanide.

Kind Not Stated.—The nature of the poison taken suicidally by a man at Leeds was not stated. A man at Liverpool died fter taking some corrosive poison.

Miscellaneous Poisoning Cases.—A young lady at St. Louis, America, took various poisons, and wrote down her impressions while waiting for death. The note ran as follows;—"Nine o'clock.—I have taken laudanum. Ten o'clock.—Still no effect. The neighbours are so noisy that I cannot sleep. Eleven o'clock.—I take sulphate of copper. 11.30.—No effect. Midnight.—I mix sulphate of copper, laudanum, rum and sugar, and put into it some 500 phosphorus matches. I take several mouthfuls; the thing does not taste so bad——" A nurse at a French hospital attempted to commit suicide by swallowing two tubes of Eberth's pure culture of the typhoid bacillus.

REVIEWS AND NOTICES OF BOOKS.

'Practical Orthochromatic Photography.' By Arthur Payne, F.C.S. Pp. 178. Price 1s. net. London: Iliffe and Sons, Limited. 1903.

Early in the present year Mr. Payne delivered a lecture before the Newcastle-upon-Tyne and District Chemists' Association on "Orthochromatic Photography in Practice," which was full of interest to those present in any way connected with photography. He has now set forth the principles and practice of orthochromatic photography in the form of a textbook, which will well repay perusal by chemists and others having a practical knowledge of ordinary photography. The work does not profess to deal exhaustively with the subject, but the author has devoted considerable attention to the application of the principles of orthochromatic photography, so as to enable the photographer to understand the scientific facts upon which the practice is based, and to help him to utilise that knowledge for improving his work.

'Real-Enzyklopädie der Gesamten Pharmazie.' Edited by Dr. Josef Moeller and Dr. Hermann Thoms. Second Edition. Vol. I. A to Antidyspepticum. Pp. 720. Price 18 M. Berlin: Urban and Schwarzenberg, N., Friedrichstrasse, 105b. 1904.

It is difficult to give an adequate idea of the magnitude of this encyclopædia, in the preparation of which about one hundred of the best-known authorities on medicine and pharmacy in Germany and Austria have co-operated. If every letter of the alphabet requires as much space as the letter "a," the completed work will consist of some fifty volumes, each of seven hundred pages. Not only is every chemical and drug in use described somewhat fully, but illustrated botanical notes are given on the various plants used in medicine. In many cases the illustrations represent the microscopic features of the drug-powder as well as the external characters of the plant. In addition, formulæ are given for the preparation of such compounds as Prince Albert Cachoux. Biographical notes of distinguished pharmacists and medical men form another feature of a colossal work which has been executed on the most comprehensive scale. As a work of reference, the Real-Enzyklopädie stands absolutely alone.

PRACTICAL NOTES AND FORMULÆ.

Hair-wash for Loss of Hair.

Eau de Cologne, 400; glycerin, 50; tincture of cantharides, 20; nitrate of pilocarpine, 1.—*Bull. gén. de Thérapeut.*, **145**, 160.

Naphthol-Camphor Ointment.

The following ointment of naphthol-camphor and zinc oxide gives excellent results in some cases of eczema :—Naphthol-camphor, 1; zinc oxide, 10; vaseline, 100. Mix.—*Bull. gén. de Thér.*, **145**, 192.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

The Drug Sales.

London, Thursday, October 29, 1903.

At the Auctions held to-day only new goods were offered, and of the seventeen catalogues none were heavy. Generally speaking, the demand was good, and in some cases considerable competition was evinced by buyers. Among the articles catalogued were several in which not inconsiderable interest had been taken during the previous few weeks in the private market, as, for instance, Cascara Sagrada, Cod-liver Oil, Menthol, Ergot of Rye, Ipecacuanha, and Senega Root. As however, in the case of the four former the lots offered failed to sell, the fact of their being included in the sale is hardly a guide to their actual value. As regards the two latter, both realised the anticipated high rates. The feature of the sales was the keen competition with which the Ipecacuanha was disposed of, details of which are given below. Aloes realised good prices, and sold well, considering the quantity offered. Jamaica Honey again obtained good prices. Senna was in small supply, and the high prices were fully maintained; no advices of large shipments are coming forward, and prices are not likely to decline. For the most part, however, values were unchanged.

ALOES.—Good bright Capey Curaçoa, partly soft, realised up to 25s.; medium liver sold, without reserve, at 21s.; fair hard bright Cape from 45s. 6d. to 50s., according to quality.

BALSAM CAPIVI.—Thin Para cloudy to bright sold at from 1s. 2d. to 1s. 4d. Maranham bright bought in at 1s. 9d.

CAMPHOR.—1 case only, country damaged, catalogued without reserve, was knocked down at 152s. 6d.

CANADA BALSAM.—Thick bright sold at 1s. 11d. per lb.

CARDAMOMS—Were about steady at last low prices. Decorticated rather easier at 1s. for good. The offerings were irregular, including sea-damaged goods.

CASCARA SAGRADA.—100 bags were catalogued; these were held for 100s. per cwt.

COCA LEAVES.—Brownish-green Ceylon sold at 8d. to 11¼d.

COCCULUS INDICUS—Slightly damaged, were disposed of, without reserve, at 7s. 3d. per cwt.

COD-LIVER OIL.—Norwegian was held, no price being mentioned. 10 barrels, catalogued "without reserve," were bought in at 500s. per barrel, there being no competition. Newfoundland was bought in at 18s. per gallon, with 16s. 6d. as the price.

DRIED TURTLE—Sold at 2s. per lb.

ERGOT OF RYE—Was firmly held.

EUCALYPTUS OIL.—Some cases of common stuff were disposed of without reserve at 9d. to 9¾d.

GUM ARABIC.—44 cases Kurracnee were disposed of at 23s. per cwt.

GUM BENJAMIN.—Sumatra, fair seconds sold at £6 5s. to £6 10s.

HONEY.—Jamaica realised good prices, varying from 18s. 6d. to 28s.

IGNATIUS BEANS.—Sound realised 4½d. and slightly wormy 3¾d. to 4¼d.

IPECACUANHA.—A few bales Mattogrosso realised 6s. 1d. for fair bright, part wiry. The bulk of the offerings were firmly held for 6s. 4d. For Minas a bid of 5s. 9d. was refused, this being bought in at 6s. 6d. Fine selected cultivated Johore realised 5s. 10d., but the feature of the sale was the keen competition with which a quantity of Johore, made merchantable and sold on account of the underwriters, was disposed of; this fetched from 5s. 6d. to 5s. 8d., whilst even the damaged portion (mouldy to slightly mouldy) removed from bales made merchantable fetched from 5s. 1d. to 5s. 6d.

ISINGLASS.—15 bales Japanese strip were disposed of, without reserve, at 1s. 5d. per lb.

KOLA NUTS.—Good West Indian found buyers at from 4¾d. to 5d. for sound and 4d. for mouldy.

LIME OIL.—Distilled sold at 1s. 5d. per lb.

MENTHOL.—Kobayashi firmly held for 22s. 6d. per lb.

ORANGE OIL.—A case containing 8 bottles bitter and 1 sour sold, without reserve and with good competition, at 6s. per lb.

RHUBARB.—As usual, the Rhubarb offerings were for the most part held at firm rates, bold round orange-coated Shenshi for 3s. 6d.; medium ditto, 3s.; good pickings, 1s. 10d. 2 cases small to medium bold flat high-dried were knocked down at 1s., and small at 10d. Medium flat Canton sold at 1s. A small quantity of wormy was disposed of without reserve.

SENEGA ROOT.—3 bales sold before the sale at 3s. 4d. per lb.

SENNA.—Values were fully up to last sales, if not rather dearer. Only about 150 bales were offered. Bold green leaf fetched 4¼d.

SARSAPARILLA.—Jamaica, sea-damaged, sold at from 9½d. to 11d.

STICLAC—Sold with spirited competition at from £7 to £7 7s. 6d. per cwt.

TONQUIN BEANS.—Frosted Paras sold at 1s. 3d.

WAX—Sold as follows:—Madagascar, slightly wormy, £7 2s. 6d.; Zanzibar, £6 15s.; Jamaica, £7 10s.

General Markets.

The General Market in Drugs and Chemicals continues quiet. There are few changes to report. Shellac, Cloves, and Podophyllin are dearer, Quinine is harder, Menthol and Peppermint Oil are both firm.

ACID CITRIC.—1s. 0½d. per lb.

ACID TARTARIC.—English on the spot, 1s. 1d.; foreign, 1s. 0¼d. to 1s. 0½d.

ALUM.—Lump, £5 12s. 6d.; powder, £6 2s. 6d.

BISMUTH CARBONATE.—8s. 1d. per lb.; subnitrate, 7s. 4d.

BLEACHING POWDER.—English, £5 2s. 6d.

BORACIC ACID.—Crystals, 22s. 6d.; Powder, 24s. 6d.

BORAX.—Crystals, 13s. 6d. to 14s. 6d. per cwt., according to quantity; powder, 15s. 6d. to 16s. 6d.

BROMIDES.—Potassium Bromide is quoted at 1s. 11½d. per lb. There is a small quantity of American on the market, which is being quoted a trifle lower.

CINNAMON.—10 bales were offered at Wednesday's sale, and sold without reserve, hard coarse to fair Quills from 4d. to 8d.

COCAINE.—15s. 6d. to 16s. per oz. for the hydrochloride, and 18s. to 18s. 6d. for the pure alkaloid.

COCOANUT OIL.—Ceylon spot, £25 10s.; Cochin spot, £31.

CODEINE.—9s. 5d. per oz. for the pure alkaloid.

COD-LIVER OIL.—Norwegian, 525s. to 550s., according to quantity and brand; Newfoundland, 450s. to 480s.

CASTOR OIL.—Quiet. Belgian 1sts, £20 2s. 6d.; 2nds, £18 12s. 6d.

CLOVES.—At the spice sales 13 cases Penang were offered, and sold privately, but no price was mentioned. Dark Zanzibars were held for 7¾d. In the private market Cloves have advanced, and a fraction below 8d. is now quoted.

CREAM OF TARTAR.—86s. for 98 per cent.

GINGER.—At Wednesday's Spice Sales Cochin was in good supply, but the demand was slow. A small part sold at previous rates.

GLYCERIN.—68s. per cwt. for ½-ton lots.

IODIDE OF POTASSIUM.—Unchanged at 8s. 9d. per lb.

IODINE.—9s. 9d. to 10s. per lb. for the resublimed, according to quantity.

IODOFORM.—11s. 8d. per lb. for the pure crystals or powder.

JALAP—Is scarce on the spot.

LINSEED OIL.—Easier. London spot pipes £17 10s.; barrels £17 15s.

LIQUORICE JUICE—58s. per cwt. for La Rosa brand, in large lots.

MENTHOL.—Kobayashi, in all probability, 23s. would still buy.

MERCURIALS.—Calomel, 2s. 8d.; corrosive sublimate, 2s. 4d.; red precipitate, 2s. 11d.; white precipitate, 2s. 11½d.; mercuric sulphate, 2s. 4d. per lb.

MORPHINE.—4s. 6d. to 4s. 8d. for the hydrochloride.

NUTMEGS—Sold at steady rates at the Spice Sales.

OLIVE OIL.—Mogador, £32.

OPIUM.—No change in any of the qualities.

OXALIC ACID.—2⅝d. to 2⅞d., delivered free London.

PALM OIL.—Lagos on the spot £28 5s.

PODOPHYLLUM ROOT.—A cable was received this morning quoting 42s. 6d. as the lowest price at which it is obtainable.

PEPPERMINT OIL.—No change since last report. H.G.H., 15s. 6d.

PIMENTO—Was firm at the Spice Sales; ordinary mixed blacks to fair sold at 4d. to 4¼d.

QUICKSILVER—£8 7s. 6d.

QUININE—Is harder. 1s. 0¾d. is the spot price for the sulphate in the second-hand market; 1s. 0⅞d. for March delivery.

RADIUM.—A sale has been made of Radium (50,000 unit) at 200s. per gramme.

SAFFRON.—35s. is asked for this year's. The new crop, it is anticipated, will be short.

SARSAPARILLA.—Mexican comes at 8d., c.i.f.

SHELLAC—Again higher; sales of fair TN orange have been made at 222s.

TURPENTINE.—American spot, £2 5s.

VALERIAN ROOT.—The new Belgian crop will be late. Owing to the very wet weather, the labourers are unable to pull the root. The samples which have been shown are nice and bright.

PATENTS AND TRADE MARKS.*

New Complete Patent Applications.

STOPPING TEETH (No. 26,264 of 1902).—W. P. Thompson, 322, High Holborn, London, W.C. (Communicated by the firm of P. A. Kölliker and Co., of Zurich, Switzerland.) Consists in securing fillings of glass, porcelain, enamel, and the like in tooth cavities by means of a platinum pin having a shaft provided at one end with a head and preferably pointed at its other end, provided about its middle with a disc or equivalent projection. Said pin is inserted by means of its point up to the said disc or the like into a mould taken of the tooth cavity, the said mould being then filled with the usual filling in such a manner that a portion of the pin projects therefrom, the filling being then placed in the tooth cavity, which has been previously filled with cement, so that the projecting end of the pin secures itself in the cement, thereby forming a firm connection between the filling and the tooth by means of the pin secured at one end in the filling and at the other end in the cement.

STANDS FOR SURGICAL INSTRUMENTS (No. 26,265 of 1902).—W. P. Thompson, 322, High Holborn, London, W.C. (Communicated by the firm of P. A. Kölliker and Co., of Zurich, Switzerland.) Consists of a vessel for holding surgical and especially dental instruments, which is entirely open above, and has its side or end walls provided with depressions adapted to receive the handle of the instrument, whilst the points or operative parts thereof rest on the bottom of the vessel against a cross wall facing the depression in such a position that the said points or operative parts can come in contact with antiseptic fluid. The said vessel may be divided by means of another cross wall into a larger and smaller receptacle so as to accommodate both large and small instruments.

MANUFACTURE OR RECOVERY OF TERPENE ALCOHOLS AND THE MANUFACTURE OF PERFUMES (No. 26,362 of 1902).—J. Wetter, 37 and 39, Essex Street, Strand, London, W.C. (Communicated by Heine and Co., 6, Schreberstrasse, Leipzig, Germany.) Relates to a process for obtaining from petit-grain oil a rose-scented terpene alcohol, $C_{10}H_{18}O$, termed nerol, which consists in converting the primary alcohol contained in certain saponified fractions of petit-grain oil into acid esters, by treatment with phthalic anhydride or with the anhydrides of other dibasic acids, purifying the said esters, separating from the same a nerol containing geraniol, by saponification with alkalies and recovering with steam or *in vacuo*, and separating the geraniol from the nerol thus obtained by treatment with anhydrous calcium chloride. Nerol is used in the manufacture of artificial perfumery by dissolving same in suitable solvents.

FACE PIECES OR INHALERS FOR THE ADMINISTRATION OF ANAESTHETICS AND THE LIKE (No. 1,765 of 1903).—J. E. Arnold, 31, West Smithfield, London, E.C. The face piece described in this invention consists of a somewhat conical-shaped chamber of metal, having a flanged tubular connection formed or permanently fixed at the smaller end thereof, or forming an integral part therewith. The edges of the larger or face end of the chamber are turned outwardly, so as to allow of the metal being applied direct to the face of the patient. If desired, however, an annular cover or pad of india-rubber, provided with an elastic web or skirt, may be stretched over the said mouth of the chamber or metal face piece. The object of the inventor in forming the said chamber entirely of metal, and having the rubber face ring detachable, is to allow of thorough cleansing of the same, if necessary, in boiling water.

NOTE.—Opposition to the grant of any of the above-mentioned patents must be filed at the Patent Office, on or before December 7, 1903.

New Trade Mark Applications.

TREE AND SPIDER'S WEB device, forming initials "T. G.," for metal salts, metalloid chlorides, inorganic acids of the benzol series, acids of the alcohol series, etc., by Dr. Karl Goldschmidt and Dr. Hans Goldschmidt, trading as Th. Goldschmidt, 18, Salkenbergsweg, Essen-on-the-Ruhr, Germany. 255,671.

"**MERSYREN**" ("**MER**" disclaimed) for a preparation for human use as a preventive of sea-sickness and as a remedy for various ailments, by A. Neagle, the Eastern Extension Australasia and China Telegraph Co., Singapore, Straits Settlements, and E. S. Neagle, Great Eastern House, 20, Bishopsgate Street Without, E.C. 256,268.

"**KUPIDYNE**" label, for medicines for human use (internal and external), by T. M. O'Connor, the Medical Hall, Athlone, Co. Westmeath, Ireland. 256,985.

NOTE.—Opposition to the registration of any of the above-mentioned trade marks must be filed at the Patent Office, on or before November 28, 1903.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and 'Patent Notes for Inventors' free on application.

WINTER SPECIALTIES AND NOVELTIES.

Non-Nicotinic Cigars are a novelty supplied by Dr. Kissling's Agency, 15, Fore Street, London, E.C. These are manufactured in five varieties of selected colonial tobaccos, and the nicotine is extracted. The value of these cigars, from a hygienic point of view, is apparent, and the aroma is practically unaffected.

Dispensing and Other Bottles in a variety of patterns are supplied by Messrs. Edward Taylor and Co., 50, Hanover Street, Liverpool. The bottles supplied by this firm are of good quality and moderate in price, and chemists should send for samples and illustrated price lists. They are sure to be pleased with the result.

Marking Ink and Inking Pads.—Particulars of "Pioneer" marking ink, a good selling line, will be found in the advertisement pages of this issue. Mr. A. H. Uppington also supplies a good self-inking pad for rubber-stamps, which should recommend itself to chemists. Particulars may be had from 250, Borough, London.

Glattolin is the registered name of a little article which should prove a great boon to gentlemen with sore necks and frayed collars. It is neatly put up in the form of a little hard block, which should be rubbed round the edge of the collar. The London address is Dr. Max Lehmann and Co., 68, Basinghall Street, London, E.C.

Icilma Preparations, of which there is a great variety, are supplied from 142, Gray's Inn Road, London, W.C. These preparations have proved of great service in various local affections of the skin. Icilma water is an oxygenised natural mineral water, drawn from the Selama spring, which is recommended to be applied to the skin to produce a natural bloom. Icilma Castille soap is an excellent skin soap.

"Lehcaresor" is a word which is pronounced *le caresser*, and is the name of a new variety of papier poudré, in rose and Rachel tints. The paper, which is bound in little books, is of the finest texture, perfectly absorbent, and the ingredients used for their manufacture are of the finest quality. For full particulars, application should be made to 16A, Grafton Street, Bond Street, London, W., to which address orders should be sent.

"Koresco" Enlarging Camera.—Mr. Wm. Middlemiss, photographic material manufacturer, Nesfield Street, Bradford, is the maker of one of the best enlarging, reducing, and copying cameras on the market. It is not a fixed focus enlarger, but will make pictures or negatives any size up to 15 × 12. The retail prices are:—1/1-plate, complete, 35s.; 15 × 12, 80s. A booklet giving full particulars and trade terms will be sent free to any chemist on application.

Cod-liver Oil and Its Preparations.—Messrs. Allen and Hanburys, Limited, Plough Court, Lombard Street, E.C., having established their own factories in Norway, are in a position to supply cod-liver oil of exceptional purity and freedom from irritating compounds, and their "Bynol" preparation of malt extract and cod-liver oil is one of the most elegant, efficacious, and nutritious on the market. Those who are not already acquainted with this preparation should write for particulars.

"Arabella" is the name of a natural mineral water; according to Dr. Paul's analysis, its composition is as follows:—Grammes per litre: Magnesium sulphate, 21·999; sodium sulphate, 15·414; calcium sulphate, 1·492; magnesium chloride 0·844; magnesium carbonate, 1·266; potassium carbonate. 0·281; iron oxide and silica, 0·016—41·312. It has been highly recommended, and a demand has been created. For inquiries the address is Arabella, Limited, 2A, Hay Hill, Berkeley Square, W.

A Substitute for Cod-Liver Oil.—In consequence of the recent dearth of cod-liver oil and its enhanced value, chemists and medical men have been seeking an efficient substitute for use in the treatment of tuberculosis. One good substitute has been found to be Glycerin Extract of Red Bone Marrow, prepared by Messrs. Armour and Co., of Chicago and London. This is a palatable combination of fresh raw marrow from the bones of young animals, and chemically pure glycerin, and is supplied in 4, 8, and 16 oz. bottles.

Hot-water Bottles, etc.—Few firms have such a wide reputation for surgical rubber goods, and articles of a kindred nature, as Mr. Vincent Wood, 4, Albion Place, Blackfriars Bridge, London, S.E. There are few hot-water bottles on the market to equal those supplied by Mr. Wood, and manufactured at his new rubber works at Carlton. Customers may have their own names printed on these goods. Winter body belts, chest and lung-protectors, bandages of all descriptions, trusses, etc., etc., are a few among the other articles which Mr. Wood is able to supply, and readers of the Journal would do well to send for a price list.

Allenbury's Toilet Soaps and Perfumes.—Messrs. Allen and Hanburys, Limited, Plough Court, Lombard Street, E.C., are prepared to supply chemists with the finest quality milled toilet soaps, superfatted, delicately perfumed, stamped either with a fancy name, or with the retailer's name and address, and attractively packed in prettily decorated boxes In regard to perfumery, highly concentrated French essences may be had in bulk, or put up in handsome cut-glass stoppered bottles for the counter, or in dainty cardboard boxes, Chemists should write for price list, illustrated with reproductions of the various articles in their actual colours.

Woolley's Winter Specialties.—In addition to the "Boval" floor gloss mentioned elsewhere, Messrs. J. Woolley, Sons and Co., Limited, the well-known Manchester wholesale firm, are prepared to supply the trade with a wide range of very choice perfumes for the winter and Christmas season, in fancy cases and otherwise. They also have in their showrooms a fine selection of hot-water bottles, chest-protectors, respirators, inhalers, spray-producers, bronchitis kettles, and other articles for the winter trade. These articles are all described in a new sundries catalogue, about to be issued by the firm, and we would advise readers to apply for a copy at once.

Non-Alcoholic Drinks.—Complaint has often been made at a lack of choice in drinks for teetotalers and of the difficulty experienced in finding non-alcoholic beverages suitable for the cold season. These excuses are somewhat imaginary, seeing that Messrs. Idris and Co., Limited, Camden Town, London, N.W., manufacture a large variety of such beverages. A list of these, together with the prices, will be found in the advertisement pages of this issue. It is hardly necessary to point out, at this time of day, that the goods produced at Pratt Street, Camden Town, are of the very first quality, and will do credit to any pharmacy. For full particulars, readers should refer to our advertisement pages.

The Dancing Season.—Messrs. James Woolley, Sons and Company, Limited, Victoria Bridge, Manchester, direct attention to their "Boval" Floor Gloss, for producing a perfect polish on ballroom floors without the aid of wax. The preparation is put up in tins, as shown in the illustration, to retail at 1s. and 2s., and is applied by dredging the gloss sparingly about the floor. It is perfectly harmless, and imparts an agreeable fragrance to the room.

Cough Mixtures, Emulsions, Etc.—A large number of excellent preparations, elegantly put up for sale, are supplied by Messrs. Lorimer and Co., Limited, Britannia Row, Islington, London, N. Among these are quite a number of specialties which are especially adapted for the cure of winter ailments. Among these might be mentioned Cherry Cough Balsam, an agreeable soothing balsam packed in 6 oz. and 12 oz. bottles, enclosed in attractively designed cartons; this preparation, we understand, has already become popular. Extract of malt with cod-liver oil is another preparation to which this firm has devoted considerable attention, as well as to cod-liver oil emulsion. All these articles can be recommended, and chemists should apply to the firm for particulars as to terms.

The "Mohawk" Oval and Circle Cutter is intended to do away with the annoyance of having to get a new cutting shape for every change of size or shape of oval mounts. It takes but a moment to change from one shape or size to another, and is always ready for use. The base or cutting board is provided with a zinc plate, which can be readily taken off and replaced with a new one when desired. The cutting wheel is made from the finest tool steel, highly tempered, with a perfect cutting edge, producing a clean cut print. The trimmer is simple in construction, and its adjustments are such that any person can adjust it for any size or shape ovals ranging from 2×1½ in. to 8×6 in. almost instantly. It has a graduated scale for setting to size desired. No forms or cut-outs are needed, hence no metallic spots on prints. Messrs. George Houghton and Son, Limited, are the agents, and the price is £2 2s. complete.

Perfumes.—Reference has already been made in these columns to the large assortment of perfume caskets supplied by Messrs. Southall Brothers and Barclay, Limited, Birmingham. But the designs of these were so numerous, it was impossible to mention more than a few of these cases, so that now others which are equally worthy of prominence may be treated on. Amongst these are oblong leatherette cases, in assorted colours bearing embossed gold designs; lacquered handkerchief boxes with lift-off lids; embossed square cases with double lids; lyre-shaped silk-covered case, satin lined with very artistic painted satin top; upright plush cabinet with folding doors and metal fittings, and numerous others equally artistic. All these are reproduced in the original colours in the firm's price list of "Christmas perfumery," a copy of which every chemist, who has any desire to take advantage of the Christmas demand for these goods, should by this time have procured. Mention might again be made of the fact that the firm supplies sample assortments at 20s. each, particulars of which offer will also be found in the price list. The prices are very moderate indeed, and the various caskets should sell well at a good profit.

Cadbury's Specialties.—Messrs. Cadbury and Co., of Bourneville, are noted all the world over for their cocoa and chocolate confectionery. Everybody thinks he knows everything about them, and that, therefore, it will be difficult to find anything new to say; but when he calls at Messrs. Cadbury's showrooms and is shown the latest packages in which chocolate is put up for sale, he begins to realise that to give anything like an adequate description of what is actually new would require much more space than he anticipated. The excellent quality of the chocolate and cocoa supplied by this firm is recognised in almost every household, but this note is intended for chemists who may wish to lay in a stock of saleable goods for Christmas trade, and to those on the look out for such goods perhaps no better advice can be offered than to advise them either to call at No. 2, Rood Lane, London, E.C., and inspect the handsome boxes and caskets there on view, or to write for an illustrated catalogue. Many new designs are being introduced this season to suit all classes; some of the boxes are most artistic productions, and all of them are very suitable for Christmas presents, besides making an attractive display.

Pastilles, Tube Goods, and Other Specialties.—The up-to-date firm whose headquarters are in the town of the three spires were among the first to recognise the importance of the recent decision of the Inland Revenue Authorities and to make arrangements accordingly. Among the recipes already published in the 'P. J. Formulary' are quite a number submitted by Messrs. Wyleys, Limited. These include formulæ for balsam of aniseed, balsam of horehound, and black currant cough syrup, all of which are attractively prepared for sale. Other preparations for which there is sure to be a demand during the coming winter season comprise a series of tube goods, including cold cream, elderflower cream, glycerin and honey jelly, glycerin and rose jelly, lanolin toilet cream, witch hazel cream, as well as chilli paste; each tube is very neatly got up, and there can be little doubt they should find a very quick sale. Pellets, pastilles, and lozenges, of a variety of composition, and for a number of winter ailments, are amongst other specialties supplied from Coventry. These goods, which have been carefully examined by us, are undoubtedly of the finest quality, and can be confidently recommended to chemists by their customers. Full particulars can be obtained from Coventry.

"Ensign" Vidil-Films.—One of the chief disadvantages in connection with the use of roll-film cameras has been the difficulty of ascertaining whether the object to be photographed was in correct focus. That difficulty has now been overcome by the "Ensign" Vidil-Films, made by Austin Edwards, of Warwick. Each film is separately attached to the backing paper, and when exposed may be taken out in the dark-room and developed singly, without disturbing the others. That is, of course, a great advantage; but the principal feature of the new films is that each exposure may be separately focussed by means of a paper focussing screen provided between each film. The films are patented, and are packed in a triangular metal case, this shape being necessary in order to accommodate a spool with a spring clip, which prevents the film from unwinding or becoming loose. They can be used in any camera constructed for roll-films; and, with a view to bringing them before the notice of the public, Messrs. George Houghton and Son, Limited, 88-89, High Holborn, W.C., who are the wholesale agents, intend to distribute ten thousand spools free to photographers who apply for them. They have also organised a competition for photos taken on "Ensign" Vidil-Films, prizes to the extent of £100 being offered. Entries for the competition may be made up to May 30 next.

Christmas and New Year Photo-Mounts.—Messrs. Geo. Houghton and Son, Limited, have just issued their catalogue of Christmas and New Year Mounts for the season 1903-4, and it includes particulars of a great variety of styles and designs. The one shown in the illustration is an attractive mount of "Royal Red," tinted folding outers, handsomely embossed in gold, with motto relief stamped in white on gold ground. The inset of white ivory with embossed slip mount is fastened with white silk ribbon. Sets of assorted mounts are put up in boxes at prices ranging from 1s. to 2s. 6d.

Sundry Lines.—Chemists in London, and those who occasionally come to London, Messrs. F. Newbery and Sons are of opinion, should not miss an opportunity of looking in at their showrooms in Charterhouse Street, E.C., because it frequently happens that they have something to offer in the way of odd lines that it would be to the advantage of chemists to know about. At the present time Messrs. Newbery have a choice selection of perfume caskets and cut-glass bottles of scent at various prices. Quite a new thing is a line of fancy baskets containing one or two bottles of perfume, at from 4s. 3d. to 14s. a dozen. Another novel line which is selling well is oil of lavender, or eau de Cologne, in new, fluted, oval bottles, put up in counter cases of six or a dozen bottles to retail at 6d. and 1s. a bottle. Messrs. Newbery have also designed two new labels for perfume bottles on which the chemist, who orders six dozen 6d. or 1s. bottles, may have his own name and address printed. Then there is a large assortment of sprays, and a good range of manicures from 1s. upwards; a special feature of these manicures is that the scissors included are of good quality. It may also be mentioned that this firm has been appointed agents for Ellis and Goltermann's throat sprays.

John Bell and Co.'s Winter Preparations.—The high quality of the various galenicals and pharmaceutical preparations manufactured by the above firm at their laboratories at 2-10, Hill's Place, W., is too well known to require emphasising here. Attention, however, should be directed to a few of these preparations for which there is sure to be a demand during the coming season of winter ailments. Bell's cold cream, "Cremor Frigidum," is one of the whitest on the market, and will keep without separation or discoloration; it is delicately perfumed, and the price is extremely reasonable. Emulsion of petroleum, which is manufactured either with or without hypophosphites, is another preparation which the retail chemist can conscientiously recommend either to medical men or to his customers, and he would do well to obtain fuller particulars about it. Bell's eucalyptus oil, in original tins, is one of the best oils on the market, and the popularity which it has already attained amongst chemists—the best judges of this drug—is a guarantee of its quality. Another article, of a different nature to the others mentioned, but one which is likely to be popular, especially at Christmas time, is the "Lotus" sachet, put up in imitation pigskin artistic envelopes. For fuller particulars of these goods and other preparations, as well as for quotations, readers should apply to 225, Oxford Street, London, W.

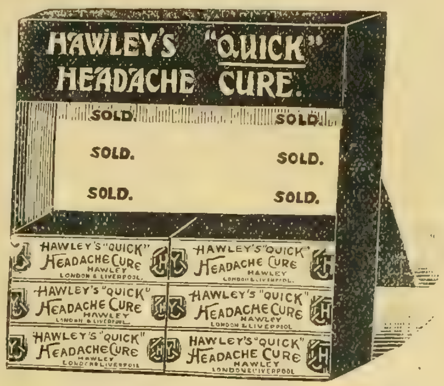
For the Cold and Influenza Season.—The high quality of the *Eucalyptus globulus* oil, "Platypus" brand, is now well established, and the various forms in which the oil and preparations of it are placed on the market are numerous. The Tasmanian Eucalyptus Oil Company, Limited, are supplying this article, very neatly packed in vials, to sell at twopence each; these are again packed in counter-boxes, each containing twelve bottles. There will doubtless be a large sale for this line during the coming season. The oil is also packed for retail sale in larger-sized bottles, each of which is contained in an attractive carton. These goods are well known, and already command a large sale; several preparations, however, have recently been introduced by this firm, and are deserving of a special mention. Among these are a variety of pastilles, including combinations of eucalyptus with malt, glycerin, black currant, honey, and menthol; these lozenges are as palatable as it is possible to make them and exceedingly well made. Tablets prepared according to several formulæ have also been placed on the market. These comprise plain eucalyptus, eucalyptus and menthol, and eucalyptus, menthol, and liquorice, neatly packed in screw-topped bottles. For full particulars as to prices, etc., application should be made to Rochester Buildings, 138, Leadenhall Street, London, E.C.

Perfumes.—Messrs. F. Schutze and Co., 89, Southwark Street, S.E., who hold the wholesale agency for Grant et Cie. and other well-known firms, have now on view at their showrooms a choice assortment of fancy boxes and caskets of perfumes at prices ranging from 4s. to 180s. a dozen, suitable for all classes. A very superior article is a facsimile of the casket of perfumes presented to the Czarina by Grant et Cie. last year; it is a plain olive wood casket with brass handle and ornaments, and three cut "hobnail" bottles, at 24s. Other olive wood caskets containing two cut-glass bottles may be had at from 16s. 6d. each, while a polished oak casket or a tantalus, containing two or three bottles can be obtained at from 11s. 6d. upwards. A very pretty line consists of a handkerchief and perfume case containing three cut-glass bottles, with mirror in lid, and covered with pleated silk beautifully worked to represent the seasons, at 140s. per dozen; another nice line takes the form of a flat carved oak case with two bottles of perfume, at 65s. a dozen, while Japanese caskets, lined with pink satin, are to be had at 72s. a dozen. Then there is a full range of Corbyn and Stacy's perfumes, and a new 6d. line of stoppered bottles at 4s. per dozen net. Another new line comprises miniature bottles of Hansa Platz eau de Cologne on cards at 36s. a gross. A better class thing in eau de Cologne is a new gilt neck bottle in fancy outer to retail at about 4s., and other bottles may be had to retail at 1s. 6d. This firm carry a full line of tinted sprays at from 9s. to 250s. a dozen; also shaving accessories, celluloid goods, mirrors, brushes, dressing cases, manicures, etc.

Maw's Seasonable Presents.—There are few firms who can show such a large variety of specialties for the winter trade as Messrs. Maw, Son, and Sons. At their showrooms in Aldersgate Street, E.C., are to be seen a fine selection of the various toilet requisites which make a pharmacy look attractive, and for which the chemist can always find customers. Among these articles might be mentioned the large stock of handsome pump sprays, as well as of the ordinary bellow sprays fitted to cut-glass ornamental bottles, samples of which have been inspected by a representative of the Journal. These bottles are, without doubt, amongst the most artistic produced. Caskets of perfumes, in numerous designs, comprising a variety of leather cases, which contain cut-glass bottles of scent, are also on view at the showrooms. Puff-boxes of all sizes and patterns, toilet sets, compact spirit lamps, and all kinds of articles suitable for Christmas presents are supplied by this firm. Among the latest productions and articles which should find a ready sale are little blocks of violet-scented pumice stone, each piece being packed in a neat cardboard box. The antiseptic and sterilised tooth-picks are also quite new; each tooth-pick is enclosed in a separate envelope, and in these ultra-hygienic days such goods should recommend themselves to the public. These are only a very few of the articles which Messrs. Maw, Son and Sons are able to supply, but the firm's productions are of such wide repute that it would be unnecessary to continue to enumerate articles which are known to nearly every English-speaking chemist and druggist. An excellent article the firm has recently placed on the market is the "Mayfair" enema, particulars of which will appear in an early issue.

Christy's Christmas Novelties.—Messrs. T. Christy and Co., 4, Old Swan Lane, E.C., have quite a number of novelties suitable for Christmas trade, one of the prettiest lines being a silver-blocked box, with falling front, containing three small irradiant earthenware jars for toilet creams. The jars may be filled to suit the chemist's trade, but unless preference is expressed for any particular kind, Messrs. Christy fill them with witch-hazel, benzoin, and elderflower and cucumber creams, at 8s. per dozen pots. Then there is a better class article, in jars beautifully decorated, and very suitable for presents, at 15s. per dozen. Lip salve is now put up in opal glass tubes, instead of metal tubes as heretofore, and cold cream may be had in bulk at 1s. 6d. per lb., or in 1d. boxes at 6s. 6d. a gross. Camphor ice is put up in 1d. and 2d. tins, nicely labelled, in six dozen outers, with falling front. Cachous, in violet, rose, or assorted colours, may be had at 1s. 8d. per lb., in one pound lots, or at 1s. 6d. in 5 lb. boxes. A new line in tooth powders is being introduced this season, those now ready being carbolic tooth powder and violette de parme, in enamelled metal boxes, at 12s. a gross; other powders to be added to the series are cherry, white rose, and camphorated chalk. There is a good line in aluminium soap boxes at 5s. per dozen; also a pretty line of embossed medallions, or amulets, gilded and silvered, at 12s. per dozen. A seasonable article recently taken over by Messrs. Christy and Co. is Proctor's bronchitis vapour diffuser, to be sold at 1s. 6d. each. Readers may also be interested to know that for one gross orders the collapsible tubes sold by this firm may now be printed with any letterpress the retailer desires, in addition to the name and address.

"Counter Adjuncts."—The wide range of articles supplied by Messrs. Evans Sons Lescher and Webb, Limited, of Liverpool and London, renders it very difficult to pick out a few articles deserving of special mention. All goods manufactured and supplied by this firm are equally reliable, but space will only permit to refer to a few "counter adjuncts." Hawley's "Quick" Headache Cure, which takes the form of cachets, is a very good selling line. These cachets, which are free from antipyrin, opium, or chloral, are packed in neat cardboard boxes, and supplied in gilt-lettered pasteboard counter stands; they are sold largely all over the country. Granular Maltose Soluble Food, which is free from starch, can be assimilated by the weakest stomach; it is very palatable, and can be readily prepared for use. This is put up in attractive bottles, and should find a ready sale. Menthol Snuff, packed in little tins, to fit in the waistcoat pocket, is another article which is bound to be popular during the coming season of colds and catarrhs. For particulars of other articles readers should refer to the firm's complete catalogue.


HAWLEY'S "QUICK" HEADACHE CURE.
SOLD.
SOLD.
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SOLD.
HAWLEY'S "QUICK" HEADACHE CURE HAWLEY LONDON & LIVERPOOL
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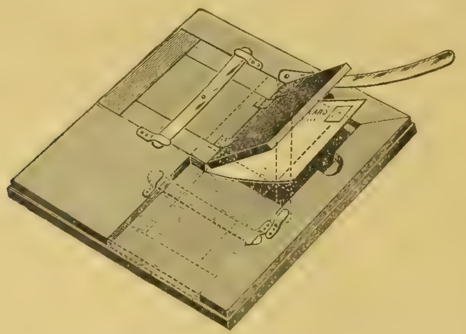
HAWLEY'S "QUICK" HEADACHE CURE HAWLEY LONDON & LIVERPOOL

"Fine Pharmaceuticals."—Among the fine pharmaceutical products manufactured by Messrs. Parke, Davis, and Co. are, of course, a large number which are likely to be in request during the winter months. The anodyne pine expectorant is one of these. This is a combination of astringents, sedatives, and stimulating expectorants, and has been freely prescribed by the medical profession in cases of affections of the throat and bronchial passages. The term "Hematic Hypophosphites" has been applied to a preparation containing six of the hypophosphite salts; it is a perfectly clear syrup, and the ingredients are present in doses which have been found the most suitable. Each fluid ounce of another preparation, "Syrup Yerba Sancta Aromatica," represents 60 grains eriodictyon, combined with aromatics; this is a tonic expectorant, and a good vehicle for quinine, being very effectual in masking its bitterness. Among the large variety of lozenges manufactured by this firm mention might be made of bronchial lozenges and throat pastilles, both of which are neatly packed in boxes, and find a ready sale. As regards other classes of medical requisites supplied from 111, Queen Victoria Street, E.C., the firm's London headquarters, chemists interested should obtain full particulars of the complete assortment of very handsome hypodermic cases and emergency cases suitable for presents; these are undoubtedly of exceptional quality. Among the variety of high-class atomisers and nebulisers for which the firm are agents, space will only permit to describe one, namely, "The Pocket Atomiser," an ingenious little contrivance, whose price is very moderate, which produces a perfect spray so fine as to be hardly visible. There should be a large sale for this article, which can be placed in the waistcoat pocket and used without any inconvenience at any moment. Application for fuller particulars should be addressed to the firm.

Hot Soda Apparatus for the dispensing of winter beverages is now supplied by Messrs. Styles, Limited, 72-74, Gray's Inn Road, W.C., the expense of such apparatus being very inconsiderable.

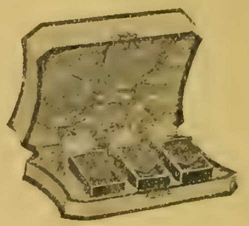
Armour's Toilet Soaps.—The firm of Armour and Co., of Chicago, has been so long associated in the public mind with the slaughtering of pigs and oxen on a large scale, and the subsequent preparation of meat and meat extracts for the world's markets, that one is apt to overlook the numerous bye-products manufactured by the firm. Yet the bye-products form an important part of the firm's trade, and one of the latest of these is the production of trebly milled superfatted soaps. During a recent visit to the firm's new offices at 46a, Holborn Viaduct, E.C., a representative of the Journal was shown several series of fine toilet soaps, which are well worthy the attention of chemists and druggists. Those who are not already familiar with these soaps should write for particulars of the various series. For the Christmas trade there is a whole range of pretty boxes, some of which are suitable for use as ladies' glove boxes, retailing at prices from 6d. to 2s. 6d. Then there is a good line of milled medicinal soaps, including "tar," "sulphur" and "carbolic," put up in boxes of three tablets to retail at 1s. per box. The Passion Series should be a very saleable line; it comprises six kinds of beautifully perfumed soaps, "Passion" Rose, Violet, Heliotrope, Carnation, Bouquet, and Lilac—three tablets in an attractive box to sell at 1s. The Château Violet Extreme tablets are made in a novel shape, three tablets in a dainty box selling at 1s. 3d. Another novel line is the "Supertar" Transparent Shampoo tablets, which are said to be "Nature's remedy for affections of the scalp and hair." Other medicinal soaps include Sweet Almond and Glycerin, and Benzoin and Borax, in boxes of three tablets at 1s. a box. The Corsage Bouquet Toilet Soap is an exquisitely perfumed article packed in a pretty box, very suitable for a Christmas present, retailing at 2s. 6d. For ordinary household use there are several series to sell at 2d. and 2½d. per tablet, while shaving soaps may be had in sticks or tablets, put up in attractive counter cases.

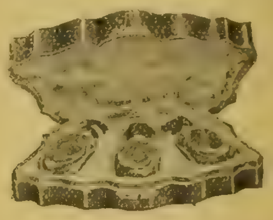
Photographic Winter Novelties.—Messrs. W. Butcher and Son's catalogue of winter novelties for 1903-4 contains particulars of several new lines in addition to those which have previously appeared. Among "The Junior Lecturer's Lantern Slides" are three entirely new sets, illustrating brave deeds, birds and their nests, and wild animals and how they are hunted.



In Christmas mounts there are a number of new, novel, and effective designs, while Christmas post-cards and post-card materials are a special feature. The P. C. Printing Frame, shown in the illustration, is a great improvement on the old printing frame, inasmuch as it can be used for printing post-cards from ¼-plate negatives, either upright or horizontal, the back reversing according to the shape of picture desired. Then the "Primus" Detachable Post-Card Masks are an entirely novel method of supplying masks, being in pads, perforated on one side, so that they can be detached one at a time as required. The 'Primus' Stereoscopic Cabinet is a novel form of stereoscope, folding up into a small cabinet, covered with imitation leather, and fitted with a pair of first-class stereoscopic prisms, complete with twelve views at 2s. 6d. The "Hullo" Telephone Set is also a useful little novelty comprising two hand combinations, one fitted with a speaking key in the handle and plug and push piece, and the other for use in kitchen, or elsewhere. The instruments are finished in well polished ebonised wood, and the metal parts are nickel plated, and may be fitted to existing electric bell fittings; price 10s.

Christmas Novelties.—There are, perhaps, few firms whose perfumes enjoy a greater popularity than do those of the Crown Perfumery Company. At their showrooms at 108-109, Fore Street, London, E.C., may be seen such a variety of articles suitable for Christmas presents that every chemist who has an opportunity should make a point of visiting them. Here are on view cases of perfumes to retail at all prices, ranging from 1s. to £3 3s., and cut-glass bottles costing from 16s. a dozen to 432s. a dozen. Perhaps one of the most artistic series the firm has ever introduced is that which includes the following five varieties of perfumes:—Lysia, Noel, Gloria, Flavia, and Nadia. The design on the outer cover and on the labels of this series is very attractive, and the perfume is of the highest quality; these should retail at 4s. 6d. for the single cases, and 9s. for the double cases, and bear a very good profit. The Crown Perfumery Company is well known for their exceptional assortment of handsome caskets, and it will be unnecessary here even to describe a few of them. The cases with white tops, wedgwood border, and beautiful centre design, however, are among those most likely to take the fancy of the purchaser. Amongst the more expensive caskets mention might be made of the satin-covered, hand-painted box, which is one of the most elegant things of the kind on the market. Especially for the Christmas trade, the firm is offering to supply, at the usual price, the 1 ounce bottles of crab apple perfume, in pretty little cases, on orders of three dozen. For the present, space will not permit to give particulars of the high-class toilet soaps and the variety of other articles manufactured at Homerton, and readers should apply to the firm and the advertisement pages of the *P.J.* for fuller particulars.





Vinolia Perfumes and Soaps.—It is difficult to single out from such a multitude of elegant toilet preparations as are on view at the Vinolia showrooms at Malden Crescent, N.W., a few articles which deserve more attention than others of the same make. Notice can only be given here of a few of the newer designs of caskets and perfumes for the Christmas trade. A new series of extra concentrated essences, comprising about twenty different odours, has been especially designed for the coming season. Each perfume is enclosed in an elegant floral casket, the design on which corresponds with that on the bottle label. Of this series, perhaps, the most popular will be "Mylissia" and "Waneeta." Another casket, of an original, but none the less artistic, style, is catalogued as the "H." series, each case containing two bottles bedded with various coloured satins. The "U." series is one which should sell well, and the prices are surprisingly moderate; the design on the cover is simple and attractive. But it will be unnecessary to go on enumerating here the long list of Vinolia preparations, most of which are conspicuous ornaments to every up-to-date pharmacy. All these will be found, most of them being illustrated, in the price-list issued by the firm, and every chemist should procure one of these. Attention, however, should be directed to the casket's painted by hand on the premises. These, of course, are a little more expensive than those already mentioned, but they are sure to attract customers. As regards soaps, the latest is "Mylissia," packed in handsome boxes containing three tablets.

Wright, Layman, and Umney's "Packed Pharmaceuticals."—The recent extensive advertising of Wright's coal tar soap, both by means of the pretty booklets, "Once Upon a Time," and in the newspapers, has created, it seems, an exceptional demand for this article in all parts of the country; whilst its protected price renders it profitable to the retailer who sells it. Only a passing reference, however, can be made to this important branch of Messrs. Wright, Layman, and Umney's business, for in this issue it is intended to draw attention to preparations which are more especially in demand during the winter season. And here it should be mentioned that all the drugs used in the manufacture of these specialties—and, in fact, every product that enters the house—is examined and the analytical report of same passed before redistribution. There are really so many excellent "packed pharmaceuticals" put up by the enterprising firm whose head offices are at 48-50, Southwark Street, that it would take up columns of the Journal to say only a few words about each, and a short reference can only be made to a few of the seasonable preparations supplied by this firm. "Umniana Liquorice" is a pure juice, prepared in 4 oz. and 2 oz. sticks, but it is so well known to every chemist that further reference to it is not necessary. An extract of malt, consisting solely of the entire soluble extractive matter of British malted barley is a preparation which every chemist can confidently recommend; whilst this extract, combined with cod-liver oil, forms an elegant pharmaceutical preparation which should prove of particular interest during the period of scarcity of cod-liver oil. "Malted Glycerophosphates" is a palatable form in which to administer the salts of glycerophosphoric acid; this preparation is put up in amber-panelled, attractive-looking bottles. "Petroleum Emulsion," containing 33 per cent. of sulphur-free, tasteless, odourless and colourless petroleum oil, with hypophosphites of sodium and calcium, is an agreebly flavoured preparation and a perfect emulsion. "Emulsion of Cod-liver Oil" contains 33 per cent. of finest non-congealing Norwegian cod-liver oil, with medicinal doses of the hypophosphites, put up for sale in wide-mouth, amber-panelled bottles. A useful embrocation for the winter season is "Expressed Oil of Mustard"—which, by the way, has been passed by the Inland Revenue as a pure drug. This is packed in dark blue flat bottles, one side being corrugated. Another liniment which has attained popularity is "Household Embrocation." Most of these articles are packed in handsome cartons, of which there is a variety to choose from, and may bear the retailer's own name and address, whilst attractive show-cards are also supplied to customers. "Beefex" is a beef essence containing the most nourishing and stimulating properties of prime ox beef, supplied in bottles varying in size of from 1 oz. to 16 oz. All these preparations, together with a large number of others, will be found illustrated in the complete price-list of "packed pharmaceuticals" issued by the firm, and every retail chemist and druggist should procure a copy of this. Although no mention has been made of perfumes, it should be borne in mind that Messrs. Wright, Layman, and Umney, Limited, supply a large and varied choice of these articles. Before concluding, mention should be made of "Ball Floor Polish," an article which chemists are sure to be asked for during the coming season, and full particulars of which will be found in the catalogue.

A Novel Dark-Room Lamp is being introduced by Messrs. Geo. Houghton and Son, Limited. It consists of a base-board, with holder for a candle in the centre, and around the candle a cylindrical glass receptacle containing a bichromate solution, the top being covered with a japanned ventilator. Other recent introductions include a new "Ensign" Daylight Enlarger, to sell at 25s., and a folding "Scout" camera with rising front, to retail at £1 1s.

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

A Very Handsome and unique shop front and window screen has been designed and just completed by Messrs. Maw, Son, and Sons, for Mr. W. L. Lewis, The Parade, Ealing.

An Ammonia Pistol.—A motor-cyclist has been fined by the Enfield magistrates for squirting liquid ammonia from a syringe into the eyes of a dog which had repeatedly barked at him as he passed on his machine.

Penalty for Supplying Morphine.—According to the Paris correspondent of the *Daily Mail*, a chemist in Paris has been ordered by the Correctional Tribunal to pay £200 as compensation to the husband of a woman whom he had for a long period supplied with morphine in large quantities.

Hertfordshire Analyst's Report.—The quarterly report of the analyst appointed for the County of Hertford, Mr. A. E. Ekins, shows that during the quarter ended September 30, 1903, eighty-six samples of food and drugs were submitted for analysis. These included eight samples of drugs, all of which proved to be genuine.

Claim Against a Dentist.—In an action at Gloucester County Court against a dentist, heavy damages were claimed by a carpenter, whose tooth had been stopped with cotton-wool and cocaine, instead of being extracted. Serious cocaine poisoning was alleged to have followed. The jury could not agree, and the claim was dismissed.

Prison Compounders' Salaries.—The authorities under whose care prison compounders live and have their being have announced a new scale of pay. In future the scale will be as follows:—£105 per annum, rising by £2 a year increment to

£125, and thence by £5 per annum to £150, with quarters, or an allowance in lieu thereof.

Alleged Fraud on a Chemist.—At Abergele on Tuesday, October 27, David Edwards, a Rhyl commission agent, was charged with obtaining 15s. by false pretences from Mr. Owen Jones, chemist and druggist, of Abergele. Prosecutor is the proprietor of Ellis's Patent Animal Food, and engaged the accused to solicit orders on commission. It was alleged that accused obtained 15s. by sending a bogus order for the food. As the principal witness was absent, the case was adjourned.

The Death of Dr. Hickman.—With reference to rumours of poisoning which have obtained currency, it is now stated that the bottle picked up in the plantation in Richmond Park was manufactured by Messrs. S. Maw, Son, and Sons. It is, of course, not probable that the firm will be able to trace the bottle, beyond saying whether it had been cast from an old or new mould. The *Daily Chronicle* reports that a hypodermic syringe, with morphine tabloids, has been found near the spot where the body of Miss Hickman was found.

The Vitality of Seeds.—Writing from Cricklewood, Mr. F. A. Walker, D.D., F.L.S., in a letter to the *Standard*, says:—"In reference to *Hyoscyamus niger*, many years since I noticed that that plant sprang up and blossomed in the kitchen garden of my Cambridgeshire rectory on a hillock of soil which, I have reason to believe, had previously remained undisturbed for a long period. I never saw it elsewhere in the parish (of which I was careful to chronicle the botany), or in any place in the surrounding neighbourhood."

Liquid Air as a Coal Getter.—A correspondent of the *Times* writes that experiments are being conducted at South Hetton Colliery, Durham, with the object of obtaining a safe and practical substitute for blasting in coal and other mines in which gas is found. The means employed is liquid air, and the trials have gone beyond the initial stage. It is claimed that the inventor of the process has established the practical possibility of getting coal by his method in an absolutely safe and expeditious manner at an expense not more than is incurred by the use of any of the present "permitted" explosives.

Egg Preservation.—Attention has several times been called in this Journal to the successful use of sodium silicate for preserving eggs. A correspondent of the *Lancet* has been making fresh experiments, and has failed to hatch eggs which had been preserved for three months by the use of water-glass, but the eggs, even after three months' incubation, could not be distinguished in appearance from ordinary eggs. The inference is, as the *Lancet* remarks, that it cannot be expected that the chick will develop during incubation unless some method be adopted in order again to render the shell permeable to air.

Coventry Chemist's Will.—Probate of the will of August 8, 1903, of Mr. James Hinds, 21, Warwick Road, Coventry, who died on September 29 last, has been granted to his executors, who have valued his estate at £9,669 gross, with net personalty £6,464. The testator bequeathed £35 each to his executors, and to his daughter, Mary Ann Trickett, his household effects, the plant connected with his manufacture of Godiva modelling composition, and all rights appertaining thereto, and the furniture and stock-in-trade of the said business. He bequeathed the remainder of his property to various members of his family.

Society of Chemical Industry.—The first sessional meeting of the Yorkshire section will be held at the Queen's Hotel, Leeds (Room No. 100), on Monday, November 2, at 7.45 p.m., when papers will be read by Mr. F. W. Branson, on "Some Properties of Radium Salts, with Experiments"; Mr. W. Ackroyd, "On the Colour Changes Effected by Radium Rays"; and Mr. T. Fairley, on "Certain Reactions of Radium Salts." Members are requested to bring exhibits relating to these papers. Members of the section are invited to join in an informal dinner at 6.30 p.m. on the same evening, at the Queen's Hotel, Leeds.

Linnean Society.—The papers to be read at the first meeting of the session, on Thursday, November 5, at 8.0 p.m., will be the following:—Mr. L. A. Boodle, F.L.S., on the structure of the leaves of the bracken, *Pteris aquilina*, in relation to environment; Mr. E. P. Stebbing, F.L.S., F.E.S., on the life-history of a new *Monophlebus* from India, with a note on that of a *Vedalia* predaceous upon it, with remarks on the Monophlebinæ of the Indian region. Dr. W. G. Ridewood, F.L.S., will exhibit the frontal bones of a horse, showing a pair of rudimentary horns; while Prof. F. E. Weiss, B.Sc., F.L.S., will show preparations and slides illustrating the occurrence of mycorhiza in coal-measure plants. There will also be exhibited photographs illustrating the pollination of flowers by Mr. B. H. Bentley, F.L.S.

Bradford Analyst's Report.—The Bradford City Analyst, Mr. F. W. Richardson, reports that during the quarter ending September 30 he analysed 121 samples of food and drugs, of which only seven were found to be adulterated. Commenting upon the presence of potassium chromate in a sample of milk, in the proportion of three-tenths of a grain per pint, he states that, though this small amount could scarcely be regarded as dangerous, the addition of a chromate for giving a creamy appearance to milk constitutes adulteration. A sample of cream contained 15 grains of boric acid in one pint, but this was not considered excessive. One sample of ipecacuanha wine gave only two-fifths of the proper amount of active principles. A sample of compound liquorice powder contained twice the proper proportion of sulphur, with a corresponding deficiency of the more expensive constituents.

The Late Mr. Proctor.—In the *British Journal of Photography* is published an interesting personal note concerning the late Mr. Barnard Proctor. It runs as follows:—"The Pharmaceutical Society has lost, quite recently, one of its most prominent members in the person of Mr. Barnard Simpson Proctor, F.I.C., pharmacist and author, known personally to many and by name wherever the British pharmacist may foregather. Mr. Proctor was a life-long personal friend of Dr. Joseph Wilson Swan, and it is probable that when *Mr.* Swan, as he was then, bought his first box-camera (I have heard that it was a joint-stock concern, and that Mr. Swan held half the shares) Mr. Proctor was one of his first sitters. The deceased gentleman took lively interest in scientific pursuits outside his own particular groove, but did little in the way of our art-science; pinhole photography, however, had attractions for him—he was naturally a good mathematician—and he not only took some very good pictures by this method, but wrote an article on the same for the Newcastle Society, of which he was then a member; I am writing this away from my books, but I believe this is correct."

The Sale of Poisons.—From an article in the *Sun* of the 23rd inst., entitled "Murder Made Easy," certain true remarks concerning the sale of poisons can be extracted from the inaccurate statements which are always to be looked for when the lay Press turns its attention to pharmaceutical matters.

Of the latter class of statements are the following:—"Weed-destroyers, procurable from any florist or garden-requisite dealers, are another form of poison procurable without difficulty. Arsenic is one of the most usual active ingredients of these preparations, which would be sold without hesitation to any applicant. Vermin-killers, chiefly containing phosphorus as the active ingredient, can be purchased for a penny a bottle, and 'no questions asked.'" Our evening contemporary proceeds to remark, very sensibly, that, although it is practically impossible, when a person is determined to commit self-destruction, to prevent a successful effort, "it is notorious that when self-destruction or murder has been determined upon a very little delay, or some merely temporary and slight obstacle, will sometimes divert the mind from its purpose." As a remedy for the laxity which the *Sun* believes to exist, the widening of the Schedule of Poisons is suggested.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. J. J. Shawyer, chemist and druggist, is mentioned as the probable Mayor of Swindon.

Mr. F. P. Pemberton, of Derby, has been elected a member of the Council of the Derby Chamber of Trade.

Councillor J. Taylor, J.P., has accepted the invitation to retain the mayoralty of Torquay for a second year.

Mr. T. Saint has taken over the old-established business of the late Mr. T. H. Jenkins, at 42, High Street, Stone.

Mr. W. S. Adams, chemist, Cathcart Road, Glasgow, has taken over the business of Mr. P. McMaster, Battlefield Road, Langside.

Mr. Edward Norton, of Stow-on-the-Wold, has been nominated to fill a casual vacancy that has occurred on the Urban District Council.

Mr. Alex. McCutcheon, M.P.S., 16, Leven Street, Edinburgh announces that he has acquired that business at 133, Bruntsfield Place, formerly carried on by the late Mr. Robert Stevenson.

Mr. J. Preston, chemist and druggist, of Sheffield, intimates that owing to the expiration of lease at 56, Fargate, in future he will carry on business at 105, Barker's Pool, Sheffield, to which place all communications should be addressed.

Mr. Stephen Harris, chemist, High Street, Droitwich, has been elected, for the fourth time, upon the Droitwich Town Council, his term being for three years. There was no contest this year. Mr. Harris has served as a member of the corporation nine years.

Dr. Sydney Young, F.R.S., Professor of Chemistry to University College, Bristol, has been elected to the Chair of Chemistry, in the School of Physic, Trinity College, Dublin, vacant by the resignation of Professor Emerson Reynolds. Dr. Young read a paper at this year's meeting of the British Pharmaceutical Conference, on the preparation of absolute alcohol from strong spirit.

Town Councillors.—The following gentlemen have been elected unopposed members of town councils:—Mr. Thos. Brewis, chemist and druggist, Portsmouth (re-elected); Mr. Owen Aly Clark, chemist and druggist, Bury St. Edmunds (re-elected); Mr. Walter Aston, chemist and druggist, Worthing (re-elected); Mr. Ernest Williams, chemist and druggist, Falmouth (re-elected); Mr. John A. Heaton, chemist and druggist, Burnley (re-elected).

Mr. T. H. W. Idris, J.P., L.C.C., has been selected as Liberal candidate for Flint Boroughs at the next General Election. The constituency, a small one, of some 3,500 voters, has returned a Liberal candidate at every election since 1885, the majority of Mr. J. H. Lewis, M.P., at the past election being 347. Mr. Idris has previously contested Chester City and Denbigh District without success. His prospects of being returned for Flint Boroughs appear to be of the rosiest character, a circumstance which will be pleasing to all pharmacists, however much their opinions on Imperial politics may differ from those of Mr. Idris.

SCHOOL AND COLLEGE NEWS.

Institute of Chemistry.—The next examinations for persons desirous of qualifying themselves to be public and technical analysts will be held in January, 1904. The intermediate examination will be held in the laboratories of the Institute, commencing on Tuesday, January 5. The final examinations for the Associateship (A.I.C.) will also be held in the laboratories of the Institute, commencing on either Tuesday, the 5th, or Tuesday, January 12. Applications for admission to the January Examinations should be forwarded to the Registrar, 30, Bloomsbury Square, London, W.C., not later than Tuesday, December 1, 1903.

Pharmaceutical Football Club.—The match which had been arranged for last Saturday between the "Prairie Rangers" and the above club did not take place, the visitors writing to express their inability to play on that day. However the "Square" would not be disappointed, and it was decided to have a practice match instead. About eighteen men turned up at Wormholt Farm in the afternoon. Hewlett and White picked their teams, and in spite of the sodden condition of the ground a most enjoyable game was played.

School of Pharmacy.—The monotony of double salts has been rather disturbed in the Minor Lab. during the past week by various incidents. An accident, which might have been attended with serious results, happened to one of the students. He had occasion to add concentrated sulphuric acid to sodium peroxide, and an explosion occurred, the liquid being splashed over his face. Fortunately, his eyes escaped injury, but the acid has left its mark in the shape of several scars. Several chlorate explosions have also occurred, some, perhaps, not altogether accidents. The Students' Association and Football Club have received a special mark of favour from the authorities; a notice board, in the Hall, having been placed at their disposal, so that in future, all who run may read. Two of the Demonstrators are sitting for the final B.Sc. examination of the London University this week, and have the good wishes of all the students under them.

Football.—Metropolitan College *v.* Lorn Athletic Reserves.—The "Metros." opened their season on Saturday last by decidedly beating their opponents by four goals to nil. This is the more gratifying as the same team beat the Metros. last season by seven to one. This seems a happy augury for the future. Probably the team will give a good account of itself in the forthcoming "Inter-Pharmacy League" Competition. Certainly with a little more practice a very capable team will turn out. Old boys will be glad to hear that Sweetman has taken over the captaincy, and is playing as strongly as ever this season.——A friendly match was played at Homerton on Saturday, October 24, between the London and Westminster Colleges of Pharmacy. A fast and evenly balanced game resulted in a win for London College by 3 goals to 2. The goals were scored for London by Hilton, Fowle, and Smith.

COMPANY INTELLIGENCE.

Anturic Salts, Limited.—Capital £20,000, in £1 shares. To acquire the secret formula or recipe of G. Grossmith, jun., for the manufacture of anturic salts, and to carry on the business of anturic salt manufacturers, wholesale and retail chemists etc. Registered office. 119, Pall Mall, S.W.

Bromo Phosph Company, Limited.—Capital £2,000, in £1 shares (1,000 preference). To adopt an agreement with J. F. Sargeant, and to carry on the business of manufacturers of and wholesale and retail dealers in a patent medicine called "Bromo Phosph," or any other drugs, chemicals, patent or other medicines, medicinal and chemical preparations, etc.

Corona Soap Company, Limited.—This company was registered on October 12, with a capital of £3,000, in £1 shares, to carry on the business of soap manufacturers, to acquire a new process relating thereto, and to carry on the business of fat and soap boilers, manufacturers, agents, salesmen, wholesale and retail dealers in soap and perfumery, etc. No initial public issue. Registered without articles of association. Registered office, 12, Oxford Street, W.

W. Pilling, Limited.—This company was registered on October 15, with a capital of £1,000, in £1 shares, to acquire and take over as a going concern the business of a chemist, druggist, and dealer in British and foreign wines, carried on by W. Pilling, at 192, Hyde Road, Ardwick, Manchester, and 25, Hyde Road, Gorton. No initial public issue. Registered without articles of association. Registered office: 192, Hyde Road, Ardwick, Manchester.

Medical and Surgical Nursing Homes, Limited.—This company was registered on October 10, with a capital of £20,000, in £1 shares (500 deferred), to acquire and equip any premises in London, or elsewhere, for use as private hospitals, nursing homes, or other medical or surgical institutions; to carry on the business of physicians, surgeons, dentists, chemists, druggists, instrument makers, and storekeepers, etc. No initial public issue. The first directors (to number not less than three nor more than seven) are to be appointed by the signatories. Qualification, fifty shares. Remuneration, two guineas each per meeting attended.

John Collier and Co., Limited.—This company was registered on October 19, with a capital of £20,000 in £1 shares, to adopt an agreement with Mary Collier and G. H. Lawford for the acquisition of the business of soap manufacturers and oil extractors carried on by them at Liversedge, Yorkshire, and elsewhere, as John Collier and Co., and to carry on the said business, and that of pharmaceutical manufacturing and general chemists and druggists and manufacturers of and dealers in toilet requisites of all kinds. No initial public issue. The first directors (to number not less than two nor more than five) are G. H. Lawford and H. H. Collier. Qualification, 500 shares. Remuneration as fixed by the company. Registered office: Valley House, Liversedge, Yorkshire.

BANKRUPTCY INTELLIGENCE.

Re **A. Macdonald**, Salford.

The Official Receiver of the Manchester Bankruptcy Court reports to the creditors herein that the realisation of the estate has been completed, with the result that a first and final dividend of 2s. 7d. in the £ will be paid to the unsecured creditors.

Re **John Aloysius Nealon**, described as a Doctor of Medicine, practising at 70, Sheil Road, and 175, Kensington, Liverpool.

This debtor appeared for his public examination, with a statement of affairs showing liabilities amounting to £472, and assets estimated to produce £24.

Re **Walter C. Langbourne**, Chemist and Druggist, 285, Hedon Road, 12, Gordon Street, and 23, Prince's Road, Hull.

This debtor was examined at Hull Bankruptcy Court on Monday, October 19, on accounts showing liabilities amounting to £309 0s. 8d., assets £52 7s. 11d., and a deficiency of £256 12s. 9d. Debtor attributed his failure to bad trade and insufficient capital to carry on three businesses. The examina was closed.

Re **H. R. Orme**, Mineral Water Manufacturer, Atherstone.

The creditors of this bankrupt were called together at the Birmingham Official Receiver's Offices on the 23rd inst. According to the statement of affairs, the liabilities expected to rank amounted to £272 11s. 1d., and the assets to £225 6s. 10d., leaving a deficiency of £47 4s. 3d. Bad trade, loss in trade, and heavy expenses were the reasons attributed by the debtor for his insolvency. Until 1899 Orme was a chemist's assistant, and then he commenced business as a mineral water manufacturer, with £37 capital. Creditors had pressed since December last, and as the High Bailiff took possession in September he filed his petition. The case was a summary one, and the Official Receiver will act as trustee.

Re **George T. Knight**, Chemist and Druggist, Newbridge.

On Thursday, October 15, 1903, at the Newport Bankruptcy Court, George Thomas Knight, chemist, 5, Tynewydd Terrace, Newbridge, underwent public examination. Debtor explained that he first commenced business on his own account nine years ago at Caerphilly with a borrowed capital of £200. Five years ago he sold the Caerphilly business for £250, and six months later he opened business at Newbridge, with £100 capital obtained by his father's guarantee from the bank. Debtor's father had since discharged the liability at the bank. The failure was due to bad trade, debtor stating that for three years his average takings were £4 per week; the gross profit being 20s. per week, trade expenses 16s. 6d., leaving a net balance of 3s. 6d. per week. Debtor drew from the business 30s. per week for household expenses. The gross liabilities amounted to £362 17s. 6d., and the deficiency was set down at £328 9s. 11d. The examination was closed.

Re **Andrew Sharp Taylor**, Wholesale Druggist, Linskil Terrace, North Shields.

This debtor underwent his public examination at the sitting of Newcastle-upon-Tyne Bankruptcy Court, on October 22, before Mr. Registrar Dendy. Debtor stated that he succeeded to his father's business in 1896, taking over the stock and book debts, less liabilities outstanding. He was to pay his father

4 per cent. on the surplus assets. His father was now returned as a creditor for £1,433 16s. 10d. He denied having ever been in partnership with his father. The Official Receiver remarked that the accounts tended to show that debtor was in partnership with his father prior to 1896. Debtor said that his father founded the business, and found the capital. The style of the business was "John Taylor," and when debtor succeeded to it the name was altered to "Taylor and Son." When the business was transferred debtor's father issued a circular, signed by him, and which stated: "I have transferred the business which I have carried on." The examination was adjourned until November 5.

Re **William Reader**, described as a Druggist, Forest Hall, Newcastle-upon-Tyne.

At the Newcastle Bankruptcy Court, October 22, before Mr. Registrar Dendy, the public examination was held of William Reader, described as a druggist, Forest Hall. Debtor, questioned by the Official Receiver, said he had traded for the last eight and a-half years at Forest Hall. He had £30 or £40 capital. About six years ago he made an arrangement with his creditors, under which he agreed to pay them 5s. in the £. His assets at that time was £100 and his liabilities were £180. He did not wish to realise his assets and borrowed £20, and afterwards gave a bill of sale for £99. No portion of the bill of sale money had been paid off. The same lender advanced him another £50, six or seven months afterwards. He kept no record of his cash takings. He had a day-book and a creditors' ledger. For four years and a-half Mr. Simm, a cattle salesman, who advanced the money, had taken all his takings in the business, leaving debtor only sufficient to live upon. Debtor was allowed on an average £2 a week for household expenses. He regarded himself as a partner with Mr. Simm. They begged and prayed for Mr. Simm's account but could not get one. Mr. Gibson suggested that the debtor was a sort of paid manager, but debtor said he considered he was a partner. The takings of the business represented £15 a week, but debtor could not say whether that represented a profit or a loss. The examination was adjourned until November 5.

PUBLICATIONS RECEIVED.

Fractional Distillation. By Sydney Young, D.Sc., F.R.S., with seventy-two Illustrations. Pp. xii. + 284. Price 7s. 6d. London: Macmillan and Co., Limited. 1903. From the Publishers.

First-Aid in Accidents. By Collie and Wightman Pp. 125. Price 6d. net. London: George Gill and Sons Limited, 13, Warwick Lane, E.C. 1903. From the Publishers. Can be recommended as a sound and practical pocket-book on the preliminary treatment of fractures, burns, wounds, insensibility and poisoning cases. A large number of excellent illustrations add greatly to the clearness of the instructions iven. Pharmacists, who are often called on to render first-aid before the arrival of a medical man, would do well to have this book handy.

The Private Nurse's Own Note-Book. By Sister Eva. Price 6d. London: Bemrose and Sons, Limited, 4, Snow Hill. E.C. From the Publishers. A book which, in spite of the advertisements almost inextricably mixed up with the text should prove of no little value to the "private" nurse. In the recipes for invalid dishes, and the like, the recommendation of proprietary preparations seems to indicate that the compounding of extracts, soups, and jellies from fresh meat is not regarded with favour by the authoress.

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

The Paris Centenary.

Le Président de la Société de Pharmacie de Paris remercie M. l'Editeur du *Pharmaceutical Journal* pour l'amabilité qu'il a eue en publiant une relation si exacte et si complète des évènements qui ont marqué la célébration de notre centenaire.

Paris, October 24, 1903. Eugène Léger.

Exemption from Medicine Stamp Duty.

I enclose copy of a letter I wrote last week to Somerset House, together with the Secretary's reply. They may be of interest to your readers.

Nottingham, October 26, 1903. F. Ross Sergeant.

[Enclosures.]

"Sir,—I am opening a discussion on Wednesday next at the Nottingham and Notts Chemists' Association on 'The New Interpretation of the Medicine Stamp Acts.' I may say at once that we are anxious, as chemists, to understand the matter, hence our discussion. In a letter published in the *Pharmaceutical Journal* of August 22, I see you say, 'In view of the impossibility of determining from an inspection of a label, etc., etc., the Board must, in future, decline to advise chemists whether or not the terms of the particular label are such as to bring the medicine within the scope of the exemption.' Will you kindly tell me if the Board would consent to advise chemists on this point, providing they sent along with the label either (1) a full list of the ingredients, or (2) the exact formula of the medicine under consideration? With apologies for troubling you and thanks in anticipation of your answer, I am, dear sir—Yours faithfully,

"F. Ross Sergeant."

"Sir,—In reply to your letter, dated the 16th instant, I am directed by the Board of Inland Revenue to acquaint you that they cannot consent to advise whether or not the terms of a particular label are such as to bring the preparation to which it relates within the scope of the exemption from Medicine Stamp Duty in favour of 'known, admitted, and approved' remedies, even though the formula of the medicine may be stated.—I am, sir—Your obedient servant,

"J. E. Chapman, Secretary.

"Mr. F. R. Sergeant."

The Incidence of Medicine Stamp Duty.

The incidence of medicine stamp duty is very clear as far as one's own preparations are concerned, but, as I understand the law, if we retailers expose for sale the unstamped articles made by others, we are liable to penalties for this same exposure. What, therefore, are we to do in the case of articles hitherto exempt from duty, but now made liable by Ransom *v.* Sanguinetti? Are the makers prepared to come forward and re-label our stock, or will they pay the penalties should the Inland Revenue officials proceed against us? Thus, a certain proprietary lozenge is at present exempt from duty (at least, I observe no stamp), but they are said to be "bracing to the throat," "warming to the chest." Is not such an "ailment-named" remedy? Again, a well-known proprietary malt and hypophosphites is said on its carton to be—the hypophosphites, at least—the most valuable "nervine tonics," whilst the alkaloids of cinchona and nux vomica are amongst the best "gastric" tonics. What about ailment names here? Again, are labels of toilet preparations, hitherto exempt, rendered liable by the judgment above referred to? Any information on these points would be gladly welcomed by

Torquay, October 26, 1903. Robert Horner.

*** The words quoted by our correspondent do not appear to render the articles liable to stamp duty (see page 612). He should communicate with the makers of preparations which will be considered liable to stamp duty after December 31, asking them to exchange the unstamped packages. Toilet preparations are not liable to stamp duty unless they are held out or recommended—on the labels or elsewhere—for the prevention, cure, or relief of ailments. Thus, a tooth-powder or mouth-wash will be liable if recommended for the prevention of decay, while a skin lotion will be liable if held out as a remedy for all eruptions of the skin.—[Ed. *P. J.*]

The Medicine Stamp Duty Acts: A Query.

Would you be kind enough to inform me whether a limited company which is entirely controlled, and whose shares are all held by qualified chemists, would be able to claim the same privileges as a single qualified individual? I notice in this week's *P.J.* that "An Ordinary Pharmacist" does not think so, but perhaps he may not be thinking of a case where all the shares are held by qualified men.

October 27, 1903. "J. H." (99/9).

*** The Inland Revenue authorities have stated their views quite definitely upon the point raised by our correspondent, viz., that the special exemption does not apply to sales by limited companies, and that it is immaterial whether the whole of the shareholders are qualified chemists or not.—[Ed. *P.J.*]

Does Saccharin Affect Digestion.

On reading Mr. Johnson's letter in last week's *Pharmaceutical Journal*, it occurred to me that a few years ago I knew a doctor who strongly objected to saccharin for some of his patients—many of them gouty subjects—giving as a reason for so doing that it was "very lowering"; and I also know a person who takes saccharin in moderate quantity—very careful as to diet, digestion fairly good, but who suffers, not from insomnia, but from heavy, dreamy, brain-tiring sleep, without apparent cause. Is it possible this may be reasonably attributed in some indirect way to the use of saccharin? I, with your correspondent, would like to see in your columns "a discussion on this matter for the purpose of eliciting the experience of others."

October 27, 1903. John Twinberrow.

Of Ill-Advised Concessions.

I know not who the writer under the name of "An Ordinary Pharmacist" may be, but during the last few years, in my opinion, we are more indebted to him for his many short communications than to any other contributor. His every paragraph seems pregnant with the finest practical commonsense. In this respect, his remarks in this issue fall not behind some of his previous papers, and should enlist very serious consideration. When the idea was first mooted for the compilation of the 'Pharmaceutical Journal Formulary,' I was sanguine of the issue of some publication that would have been a credit to the Society. A book of recipes, pharmaceutically perfect, and intended as much for the guidance of medical men, who, not finding all they want in the Pharmacopœia, are fond of ordering specialties, as for chemists themselves. I cannot but feel that the Society has made a grave mistake in being the author of such a book as the Formulary is likely to be—namely, a mere collection of everybody's nostrums, good, bad, and indifferent—without rhyme or reason. Stamped and sealed with the authority of the Pharmaceutical Society, it will prove the greatest incentive to counter prescribing that could be issued. Viewed from a pharmaceutically ethical standpoint, it is a most retrograde step and deeply to be regretted, as it must militate against any advance towards the recognition of a more professional position for the pharmacist. The medicine stamp, or stamp of quackery, has always been the *bête noir* of the best men among us; yet it has kept many others from exaggerated statements. Its practical removal will alter this greatly. I avail myself of the privilege of protesting in this matter, though I am aware it will have no more effect than my disapproval of the P.A.T.A., the chief result of whose labours has been an immense encouragement of the sale of proprietary articles. How much better it would have been if the dynamic force of this Association had been used towards expunging all secret medicines from our pharmacies. Also, would it not be much better if the Pharmaceutical Society, by means of deputations and conferences with the medical profession throughout the country, could be induced to use its great influence towards effecting a separation of medical practice from dispensing, and thus help to put the two branches of the healing art into their proper relationship. I do not think the members of the Society would find much fault with money spent in this direction. There are one or two other blots on the escutcheon I would refer to, but your space forbids; and, moreover, the small voice within cries *cui bono?*—"It is hard to kick against the pricks," and they are all set against the higher aspirations and ideals of our calling.

Upper Tooting, S.W., October 27, 1903. Jno. Ingham.

Chemists' Account Books.

The letter of "Simplicitas" shows up the slip-shod manner many chemists have of keeping their books. The up-to-date men, and stores keep theirs properly, and what is more important, take stock, as it is an absolute necessity if one desires to know exactly one's financial position at a glance. In reply to his query, there are several good stocktakers about who would undertake the job at a fair price, and it will pay any chemist to have it done rather than take up his valuable time. The methods of bookkeeping usually employed are single or double entry, but I have a system which is a modification of both, which works very well indeed, but which would take too long to explain in a letter to the Editor. Therefore if "Simplicitas" would like to know about it, will he please write to me, and I will do my best to explain it. He will be quite welcome to give it a trial, and I hope he will benefit from it. He will find a check-till very useful, saving a lot of time and worry.

Brighton, October 24, 1903. C. A. Blamey, M.P.S.

In reply to the letter of "Simplicitas," in your issue of last week, to which our attention has been drawn, we beg to state that we are in a position to supply him with the very thing he wants. On the receipt of a post-card from him and any other reader of your Journal we will supply the prospectus and unequivocal opinions of our new "System of Accounts for Retail Business." The features of the system are that (1) it requires no previous knowledge of bookkeeping; (2) furnishes protection against income-tax overcharge; (3) genuine simplicity, with full details; (4) for a cash trade no other book is essential; (5) for mixed cash and credit trade the day-book and customers' ledger are required additionally. We are afraid to trespass further on your space with particulars; but every chemist interested in the subject of "Simplicitas's" letter will do well to send for our prospectus, and also look up "Trade Notes," page 891, *Pharmaceutical Journal*, issued June 27, 1903.

Addiscombe, Croydon,
October 26, 1903. J. McQueen and Sons.

The 'Pharmaceutical Journal Formulary.'

Will you please insert the enclosed formulæ in the 'P. J. Formulary.' The concession granted by the Inland Revenue is a valuable one, making it possible for chemists to use up their present stock of labels by simply stamping "P. J. Form." upon them. I send a few labels so stamped, from which you will see that a small stamp, costing not more than 1s., will do for all classes of labels, from one drachm pill label to a large mixture label. These are not really elegant, but for the chemists in working-class districts, who are chiefly affected by the new regulations, they are sufficiently passable for working off present stock of labels. It is to be hoped that chemists will not "sail too near the wind," and use the 'Formulary' for practically running secret remedies. Your warning against over-puffing of remedies is timely. Your energetic action throughout this difficulty has been of great benefit to the trade, and should result in a closer attachment between the Society and registered men.

October 24, 1903. "W. G." (237/6).

The last concession on the part of the Board of Inland Revenue, viz.: A statement of the source of the formula, without giving number, will suffice for known, admitted, and approved remedies, is "a really good thing," as it allows one who generally gives a certain preparation in the 'Formulary' to give another preparation from the same 'Formulary,' for which the same label would answer, should it be desirable. I note on page 36, "Recipes," Oct. 24, 1903, Formula 692, the name "Godfrey's Cordial" is given as a synonym. Such a title on a label would make it liable, since Godfrey's Cordial has been liable for ninety years. It is mentioned in the original schedule of medicines which are liable. I may say a vast number of chemists use labels, "Godfrey's Cordial," "Godfrey Cordial," but I myself supply it labelled "Aniseed Cordial," or "The Cordial," and only yesterday had a customer come back to say she asked for Godfrey's Cordial. She, however, was satisfied when I said it was Godfrey's Cordial. It appears the Inland Revenue allowed Godfrey's Cordial (If not labelled with that name.—Ed., *P.J.*) as non-liable some time since, and I think it a pity that such a synonym should have crept into the 'P. J. F.,' as it has been repeatedly stated of late that Godfrey's Cordial is liable. Your latest suggestion to make the 'P. J. F.' more useful by the addition of recipes for perfumes, toilet preparations, etc., is very good.

October 24, 1903. "W. F." (237/23).

⁂ We have stated repeatedly that the name "Godfrey's Cordial" must not appear on labels unless the preparation is stamped, as the preparation is permanently liable to duty. It is permitted, however, to supply a suitable carminative preparation unstamped when "Godfrey's Cordial" is asked for, and the name has been inserted as a synonym simply in order to show what preparations are being supplied by chemists. The advisability of allowing such "liable" synonyms to remain is, however, under consideration, and they will probably not appear in the 'P. J. Formulary,' when published in book form. The position of affairs was fully explained in last week's Journal, at page 574.—[Ed. *P.J.*]

I beg to tender you my best thanks for the great interest you are taking over the Inland Revenue restrictions. I think the additional benefit to us by the omission of the numbers of formulæ a great boon

October 21, 1903. "J. F." (235/23).

I enclose you my recipes, which please include in the 'Pharmaceutical Journal Formulary.' Part of them were sent a little time ago, very much abbreviated, but I have now written them out in full, and added others to them. I am very glad to see you have taken so much interest in the matter; it will help to make the Pharmaceutical Society more popular, especially as the *Pharmaceutical Journal* has been very much more useful as a trade journal of late.

October 24, 1903. "H. C." (237/1).

I beg to hand you a number of recipes, and shall be glad if you can kindly publish same in your 'P. J. Formulary.' They are all for articles that sell well, and give satisfaction. Thanking you in anticipation, and wishing you success in your efforts.

October 26, 1903. "R. A. E." (237/39).

Herewith I send my batch of recipes for inclusion in the 'P. J. F.,' and beg at the same time to tender my apology for delay. This, however, has been due to the fact that by waiting I have been able to adopt or assimilate many of my own recipes to those already published, thus saving your time and labour as well as my own. Each sheet is plainly stamped with my name, not for publication, but as a means of identification. I shall certainly subscribe for the volume as soon as it is ready. Every chemist will then have the opportunity of possessing the grandest Receipt Book ever dreamt of.

October 24, 1903. "T. B." (237/41).

Will you kindly have the enclosed recipes printed and published in your register. I congratulate you on the success of your self-sacrificing task in bringing out such a useful register, and the concessions you have obtained from the Inland Revenue authorities in regard to this vexing question of stamps. Your labours are producing magnificent results.

October 24, 1903. "J. E." (236/47).

I shall be glad to be allowed to contribute a few formulæ to your admirable collection of recipes, if you can see your way to have them inserted.

October 23, 1903. "C. B." (237/28).

Will you please find room in your 'P. J. F.' for enclosed recipes. Thanking you in anticipation, and also for your efforts on our behalf on this vexed question of stamp duties.

October 24, 1903. "H. J. W." (237/30).

Enclosed I send a few recipes for insertion in the 'P. J. F.' I am sure we, as chemists, are deeply indebted to you for helping us out of a difficulty.

October 24, 1903. "G. T." (237/31).

Just a card to acknowledge and thank you for your postcard of a recent date informing me of the inclusion of certain of my formulæ in the 'P. J. Formulary.' The new order of things will press less heavily on the present generation than was feared by

October 27, 1903. "T. T. N." (239/41).

Herewith I enclose a book containing the various recipes I desire to be published in the 'Pharmaceutical Journal Formulary,' and shall be obliged by your returning the same to me at your earliest convenience. I shall also be obliged by your reserving me a copy of the above work, which I consider will be of the greatest benefit to chemists and druggists in general, and should, I consider, be beneficial in swelling the list of

members. Surely the outside adherents, if I may so term them, will now admit that the Society is of some use after all.
October 27, 1903. "D. W. M." (240/34).

May I ask you to be so kind as to allow the enclosed receipts to be registered in the 'Pharmaceutical Journal Formulary.' Regretting the great trouble you must be put to just at this time over these matters.
October 26, 1903. "W. H." (239/18).

Will you kindly add the enclosed two recipes to the lot of ours that are not yet printed. These are two that we had thought of stamping. The concession you have just obtained respecting the number of recipes not being necessary is a valuable one. Our preparations are thereby kept more private, for which we are thankful.
October 26, 1903. "H. P. & C." (238/7).

I enclose a few formulæ for publication in the supplement. Thanking you for the trouble you are taking in this matter.
October 26, 1903. "A. McH." (239/7).

I have sent you a few more recipes which I have found very useful, and hope other chemists may find them acceptable.
October 26, 1903. "R. B. C." (238/4).

I enclose recipes, which I hope you will be able to insert in the 'P. J. Formulary.' I thank you for the interest and trouble you are taking in this matter at the present time.
October 26, 1903. "C. W. D." (239/27).

Please find copy of three recipes and labels previously sent; also two more in addition. I shall be very thankful to you indeed if you include them in your 'P. J. Formulary,' which will be a very valuable publication when complete. I sincerely thank you for the trouble and pains you are taking in your arduous task, trusting my recipes will be inserted in your valuable book.
October 26, 1903. "R. B. L." (237/44).

Please insert the enclosed formulæ in your register of recipes in due course. Accept my sincere congratulations for your successful advocacy of our cause with the Inland Revenue authorities. Thanking you in anticipation.
October 26, 1903. "T. S." (238/24).

I enclose herewith a few recipes, all tried and proved, which I hope you will be able to publish, partly for my own convenience and partly, I trust, for the benefit of my brother pharmacists. I beg to express my appreciation of your efforts in our behalf. I hope your plan will, at any rate, keep Latin formulæ off the labels, as the public knows too much already.
October 26, 1903. "J. H. S." (238/20).

I shall indeed be much obliged if you will kindly allow the recipes which I herewith enclose to be included in your already extensive and valuable 'P. J. Formulary.'
October 26, 1903. "J. D." (238/25).

Please accept my congratulations on the assured success of the good work you have in hand, viz., the 'P. J. F.' Will you kindly have the following registered? I have a good sale for them, and wish to be on the safe side.
October 26, 1903. "C. W." (238/34).

You are to be congratulated and thanked for allowing chemists and druggists an opportunity of publishing their formulæ in the Journal, thereby escaping a perplexing problem. I enclose five recipes; if you can publish them in the 'P. J. F.,' I shall esteem it a favour.
October 26, 1903. "A. P." (238/38).

Enclosed please find three formulæ, which I should like to have published in the 'P. J. Formulary.' I cannot express my congratulations and thanks too heartily for the step taken to solve the chemists' difficulty
October 26, 1903. "E. G. V." (238/36).

We enclose a few formulæ, for which we hope you will be able to find room in the 'Pharmaceutical Journal Formulary,' and congratulate you on the success with which it has met.
October 26, 1903. "F & H." (238/33).

Herewith I enclose a few recipes for insertion in the 'Pharmaceutical Journal Formulary.' The idea is a good one, and ought to meet with the approval of the entire trade.
October 26, 1903. "J. P." (238/32).

Allow me to congratulate you on the success of the 'P. J. Formulary.' It is destined to be an immense boon to chemists and druggists generally. I have already found in it many formulæ almost identical with those I use; others I can easily adapt to my requirements. I beg to enclose one or two formulæ for publication in 'P. J. F.' They have done good service here for many years.
October 26, 1903. "J. B." (238/14).

I herewith send you seven recipes to include in the 'Pharmaceutical Journal Formulary.' I should have sent before, but have been waiting and watching the issues as they came to hand, thinking these recipes, or some very nearly like them, might be sent, but, so far, I have not noticed any whose composition could justly stand in place of these sent. I thank you very sincerely for the interest you are showing in this matter.
October 26, 1903. "J. G." (238/13).

In response to your offer to publish recipes in the 'P. J. F.,' I enclose twelve herewith, many being old familiar friends of forty years. Probably you may have duplicates of some of them, or perhaps similar to them, but, if there are any original, kindly give them a place in your excellent formulary.
October 26, 1903. "S. B." (239/25).

Kindly insert in 'P. J. F.' the enclosed formulæ. I think that it will be a work of extreme value. I shall be pleased to send you some authenticated recipes for inquirers.
October 26, 1903. "T. F. S." (239/23).

Will you kindly include enclosed in your 'P. J. Formulary'? Although the outlook was rather black at first, chemists may now thoroughly congratulate themselves; that is, if the Inland Revenue do not withdraw any of their concessions.
October 24, 1903. "H. S." (239/22).

Actinic Bottles.

Our attention has just been called to a letter appearing in your issue of September 19 *re* "Actinic" bottles. We beg to say we consider actinic green is the correct description of our bottles. *Aktis*, a ray, hence actinic-ray green—a green which occludes the rays of light having the properties of actinism.

The Manufacturers of the "Ideal Bottle."
London, October 23, 1903.

How History Repeats Itself.

A reprint of my reflections on "Free Trade" was sent to Mr. Henry Owen Huskisson, senior partner of the very old firm of H. V. Huskisson and Co., Swinton Street, Gray's Inn Road. Mr. Huskisson now writes me as follows:—"My distinguished relative, Mr. William Huskisson, was, I believe, the first Free Trader with reciprocity. Like Mr. Chamberlain, he was Colonial Secretary,—in the Cabinet of 1828, when the Duke of Wellington was Prime Minister. His doctrines alarmed his colleagues and led to his resignation and eventually the dissolution of the Administration."

London, October 28, 1903. Thomas Tyrer.

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Sale of Pills (J. J.—98/28).—There is nothing more required than you suggest.

Medical Baths (W. W.—235/11).—You should refer to Kelly's 'London Directory.'

Explosive (S. E. A.—99/13).—Any dealer in fireworks will supply what you require.

Headache Powder (D. W.—98/24).—Entire drugs are exempt from stamp duty.

Contents of Bottles (H. H.—98/27).—We are unable to say what the liquids consist of.

Jenner's Blood Stain (J. B. S.—98/22).—The formula was given in the *P.J.* of June 14, 1902, page 518.

Composition of Pills (G. H. M.—99/7).—We regret we are unable to inform you what the two pills contain.

Indian Pink (W. W.—99/14).—You can obtain it from Messrs. Potter and Clarke, 60, Artillery Lane, London, E.C.

Recordine Embrocation (C. and S.—98/31).—We have no information as to where this preparation can be obtained.

Influenza Specific (T. T.—239/10).—Your label renders the preparation liable, whether the formula is published or not.

Prescription (R. W.—98/33).—The names are fictitious, and you will do well to avoid the individual who supplies the recipe.

Toilet Preparations (J. H.—99/2).—They are exempt, unless held out or recommended for the prevention, cure, or relief of any ailment.

Children's Powders (J. D.—238/25).—Your powder envelope and handbill will not render the powders liable if the wording is altered as indicated.

Labels (R. B. L.—237/44).—All your labels incur liability, except those for pills and any to which the latest concession applies (see page 612).

Numbers on Labels (A. A.—238/9).—The position has been explained fully in the last two issues of the Journal. Read the editorial articles carefully.

Liquid Rouge (T. E. P.—99/1).—Dissolve carmine, 60 grains, in solution of ammonia, *q.s.*, and add sufficient rose water to produce 8 fluid ounces.

Ammonium Acetate (R. F.—99/5).—The B.P. solution contains about 68·39 Gm. per litre. This is approximately equivalent to 3 grains per fluid ounce.

Labels (G. W. B.—99/7).—All the names you submit will incur liability, except "Cherry Syrup," and any to which the latest concession applies (see page 612).

Labels (H. F. F.—238/40).—There does not appear to be any reason why your name in the possessive case should be removed from the labels for toilet preparations, which you submit.

Labels (A. D. P.—99/4).—Unless you have given the complete formula, the use of your name in the possessive case will render the powders liable. Read the article in last week's *P. J.*, page 573.

Labels (J. G. H.—239/28).—All your labels will incur liability, unless the formulæ are published, except those for "Hair Restorer," "Iron, Aloes, etc., Pills," "Aperient Family Pills," and "Quinine and Iron Tonic."

Poison Label (J. S.—239/24).—We agree with you that the use of the poison label was wrong in the instance quoted, but it is to be feared that any protest might lead to laxity in the opposite and more dangerous direction.

Handbill (J. F.—235/23).—See footnote to letter on the subject, published last week, at page 604. The terms on which the 'Formulary' will be supplied will be found in a special advertisement in this week's *P.J. Inset.*

Pastilles (W. H. G.—99/6).—(1) Neither of the labels you suggest will, in itself, render the pastille liable. (2) It does not matter what name you trade under, so long as the business does not belong to a limited liability company.

Formulary (E. B.—98/30).—(1) We cannot say how many, but the whole will be republished in book form. (2) You can quote any well-known book of reference. (3) Unqualified persons are not entitled to the benefits of the special exemption.

Labels (S. S.—98/23).—Your labels have been returned, with the "liable" words underlined. If you put the letters "B.P." after the name "Parrish's Syrup" the preparation may be sold unstamped. Note the latest concession, announced at page 612.

Formulæ (J. T. B.—238/39).—Your formulæ will receive attention in due course. If you are still in doubt, after reading what we have published, you should mark some labels accordingly, and submit them to the Secretary, Inland Revenue, Stamp Department, Somerset House, London.

Sections (L. E. J.—98/34).—You can obtain them from Mr. C. Baker, 244, High Holborn, London, W.C., or from Messrs. Southall Bros. and Barclay, Limited, Birmingham. You will find the information you require about books in the "Students' Number" of the *P.J.*, published August 29 last.

Labels (C. J.—99/8).—We think the Inland Revenue authorities will be disposed to regard such a palpable evasion as "A" for "Antibilious," as incurring liability if you supply pills so labelled when "Antibilious Pills" are asked for. In the case of "Head and Stomach Pills" you are now free to print the name in full. See particulars of the latest concession at page 612.

Dispensing Ferrous Sulphate (J. M. E.—99/5).—It depends upon the circumstances of the case whether the ordinary or the dried salt should be used in making pills. If it be desired to produce a less crumbly mass and a small pill, it is preferable to use the dried salt. In the case of suppositories, the ordinary salt should be used.

Breaking Packets of Medicines (J. W. T.-M.—236/39).—We have been informed at Somerset House that chemists are permitted to break open duly stamped inclosures of *any* dutiable medicines and sell the contents without paying further stamp duty, provided they are not inclosed in a packet, box, bottle, etc. The customer may bring his own box or bottle; otherwise it is only permitted to retail pills, powders, etc., loosely wrapped in paper, without being sealed up, or gummed, or tied with string or thread, or fastened in any other way.

Veterinary Chlorodyne (G. H.—98/25).—Dissolve extract of Indian hemp, 60 grains, and oil of peppermint, 30 minims, in a mixture of tincture of capsicum, 1 fl. oz., and alcohol (90 per cent.), 1 fl. oz.; then add chloroform (meth.), ½ fl. oz., and ether (meth.), ½ fl. oz. Next dissolve by the aid of heat morphine acetate, 30 grains, in a mixture of diluted acetic acid, 1 fl. drachm, and distilled water, 2 fl. ozs. Mix the morphine solution with liquid extract of liquorice, 1 fl. oz., and treacle, 5 oz.; then add the solution of Indian hemp gradually, shaking well after each addition.

Numbers of Recipes (E. B. V.—230/36).—(1) There will be no numbers to trouble about except those following the names of the different recipes, and the subsequent classification of the latter will not affect those numbers except in the few cases where duplicate recipes have crept in. Such duplicates will be weeded out in due course. (2) You need not quote the numbers unless you prefer to do so; if not, however, you must be prepared to identify your own formulæ if called upon to do so. Such a register as you suggest would not be recognised by the Board. (3) Separate slip labels may be used if preferred. The 'Formulary' must be offered for sale in order to meet the requirements of the Inland Revenue. See the special advertisement in this week's *P.J. Inset.*

BIRTH.

Martin.—On October 25, at 22, Market Place, Loughborough, the wife of Arthur B. Martin, Chemist and Druggist, of a son.

MARRIAGES.

Gibbs—Love.—On October 21, at Moseley Parish Church, Birmingham, Harold Rodin Gibbs, of Margate, to Mabel Kate Love, of Raunds.

Heaton—Cundy.—On October 24 at St. Peter's Church, Preston Park, Brighton, Wallace E. Heaton, Ph.C., to Ethel May, daughter of Mr. and Mrs. E. W. Cundy, South Norwood.

Lescher—Casella.—On October 21, at St. James's, Spanish Place, by the Rev. Wilfred Lescher, O.P., uncle of the bridegroom, assisted by the Very Rev. Canon Gildea, the Rev. M. Fitzgerald, and the Rev. J. Browne, S.J., rector of Stonyhurst, T. Edward Lescher, elder son of F. Harwood Lescher, of 31, Devonshire Place, to Ella Mary (Elsie), third daughter of L. M. Casella, of 47, Fitzjohn's Avenue, Hampstead, and Vachery, Cranleigh.

DEATHS.

Brewitt.—On October 16, Alfred Brewitt, Chemist and Druggist, Peterborough. Aged 54.

Livesey.—On October 24, at Rotherham, James Thomas Livesey, Chemist and Druggist. Aged 48.

Sicre.—On October 12, Frederick John Sicre, Chemist and Druggist, Liverpool. Aged 70.

Waddington.—On October 23, Benjamin Waddington, Chemist and Druggist, Thornton. Aged 67. Mr. Waddington was one of the oldest members of the trade in the West Riding. He was a native of Thornton, where his father conducted the business which he had carried on for many years, and is now being succeeded by his son. One of Mr. Waddington's daughters is also connected with pharmacy, being dispenser at a Bristol hospital.

Calendar for the Week (November 1—7, 1903).

Days of		Events of the Week.	Sun	
M	W		Rises	Sets.
1	S	**Twenty-first Sunday after Trinity.**	6.54	4.34
2	M	Royal Institution, Albemarle Street, W., at 5 p.m.—General Monthly Meeting.	6.56	4.32
		Society of Chemical Industry, Burlington House, at 8 p.m.		
3	Tu	Blackpool and Fylde Chemists' Association, at 9 p.m.	6.58	4.30
		Glasgow and West of Scotland Chemists' Trade Association, at 9 p.m.—Annual Meeting.		
4	W	Pharmaceutical Society of Great Britain, at 11 a.m.—Meeting of Council.	7.0	4.28
		Pharmaceutical Society of Ireland, at 3 p.m.—Meeting of Council.		
		London Chemists' Association (South London Branch), at 3.30 p.m.—Annual Meeting.		
		Stockport Chemists' Association, at 9 p.m.		
		Wolverhampton and District Chemists' Association, at 8.45 p.m.—Address by J. Rymer Young.		
5	Th	○Full Moon, 5.28 a.m.	7.1	4.27
		Chemical Society, Burlington House, W., at 8 p.m.		
		Chemists' Assistants' Association, at 8.30 p.m. "The Major Examination, Its Past and Its Future," by R. A. Robinson, jun.		
		Great Yarmouth Pharmaceutical Association, at 8 p.m.		
		Linnean Society, Burlington House, W., at 8 p.m.		
6	F	Blackfriars Bridge Opened, 1869.	7.3	4.25
7	S	East Sussex Pharmaceutical Association founded, 1901.	7.4	4.24

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Adcock, Alcock, Alexander, Allen, Amos, Andrew, Armitt, Aspinall, Bailey, Baker, Ballard, Bamford, Bannister, Barnard, Barnes, Batchelor, Bates, Batty, Baxter, Baynes, Beacock, Beall, Beard, Beattie, Beckwith, Betts, Betty, Bigglestone, Bing, Birkbeck, Blamey, Blenkiron, Bletsoe, Bloor, Bonnar, Bottle, Boyden, Bradshaw, Briggs, Bromley, Brown, Bullock, Burnell, Burnett, Bush, Butterworth, Cæsar, Camroux, Carter, Chalmers, Cherrett, Christy, Church, Clark, Clarke, Clayton, Cochrane, Cocker, Cole, Coleman, Cooper, Cousin, Cox, Cracknell, Crisford, Crowden, Crowther, Cryer, Daily, Dampney, Davies, Dawson, Deacon, Dee, Denney, Doig, Dow, Dowdy, Downes, Duffin, Duncalfe, Duncan, Dunlop, Dunn, Easton, Eastwood, Edwards, Ekins, Elstob, Evans, Fairley, Fairweather, Fearnley, Fernie, Fitzgerald, Flanders, Flemming, Flint, Forbes, Forster, Fraser, Freeman, Frost, Garry, Gibbs, Gibson, Gill, Gilmour, Gledhill, Gordon, Graham, Gray, Grayson, Gregory, Griffin, Griffiths, Grimshaw, Guignard, Gutteridge, Hallett, Hamnett, Harris, Harrison, Hawey, Haworth, Hayllar, Heaton, Hickman, Hill, Hodgson, Holmes, Hooper, Horner, Hoyles, Hudson, Hughes, Hyslop, Idris, Ingham, Ireland, Isaac, Jackson, Jay, Jenkins, Jenner, Jones, Juleff, Kelf, Kirke, Kirkham, Kirkland, Lance, Leefe, Lehmann, Lester, Lloyd, Lord, Lucas, McCutcheon, McEdwardes, McHardy, McMurray, McVitie, Madgwick, Maitland, Marfitt, Marsden, Massingham, Matthews, Metcalfe, Moore, Moorhouse, Morgan, Morse, Morrison, Mumbray, Mundy, Murray, Muskett, Nicholls, Nicholson, Nicol, Norris, Nosworthy, Ogle, Orton, Paine, Palmer, Pelley, Pendlebury, Pickford, Place, Polley, Pratt, Priestley, Purse, Ratheram, Reid, Ridley, Rigby, Riley, Ritson, Robinson, Roper, Rowland, Sanders, Saunders, Savage, Sawyer, Scott, Sergeant, Sexton, Shattock, Shaw, Shephard, Sherriff, Sherwood, Simco, Slade, Smith, Spark, Spence, Stewart, Stokoe, Strickland, Stroker, Sumners, Surfleet, Sutcliffe, Sutton, Swinn, Swire, Taplin, Taylor, Thompsett, Thompson, Thomson, Tilley, Todd, Tomlinson, Tooling, Town, Trinder, Twinberrow, Vallet, Van, Varley, Vines, Vizer, Wain, Wakeham, Walker, Wallace, Walmsley, Walton, Wass, Watts, Weaver, Wellwood, West, Westmacott, White, Whitehead, Wilkes, Wilkinson, Williams, Williamson, Wilson, Wood, Woolley, Woollings, Wright, Wyleys, Wynne.

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The Journal circulates widely in the United Kingdom, France, Germany, Austria, Italy, Russia, Switzerland, Canada, the United States, South America, India, Australasia, South Africa, etc. It is supplied regularly to the majority of the Chemists and Druggists in business in England, Scotland, and Wales, and to the whole of the members of the Pharmaceutical Society of Great Britain. Orders for Advertisements or for Copies of the Journal should be addressed to the Publishers, 8, Serle Street, London, W.C.

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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, November 5, 1903.

The ‘Pharmaceutical Journal Formulary’ can still be had on certain conditions at the reduced rate. Particulars will be found in this week's *P.J. Inset.*

The ‘Compendium of Medicines’ which is to be published “by authority” of the Council of the Pharmaceutical Society, will differ entirely in its scope from the ‘P. J. Formulary,’ but will be equally indispensable to practising pharmacists.

One of the Founders of the Pharmaceutical Society has passed away in the person of Mr. Nathaniel Smith, of Cheltenham, who has died in his 90th year.

Meetings of Local Associations have been held in all parts of the country during the week, and reports of the proceedings will be found in this issue.

In an Address delivered last night to the Wolverhampton and District Chemists' Association, Mr. Rymer Young advocated concentration of effort in pharmaceutical politics.

Messrs. Alexander Cross and Sons, Limited, have decided not to proceed further with their appeal against the decision given against them a few months ago by Sheriff Davidson.

The “Preservation of Drugs” is dealt with in the Students' Columns this week. The hints given should prove useful to chemists in business as well as to students. The article will be continued.

The Feature of the Week in the Drug and Chemical Market is the further drop in the price of cocaine, which is two shillings per ounce cheaper. Other changes will be found in the Market Article.

In a Memorandum prepared for presentation to the Privy Council, the Council of the British Medical Association condemns the Majority Report of the Departmental Committee on Poisons.

At the Opening Meeting of the London Section of the Society of Chemical Industry, a new form of non-poisonous phosphorus was exhibited and its properties described. It has been utilised in the manufacture of matches.

A Prominent Member of the French Chamber of Deputies has been interviewed by a Journal representative. He gives the details of the *projet de loi* which he has introduced. French pharmacists, however, are divided in their opinion as to its merits.

The Edinburgh Chemists', Assistants', and Apprentices' Association held its opening meeting for the session on Wednesday, October 28, when an instructive address, which extreme pressure on our space compels us to report in abstract, was delivered by the President, Mr. Archibald Currie. Meetings have also been held in Glasgow and various other towns.

At the Annual Dinner of the Sheffield Pharmaceutical and Chemical Society, Alderman Batty Langley, M.P., one of the blockers of the Pharmacy Bill, responded to the toast of the “Houses of Parliament.” The hon. member said he questioned very much whether any of the members of Parliament who put their names on the back of the Bill last year would do so again unless Clause 7 were altered.

At the Council Meeting on Wednesday last, the business transacted was mainly of a routine character. The President referred to his recent visit to Paris, and Divisional Secretaries and Boards of Examiners were appointed for the ensuing year, the new examiners being Messrs. W. F. Gulliver and Robert Wright, on the London Board, and Messrs. Coull and Dott on the Scotch Board. A special committee was also appointed to superintend the production of the ‘Compendium of Medicines.’

For Infringing Section XV. of the Pharmacy Act, 1868, the unqualified managing director of the Norbiton Drug Stores, Limited, has been successfully sued for three penalties of £5 each, at the Kingston-on-Thames County Court. Defendant admitted that he held 300 out of the total of 331 shares in the company. The articles sold by defendant were chlorodyne (on two occasions), and oxalic acid, and he was ordered to pay the penalties, with costs, by instalments of £1 per month. The Registrar endorsed the order with an intimation that if the penalties were not paid defendant would go to prison.

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A HOUSE OF CARDS.

The attention of the whole body of chemists and druggists is directed this week to the crushing reproof which Drs. Stevenson, Tilden, and Thorpe receive by implication in the Memorandum on the Sale of Poisons which has been passed by the Council of the British Medical Association for presentation to the Lord President of the Council (see page 681). The British Medical Association, in a word, will have none of the Majority Report. And the experts who signed that notorious document find themselves “thrust Like foolish Prophets forth; their Words to Scorn Are Scattered, and their Mouths are stopt with Dust.” The motives of the worthy gentlemen to whom allusion has been made are, of course, as unquestioned as are their abilities in their proper and respective spheres of work. It was indeed unfortunate for their reputation as men of common sense that a turn of fickle fortune's wheel should put them in a position which demanded qualities and knowledge in which they were naturally lacking, and at the same time made them amenable to the influences of those who were cleverer than they. As a result, they put their names to a report which is now condemned by the expert opinion of so important a body as the Council of the British Medical Association. Mr.

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Walter Hills, on the other hand, has this week the satisfaction of knowing that his Minority Report is stamped and sealed with the authoritative approval of the same influential body. The action of the Association is no matter of surprise to those who know how free that body is from the influences that are apt to sway the mind of the small man; but it is a source of the greatest gratification to pharmacists to see so deadly a blow inflicted on the jerry-built structure erected by Sir Herbert Maxwell and his amiable colleagues from the plans of that clever firm of architects, Cross, Dobbs and Co.

The Memorandum prepared by the Council contains the objections which it is considered "should in the public interest be urged against the proposal to relax in respect of certain poisons the restrictions at present imposed on the retail sale thereof by the Pharmacy Act." On behalf of the medical profession, the Council expresses the "grave misgiving" with which those who in the course of their duties become aware of the dangers attending the sale of arsenic and carbolic acid "must regard any violation of the salutary principle stated in the preamble of the Pharmacy Act, 1868." That principle, as pharmacists are aware, is that persons retailing poisons should possess a competent practical knowledge of their business and should be examined in that knowledge before commencing business. Surprise is expressed that the Departmental Committee did not state any grounds on which the conclusion was arrived at that relaxation could be conceded without undue risk to human life. With regard to the sale of arsenic, the Lord President is reminded that in many cases of poisoning the criminal has been traced through the chemist's poison-register, and that Messrs. Alexander Cross and Sons' Ballikinrain Ant-destroyer contains twenty-four grains of arsenic per fluid ounce. It is only fair to the majority to mention that the famous Chapman case and the successful prosecution of Messrs. Cross and Sons by the Pharmaceutical Society occurred after the Report of the Committee on Poisons had been compiled, although there is no reason to suppose that even the part played by a chemist and druggist in solving the Chapman mystery would have had any weight in influencing those who signed the *dossier.* The Council of the British Medical Association further recommends that special consideration should be given to the advisability of including carbolic acid in Part I. of the Schedule of Poisons, and urges "that His Majesty's Government should not initiate or approve legislation for the purpose of facilitating the sale of poisons in the manner proposed by the majority of the Departmental Committee."

The "Supplementary Report," in which Mr. Alexander Cross suggested that unqualified persons should be allowed to dispense poisons for medical men in the absence of the latter, is treated with a contemptuous brevity by the Council of the British Medical Association, as "members of the medical profession are of opinion that medical men who keep open shop for the sale of poisons should, in the public interest, be bound, as regards the employment of assistants, by the same regulations as registered chemists." Mr. Cross is indeed unfortunate. The Supplementary Report was intended as a bait to catch the support of the medical profession. The dispensing in doctors' shops was not a matter which affected the sale of ant-destroyer, and it was not possible to allege that he had been prompted by motives of self-interest in making this suggestion. Various medical men in Glasgow cherish a grievance against the Pharmaceutical Society, which administers the Pharmacy Act more conscientiously than meets with their approval. "What can be easier," thought Mr. Cross, "than to enlist the sympathy of the medical profession for the general relaxation of restrictions on the sale and dispensing of poisons?" Alas! the house of cards was doomed, for the trump card which served as a foundation for the whole has been ruthlessly taken away. *Sic pereant omnes.*

THE FORTHCOMING EVENING MEETING.

On Tuesday next, November 10, the first evening meeting of the session will be held at 17, Bloomsbury Square W.C. Mr. Edmund White, B.Sc., F.I.C., will read a paper on "Kino," and Mr. William Garsed will deal with "The Assay of Crude Cocaine." The President will take the chair at 8 p.m. Recent additions to the Library and Museum will be exhibited, and there will also be shown several pieces of apparatus, all of which bear a close relation to the ordinary work of the pharmacy. The exhibits of this class include a machine for making cachets without the use of moisture, two machines for making suppositories by cold pressure, and a modification of Mr. Bird's still for the recovery of alcohol. The Secretary will be glad to receive particulars of any other pieces of apparatus of interest to pharmacists, which it may be desired to show.

THE PHARMACEUTICAL JOURNAL FORMULARY.

Since last week's Journal was issued there has been a steady flow of orders for the 'Pharmaceutical Journal Formulary,' and there is every prospect that the demand for the book will be very great. Since all orders will be executed in strict rotation, any member of the Pharmaceutical Society who desires to obtain an early copy of the book, but has not yet applied, should lose no time in filling up the subscription form and sending it to the Journal office accompanied by the necessary postal order. Not more than one copy can be supplied to each member or student-associate at the special subscription price, and no copies will be supplied at that price after the book is published. With very few exceptions, the whole of the recipes for ailment-named remedies, which have been submitted to the Editor—several thousands in number—will be included in the book, but it is obviously impossible to publish more than a limited selection of them in the *P.J. Inset.*

As regards the hundreds of useful recipes for miscellaneous preparations, which are being compiled specially by experts, they will be published in the completed volume only, as will also much detailed information respecting the Medicine Stamp Duty Act and other Acts of Parliament which, directly or indirectly, affect chemists and druggists. Persons who are not members or student-associates of the Pharmaceutical Society will not be entitled to purchase copies of the 'Formulary' at the special subscription rate unless they apply to be elected forthwith, and send up their subscriptions for next year, in addition to the price of the book. In that case the actual elections will be deferred until January, 1904, but copies of the *Pharmaceutical Journal* will be sent to the new subscribers regularly from the dates of their applications, and copies the 'Formulary' will be supplied to them at the reduced rate. With regard to the supply of extra copies, the suggestion has been made by a correspondent that members of the Society might be allowed to purchase extra copies of the book at a reduction on the published price of one guinea net. That is a point which will receive consideration in due course; for the present, however, we are unable to hold out any hope that a reduced price will be charged, except to those who subscribe in advance.

In view of the fact that the book will afford the readiest means of proving that compounded medicines bearing dutiable names, or recommended for certain ailments, are recognised by the Board of Inland Revenue as "known, admitted, and approved" remedies, most chemists and druggists in business will find that a copy of the work is a virtual necessity. That being the case, readers of the Journal will doubtless recognise the wisdom of securing copies of this "well-known book of reference" on terms which will be offered for a short time only. In conclusion, it is only necessary that we should set the minds of some of our readers at rest, by publishing the following letter which has been received by Mr. William Gill, of Nottingham:—

> Inland Revenue,
> Somerset House, London, W.C.
> November 3, 1903.
>
> Sir,—In reply to your letter dated the 27th ult., I am directed by the Board of Inland Revenue to acquaint you that the words "P. J. Form.," stamped on a label, will be accepted as a sufficient indication of the source from which the formula for the preparation to which it applies is taken, so as to bring the preparation within the exemption from Medicine Stamp Duty in favour of known, admitted, and approved remedies.
>
> I am, Sir, your obedient servant,
> E. E. Stoodley,
> *Secretary.*
>
> Mr. W. Gill, M.P.S.

In the case of very small labels, where space is limited, it will, of course, be sufficient to use the contraction "P. J. F."

ALEXANDER CROSS AND SONS, LIMITED.

The agents for the appellants in this appeal against the decision of Sheriff Davidson (*vide P.J.*, 16, 848), having intimated to the solicitors for the Pharmaceutical Society in Edinburgh that the firm was not prepared to proceed further with the case, brought the matter before the First Division of the Court of Session on Tuesday, November 3, with the result that the appeal was struck out, costs to the extent of three guineas—the utmost allowed by the rules of procedure of the Court—being allowed to the Society. It is understood that Messrs. Cross and Sons' own costs are very heavy. It is not definitely known to what cause the withdrawal of the appellants is due, but it may be presumed that, if the firm had hoped to succeed, they would have persevered with their action. The fact that notice of appeal was given when judgment was pronounced last June, prevented us from commenting on the case at the time. The prosecution was undertaken under Section 17 of the Pharmacy Act, 1868, and was in respect of the sale of a quantity of arsenic contained in a bottle of ant-destroyer, in the proportion of twenty-four grains per fluid ounce of syrup. According to the analyst's report, the mixture was "a crudely-prepared article—the arsenic in all probability being roughly weighed out and added to the syrup." The total cost of the ingredients was estimated at about threepence-halfpenny, and the mixture was sold for three shillings and sixpence. The arsenic was sold to a person unknown and not introduced to the seller, without any registration of the sale in a poison book or signature of the purchaser, and without a label giving the name and address of the seller. Any more shameless neglect of ordinary precautions can hardly be conceived.

The defendants throughout the proceedings endeavoured to confuse the issue by raising a number of technical points of law. Objection was taken at the opening of the case on February 20, 1903, on the ground that a limited company could not be cited to appear in a *quasi*-criminal complaint. Then it was urged that the Registrar of the Pharmaceutical Society had no title to sue under Section 17 of the Act. The Society, it was maintained, was only empowered to control the sale of poisons by persons trading as chemists, and not entitled to interfere with horticulturists' sundriesmen. The above objections having occupied all the time available on February 20, the case was adjourned till March 6, and was subsequently again postponed at the request of the agents for the respondent. On March 20, counsel for the defence again repeated his previous arguments at great length, and added that the complaint was irrelevant because it did not state the person by whose hand the sale was made; also that it was impossible for a limited company to sell. But the technical objections were not yet exhausted. Messrs. Cross and Sons, Limited, were charged with three separate offences under the same section. Therefore, urged their agent, it was necessary to prove that all three offences had been committed, or the whole complaint must fail. The Sheriff having repelled all these objections as irrelevant, the hearing of proof began on June 10. The witnesses for the prosecution were subjected to very severe cross-examination, but no evidence of any kind was tendered for the defence. Before judgment was given, however, still another paltry quibble was advanced. It was contended, in the concluding speech of counsel for the respondents, that there was no proof that Mr. Bremridge was Registrar of the Pharmaceutical Society, nor that he had authority from the Council of that body to prosecute, but the Sheriff refused to sustain that objection, and gave judgment for the complainer for a penalty of £5 with expenses.

The extent to which Mr. Alexander Cross, M.P., is connected with the firm which bears his name is not clearly understood. But his connection with the agitation against the Pharmaceutical Society and with the consequent decision of the Lord President of the Council to appoint a committee to consider the sale of poisonous insecticides and weed-killers, is sufficiently well known to most readers of the *Pharmaceutical Journal.* That the Duke of Devonshire should ever have thought that a part-proprietor of the Ballikinrain Ant-destroyer was a suitable person to sit on the Committee is absolutely inexplicable. A still more extraordinary circumstance, however, is that Mr. Cross should have gone out of his way to throw out hints and put leading questions—*e.g.*, Question 2037, Minutes of Evidence—to the witnesses before the Committee on Poisons, on the subject of the alleged high prices charged by druggists as compared with seedsmen. And that in spite of the fact that the Ballikinrain Ant-destroyer bears a profit equivalent to more than a thousand per cent. on the cost of the article! For one reason, the abandonment of Messrs. Cross and Sons' appeal is to be regretted; the scandalous details of the manner in which the stuff was sold will not attain the publicity which would otherwise have been the case.

DIVISIONAL SECRETARIES.

In this week's issue is printed the complete list of Divisional Secretaries of the Pharmaceutical Society for the ensuing year. Several new names are to be found on the list. To many of those who have served the Society as Divisional Secretaries in the past the Editor desires to tender his best thanks for much loyal assistance in sending information and news for the Journal. Another example of the manner in which a Divisional Secretary may assist is furnished by the action of Mr. Robert Horner, Divisional Secretary for Torquay, with regard to an inaccurate statement in the *Bazaar: Exchange and Mart.* In answer to a correspondent, the editor of the paper stated that the Pharmacy Act did not schedule carbolic acid among the poisons. He further recommended his correspondent, however, to sell the acid through a qualified chemist only. Mr. Horner has pointed out to the editor of the *Bazaar: Exchange and Mart* that carbolic acid is now scheduled, and thanks him for the wise advice which was given with the answer. "If such counsel were more general," said Mr. Horner, "poisoning would be less frequent."

NATHANIEL SMITH.

The death of Nathaniel Smith, head of the firm of N. Smith and Co., chemists, of High Street, Cheltenham, which occurred on Saturday morning, October 31, in his 90th year, has reduced the list of surviving founders of the Pharmaceutical Society to three persons, and has removed from the Cheltenham district the *doyen* of pharmacists—one whom his local *confrères* loved as a valued friend. The name and business career of the late Nathaniel Smith is, perhaps, not so well known among the present generation of pharmacists as it was in the fifties, when he was on several occasions elected as a member of the Pharmaceutical Council. Over sixty years ago Mr. Smith, who was then an assistant with the historic firm of Lea and Perrins, of Worcester, was selected by them to conduct a branch business they had established at Cheltenham. His business capacity was soon recognised by his employers, and he was made a partner in the Cheltenham business, which for some years was carried on as Lea, Perrins, and Smith. In a few years the business became his own, and in later days it was a great pleasure to his friends to listen to the account of his early struggles and the indomitable energy with which he surmounted his difficulties. One instance may be recorded. A country mail-cart driver, who was despatched on his journey at 4 a.m., was paid by Mr. Smith 1s. weekly to ring the night-bell and summon him down to the shop, where he occupied himself by posting up the previous day's booking, reviewing the past day's work, and nging all his business plans for the coming day. Even to the last he rarely missed attendance at the shop daily, oftentimes walking in and out from his residence at Leckhampton, two miles distant. About a fortnight ago he attended the wedding, at Swindon, of his only grandchild—a son of Mr. Samson Smith—and for a few days prior to his death he was suffering from a chill, which culminated in congestion of the lungs. He passed painlessly and quietly away, loved and lamented not only by his family and brother pharmacists, but by the whole community. Mr. Smith was the oldest tradesman in Cheltenham, and took considerable interest in local matters, especially in connection with Leckhampton. He was for twenty-three years a member of the old Local Board of Leckhampton, part of which time he was Chairman of the Highways Committee, and for twenty-five years he held the position of Churchwarden, retiring from that office in 1891, when he was presented by the parishioners with an inkstand and illuminated address. He took a keen interest in pharmaceutical matters, and very recently he expressed to the Divisional Secretary his pleasure and satisfaction at receiving a visit from the President of the Pharmaceutical Society, Mr. S. R. Atkins, a few weeks ago. Mr. Smith leaves a widow—the daughter of a pharmacist—and two sons, one a Church of England clergyman, and lately a Master at Winchester College, and Mr. Samson Smith. The funeral was attended by Mr. Wm. Barron, Divisional Secretary, as the official representative of the Pharmaceutical Society, and by all the chemists and druggists of the town.

DISREPUTABLE TOUTING.

It is difficult to characterise in adequate language the trading methods employed by some limited companies, of unqualified proprietorship, which trade as druggists. In a previous issue, at page 546, attention was drawn to the disreputable methods of a company which offered money to chemists in return for the names and addresses of persons suffering from diabetes. Still more scandalous is the procedure adopted by a firm known as "Violets Progressive Chemists, Limited," Bournemouth, which circulates to bishops and the clergy a letter in which the suggestion is made that the clergy should send the names of persons suffering from gout. A commission of 20 per cent. is offered on the value of all the bottles of a certain "Gout Specific" purchased by the patients whose names are thus obtained. The whole system has been exposed by Sir Edward Fry in a letter to the *Times*, that gentleman remarking with truth, that "it is shocking that the clergy should be exposed to such temptations and such insults." The circulars are signed by a certain "Violet E. Hill, Director," a person whose name, as it is surely almost needless to state, does not appear on the Register of Chemists and Druggists. The only circumstance in the whole business which is in any way welcome is that it furnishes a timely example of the opportunities afforded by the existing law to any persons, whatever their business morality, to form themselves into a limited company and usurp the title and functions of a chemist. When, as in this case, they bring grave discredit on qualified chemists in general, it becomes necessary to explain to the public how it is that such things may be. That explanation has been given in a letter to the *Times* by the Registrar of the Pharmaceutical Society, who recalls the fact that the Society has been endeavouring for some time to obtain legislation which will be some check on the manner in which individuals of a low standard of culture and education carry on business as "company chemists."

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Ticutoxin.

Takayama finds that the active principle of *Ticuta villosa*, a plant used in Japan as a poison, is a yellow amorphous resinoid body, which he has named ticutoxin. With alcoholic sulphuric acid it gives at first a green, then blue, and finally a red colour, with ether and sulphuric acid a deep blue is produced; glacial acetic acid gives a purple colour.—*Nat. Drugg.*, **33**, 254.

Poisoning by Contiguity.

A curious account is given of the assumed harm done to peach trees by the juxtaposition of *Humea elegans*, a plant that exhales a powerful odour resembling that of Russia leather. In a peach house, in which a few plants of *Humea* were placed, a comparative burning or withering of the young leaves took place within twenty-four hours, and in many cases followed by the falling of the leaves. Repetition of the experiment was followed by exactly the same results (*Gard. Chron.*, **34**, 195). If this result be confirmed by scientific observers, it opens quite a new line of investigation. Although it is well known that some plants are inimical to the life of others, or at all events to their vigorous growth, this has generally been attributed rather to the stronger growing plant starving the weaker, than to exhalations or excretions proving injurious.

A New Insect Pest.

An excellent account of the life history of a new insect which attacks the leaves and buds of the peach, apricot, plum, and cherry trees, is given in the *Gard. Chron.*, **34**, 185. The insect, which belongs to the group of moths named Tineina, is called *Gelechia nanella*. It forms linear white mines in the tissue of the leaves during August and September, and when the fall of the leaf approaches, the larva, about ⅛-inch long, forms little white silken cases in the axils of the leaf-buds, or in wall-ties, in the folds of the cloth shreds, or crevices of the wall, and at the end of February proceed to attack the flower-buds, and are full grown at the end of May, when the chrysalis may be found in the buds, the moth emerging early in July. The life history being known, the proper time to apply remedies is obvious, petroleum emulsion, quassia, or other insecticides being applied by the third week in February.

Eucalyptus Calycogona.

J. H. Maiden in his critical revision of the 'Genus Eucalyptus,' Part 3, deals with *E. calycogona*, Turcz, characterised by the angularity of the calyx tube, of which he enumerates two varieties, viz., (1) var. *celastroides*, Maiden, including *E. celastroides*, Turcz, and *E. fruticetorum*, F. v. Müll., and (2) var. *gracilis*, including *E. gracilis*, F. v. Müll., *E. gracilis*, var. *breviflora*, Benth., and *E. yilgarnensis*, Diel. These varieties were formerly regarded as species. As doubtful varieties of *E. calycogona*, he mentions *E. gracilis*, F. v. Müll., var. *Thozetiana*, F. v. M., and *E. ochrophloia*, F. v. Müll. Mr. Maiden's critical remarks concerning allied species will be useful to systematic botanists, but it is not clear from the context how far he has depended on a knowledge of the living plants, or whether he has based his present classification merely on dried pecimens. Baker and Smith give the characters of the oil of *E. calycogona* as specific gravity at 15° C., 0·9093; specific rotation +1·48; saponification number, 6·17; solubility in alcohol, 1 volume, 80 per cent. Constituents found, pinene, eucalyptol, aromadendral.

Mercurous Sulphide.

Although C. Baskerville and F. W. Miller, when investigating the action of sulphuric acid on mercury, concluded that there was no analogy between the reaction which takes place with that metal, compared with the action of copper and sulphuric acid, no sulphide being produced and no free sulphur, subsequent experiments have induced the first named to modify this view. It is now found that by prolonged contact, extending over five years, at ordinary temperatures, a layer of brownish-black mercurous sulphide is formed on the surface of the metal, and sulphurous acid is evolved. The analysis of the compound agreed with the formula Hg_2S. It would appear, therefore, that under certain conditions the reaction between mercury and sulphuric acid resembles that of copper more closely than is generally known.—*Journ. Amer. Chem. Soc.*, **25**, 799.

Influence of Water on the Decomposition of Hydrides by Acetylene.

H. Moissan has prievously shown that at ordinary temperatures under reduced pressure acetylene reacts with energy on alkaline hydrides, liberating hydrogen, and forming acetylenic acetylides of the metal, thus—

$$2KH + 2C_2H_2 = C_2K_2 \cdot C_2H_2 + H_2.$$

At ordinary pressure this reaction is violent and is sometimes accompanied by a slight incandescence. Further investigation has shown, however, that this only takes place at ordinary temperatures in the presence of a trace of water. If the acetylene gas be absolutely dry it exerts no influence whatever on the hydride until the temperature is raised to 42° C. Nor does any reaction take place when the same dry ingredients are cooled to −80° C., by immersing the containing vessel in liquid oxygen. If, however, a minute vessel containing a few milligrammes of water be included in the apparatus and broken when the temperature is reduced to −60° C., reaction takes place one or two minutes later as the temperature is allowed to rise slowly, indicating that the presence of only so much water in the atmosphere of the apparatus as is represented by the vapour tension of the ice is necessary to start reaction. It is supposed that this trace is sufficient to raise the temperature, at some point, to 42° C., and thus to start reaction, which at once becomes general.—*Comp. rend.*, **137**, 463.

Presence of Arsenic in Reagents.

The extreme delicacy of the ferric sulphate reagent as a precipitant for arsenic has enabled A. Gautier to demonstrate the presence of that body in most of the purest reagents. Thus, distilled water obtained from a tinned copper still, treated previous to distillation with 1 : 1,000 Na_2CO_3, contained 0·0007 Mgm. of arsenic per litre; the same distilled from a glass retort, over 1 : 1,000 pure $NaHCO_3$ gave 0·0011 Mgm. per litre. So-called pure commercial solution of ammonia contained 0·0010 Mgm. per 100 C.c. Solution of ammonia, made with pure potassium sulphate, and reputed pure caustic soda, gave 0·0033 Mgm. per 100 C.c. Commercial sodium bicarbonate, 0·016 Mgm. per 100 Gm.; pure commercial potassium nitrate, 0·0015 per 100 Gm.; reputed pure potassium sulphate, 0·006 per 100 Gm.; purified ferric sulphate, containing 30 Gm. Fe_2O_3 per litre, 0·0004 Mgm. per 100 C.c.; specially purified nitric acid, 0·00023 Mgm. in 100 Gm.; saturated solution of SO_2 in water, 0·005 Mgm. in 100 C.c. Sulphuretted hydrogen generated and purified in the usual manner, contained considerable quantities of arsenic. When purified in a special manner, which will be described by the author, it contained but the minutest trace.—*Comp. rend.*, **137**, 236.

PANACEAS.*

BY J. RYMER YOUNG.

Personal Reflections.

In one of those publications of the "Wisdom-while-you-wait" series "it was revealed unto me" that solicitors are, for some reason or other, not popular, and that when one of them was murdered some time ago it was a rude shock to the public to discover that such a mode of expressing the general feeling was illegal. Now, in some respects a member of the Council of the Pharmaceutical Society of Great Britain is as unpopular as Mr. Emanuel's solicitor, and although pharmaceutical expression has hitherto stopped on the legal side of the sixth Commandment, it is considered distinctly legitimate, and even laudable, to shorten his life with strenuous and well-sustained criticisms on his many lamentable shortcomings. I have myself lived for years the life of a martyr to the general unpopularity attaching to my office, and have seen in that mirror of pharmaceutical nature—the trade press—more personal faults than I suspected could be crammed into my executive career, but it is a distinctly encouraging sign that you in Wolverhampton should have sufficient confidence left to invite me to address you to-night, and enough forbearance to give me another chance to work out my own redemption and salvation.

The Pharmaceutical Rondo.

When my friend and former colleague, Mr. Warner, persuaded me to give you a paper, I felt some little difficulty as to the subject upon which I should talk to you, for really the whole theme of trade politics is remarkably like a one-time barrel organ. Some of us grind it out with expression in an *andante* movement; others give it an *allegro* turn and rush it off with a simulated and stimulated optimism that imparts a temporary exhilaration to the audience; whilst others again seek to convey an air of virility and novelty by performing it in *staccato* jerks with a firework finish. But it is the same old tune, and the variations are not always conspicuous as examples of ingenuity. But when I thought of the numerous modern "stops" which some inventive persons in our calling have time and again proposed to introduce into our barrel-organ, it occurred to me that I might venture to say a few words on panaceas.

The Open Mouth.

The connection, perhaps, does not strike you as particularly apparent; but the simile is by no means imperfect, for the projects I have made the subject of my remarks are in the nature of mechanical devices designed to make our one tune more sweet, more penetrating, or more effective and catching. Do not imagine that I desire to keep the voice of suffering pharmacy for ever subdued to its present inefficient tone, or that I seek to ridicule proposals which I did not initiate, and probably could not equal. I welcome *every* honest effort for the general advancement, honouring the author for his motive, and endeavouring to further his work; but I beg leave to differ from him—when it happens that there is cause for difference—in my own way, for surely it is far better to be natural than diplomatic, especially when the interests of one's craft are in question. Frankly, then, I think we chemists and druggists have been sadly overdosed with panaceas, those infallible remedies for corporate degeneration, which ever and anon are prescribed for our woes. It is one thing to search for a remedy, or even a palliative—as earnest and hopeful men we are always doing that, surely—but it is quite another thing to swallow every quack nostrum and proprietary cure-all for trade depression or political impotence that comes along with the weekly journals and newspapers.

Political Packed-Goods.

The habit of experimenting with the body corporate seems to be growing of recent years, and there is reason to fear that chemists, assailed as they are by so many and varied ills, have, as a body, acquired as astonishing a relish for ready-labelled politics as the general public has for ready-made specifics. The benefit to the consumer in either case is more than problematic. In fact, we have become almost like hypochondriacs—hungering for a new doctor and thirsting for a fresh remedy every day—and, of course, where there is a demand of this sort it goes without saying that there is pretty sure to be a responsive supply. Taking a casual retrospect of the last session of local work, I find a plentiful supply of panaceas—both as to quality and quantity. Some have the authority of great names attached to their labels, and all represent an expenditure of thought which, though it may strike me as misdirected, none the less commands our gratitude and respectful attention.

The Tale of Woe.

Here they are, a round dozen, and the list not exhausted then:—(1) A Test Case on Titles, (2) Abolition of the Stamp Acts, (3) Abolition of Company Pharmacy, (4) Territorial Representation on the Council, (5) Post-Minor Courses in Side-lines, (6) Division of the Qualifying Examination, (7) A Guild of Pharmacy, (8) Complete Separation of Prescribing and Dispensing, (9) Pharmaceutical M.P.'s, (10) Modification of Preliminary Requirements, (11) Reduction of Subscription to the Pharmaceutical Society, (12) A Court of Reference under the Sale of Food and Drugs Act. Then there are compulsory membership for the voluntary Society, an annual registration fee, branches of the Society in provincial centres, a travelling secretary, a paid collector of subscriptions; together with other schemes, suggestions, and hints, more or less radical in character or doubtful in value. I have even had it represented to me in apparent sincerity that all our recent troubles are due to having relieved Divisional Secretaries from the duty of collecting subscriptions; but perhaps my friend was simply trying to test the extent of my sense of humour.

An Unknown Quantity.

Without attempting now to discuss the intrinsic or relative value of the rich instruments of reform just read out to you, I venture to claim that their number and variety afford the means for pointing a moral, or at any rate, provide material for reflection. In the multitude of councillors there is said to be wisdom, and no doubt the saying is mathematically and arithmetically accurate; for the wisdom of one councillor multiplied "x" times must be that much greater than the multiplicand; but, outside the science of figures, where is it possible to obtain the weight of the product of indefinitely repeated wisdom? Douglas Jerrold, of "Curtain Lecture" fame, used to say of certain insects with which he was troubled at a country lodging-house, that if they had been all of one mind they could have pulled him out of bed. Similarly, a multitude of advisers and the consequent plethora of specifics convert the possibility of advancement into impotent restlessness.

Council's Opinion.

If the united judgment and energy of the registered persons of Great Britain were spread over fewer objects at a time there might be less occasion for lachrymose references to what this, that, or the other corporate body ought to have done. But, unfortunately, we, like many other classes in the world, often give wrong interpretations to well-used terms. We are apt

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[*] Address to the Wolverhampton and District Chemists' Association, delivered November 4, 1903.

to look upon "bustle" as synonymous with "progress," and to regard a full programme as equivalent to a triumphant cause. We "lay the flattering unction to our soul" that we are smart, and love to be considered up to date (as, indeed, we are in business matters), and are borrowing the national verbal aggressiveness of which Kipling has lyrically reminded us. It is a mistaken line of action, however, and I am playing the part of Jeremiah—for this night only—in the hope that the coming Parliamentary session may find us with more unity and fixity of purpose, more disposition to pull together, than we have heretofore manifested. I am prepared to admit—to a limited extent, of course—that the Council of the Society has in times past not governed enough, and that there may be a grain of truth in the impeachment that it has not habitually played the rôle that officially belongs to it—that of leadership. That is a confession which no doubt will involve me in a series of bad quarters of an hour with my colleagues (worse luck!), but how else can I account for the rapid growth of major-generals in the pharmaceutical army? If the army is not led it will naturally break up into self-containing and mutually repelling groups, all arrayed against those natural general-officers who, by beneficent statutes and State-sanctioned bye-laws, have been elected for the express purpose of leading and directing. The essentials, then, of real progress are, first, a Council not too timid to lead, and secondly, a membership not too indifferent to follow. Now, in regard to the first requisite, there are signs that it is becoming a concrete actuality, for my colleagues have resolved to unfurl their banner, the banner with the strange device—the Pharmacy Bill. They have analysed all the panaceas and found disturbing ingredients that, in their deliberate judgment, will not just now suit the delicate constitution of pharmacy. They have examined the "test case" from all points of view, and have had to agree with the dictum of a disappointed suitor that a test case is one which is brought to test how much the lawyers can make out of it. They have acquired the certitude that the abolition of the Medicine Stamp Duty Acts would mean the abolition of privileges which are as anchors to our professionalism, and they see in territorial representation a brilliant piece of workmanship too costly and too intricate to warrant immediate attention. Do you think the Council so deficient in worldly wisdom as to ignore any of the specifics that promise the chance of laurel leaves on easy terms? I can tell you the present Council is not constituted that way. But the members are not disposed to risk the future of the calling for the price of any species of classic folia. That way madness lies.

The People's Budget.

Let me, at the risk of being tedious, take a typical example of the temptations a councillor has to resist—the reduction of the annual subscription to the Society. I have had representations made to me on more than one occasion that, if the subscription were reduced to five shillings a year, the Society would be made practically identical with the Register. Now, that object—the consolidation of the whole calling within the ranks of the Society—is one of the dreams of the founders, and I felt impelled to look carefully at this suggested cure. What is the result? Our income last year was, in round figures, £5,559 from 5,292 members, who paid 21s. each. Suppose they had paid five shillings each, the income would have been £1,325 15s., or a loss of £4,236. To make up such a loss there would be required 16,944 additional members at five shillings—that is to say, nearly 7,000 more than there are names on the Register! Suppose the subscription were fixed at half a guinea, it would necessitate an additional membership of 5,295 to equalise our balance-sheet, and I, for one, feel sure that not half that number would be attracted by the nimble ten-and-six. I am deliberately of opinion that it is not a feasible way of improving our institution by giving it more to do for a smaller income, and I have had to give up that chance of acquiring a pleasing reputation. A similar tempting subject, for councillors in search of immortality, is the division of the qualifying examination. Think of the latent gratitude of parents, guardians, and budding candidates that awaits the men who push this panacea! I made a bid for greatness in this direction, yet the majority—wiser in its generation, perhaps—withstood even this, and substituted, in the Pharmacy Bill, that which it is thought should precede any modification of the qualifying examination, but which must inevitably lead to a rational readjustment of that examination.

The Better Part.

I have mentioned these items to show that the Council to-day is manifesting a disposition to lead; that it is examining carefully every suggested remedy, and that it has definitely embodied a recognisable concrete policy in its draft Bill. Essential ingredient No. 1 is thus *en évidence*, and Bloomsbury may be said to have found a remedy for its official panaceas, viz., in what my friend Gifford very aptly calls a "straight issue." Now, what is necessary on the other side is a straight following, a loyal devotion to the work which the leaders have, after councils of war, selected as the most expedient and most urgent to be done, and a calm determination to have the measure which voices some, at any rate, of your aspirations at least heard by those who legislate for us. The time for criticising clauses is not with us now; there may be portions of the Pharmacy Bill which appear to call for doubt, or even hostility, on your part, but it would be a serious blunder in tactics to discuss them now; moreover, how can your Council explain openly all the reasons which may urge them to reject the obvious? The mechanism of statesmanship must not be too apparent, and it is sometimes necessary, as Shakespeare has it, to cover "Discretion with a coat of folly." What I and my colleagues plead for, in this connection, is that chemists throughout the country shall more readily concede to us in Bloomsbury a knowledge of the elements of leadership and statecraft, and try to imagine the apparent folly as vitalising the underlying non-apparent discretion.

The Only Way.

Believe me, there is but one panacea for chemists, and that is loyalty. Loyalty to their craft, loyalty to their accredited representatives, and to themselves. To paraphrase the stimulating words addressed by the late W. E. Gladstone to a school, at a prize-giving function, I would say to every registered man, "Be inspired by the belief that yours is a great and noble calling, not a mean and grovelling thing that you are to shuffle through as you can." Depend upon it, if that point of view were adopted more generally we could often compel recognition and respect where we now only court contempt. I have, perhaps, wearied you by my somewhat rambling remarks, but, like Mr. John Morley, I do not propose to apologise, for it is sometimes good to be worried. There is a vast amount of wisdom in the stable philosophy which maintained that fleas are good for a dog, because they keep him from brooding on the fact that he is only a dog, and I present that consolatory wisdom for general reflection.

Moral.

Coming back to panaceas again, and the plethora thereof, I want to say again that none of the items mentioned by me to-night are regarded in my mind as subjects for cynical reference—perish the thought—but rather as examples of energy likely to be wasted, as all effort must be if applied to the wrong spot at an inopportune time. I rejoice to find the energy existing at all, and think it a gratifying sign that apathy has at least given place, and is giving place, to more or less intelligent discussion and speculation. Nor is the restless spirit in pharmacy altogether bad, for unrest has before now, in the history of the world, been the herald of reform and the harbinger of better things. We must, indeed, be careful to muzzle no man's activity, and to ignore no man's opinion, however extravagant; for the most unlikely plan may contain the germ of practicability—though heavily disguised, and wisdom may indeed proceed from pharmaceutical babes and sucklings—even if it be accidental. But, in saying this, and feeling tolerant towards the views and opinions of "all sorts and conditions of men," it is necessary to be insistent upon the warning I have tried to convey to-night, namely, that too much effort, widely dispersed, is as futile as too little, and bears no more fruit than would the lugubrious complainings of an apathetic craft. I do not want to see the high possibilities of our calling frittered away in fractional effort, or in heroic frenzies over purely local matters, or dissipated by ingenious repudiation of the central administrative body, and, if any word of mine to-night shall have the indirect effect of turning pharmacists' minds towards the altar of political unity, I shall rejoice at the improved prospect of taking pharmacy from the category of unpractised swimmers in the sea of trouble—swimmers who, "plunging still, with too great effort drown for want of skill."

THE CALCIUM CHLORIDE TEST FOR SOLUBLE CITRATES.

BY F. H. ALCOCK.

This test is a source of constant trouble to the young student, as also to the teacher, by virtue of the former's failure to get satisfactory results. If the test be conducted as follows he will be more satisfied of the presence or absence of citrates than by adopting the usual methods.

Having neutralised, or rendered faintly alkaline, the aqueous citrate solution, if not so already, by means of the ten per cent. ammonia water and addition of solution of calcium chloride in such a quantity as, when subjected to the same boiling treatment for about five minutes, no precipitate makes its appearance, or only a slight one (which may be removed by filtration, if thought necessary, before adding the citrate solution), when the citrate is known to be absent (*i.e.*, in a blank experiment). Two ounces of distilled water is placed in an eight-ounce cut-down flask (many of which are to be met with in all laboratories), or if tap water is used add a few drops of dilute hydrochloric acid, to prevent the deposition of calcium carbonate obscuring the view, raise to the boiling point, and lower the tube containing the solution, prepared as above described, into the hot water in the flask. After from three to ten minutes, according to the quantity of citrate present, an opaque white crystalline precipitate makes its appearance which is not likely to be mistaken for the precipitate which appears in the blank experiment, and which may be calcium or aluminium or magnesium hydroxides, the last two being often found as impurities in the calcium salt.

A piece of litmus paper, ¼ inch square, is usefully added to the liquid in the test tube at the beginning of the operation, for it acts as a nucleus of crystallisation, and, being driven about by convection, causes precipitation to proceed more rapidly and gather to itself a covering-mass of adherent crystals. He will then collect, wash, and test the precipitate in order to confirm the presence of the citrate by any positive or negative test he may know.

PARIS SKETCHES.

(1) THE CHEMIST LAW-MAKER.

STATUE TO LAVOISIER.

Interview with Monsieur Astier.

THERE can be little doubt that the law relating to pharmacy in France is, in some respects, in a more topsy-turvy condition than it is in England. True, company pharmacy is unheard of in the land where one chemist can only keep one shop; and there the dispensing doctor is practically unknown. But the *pharmacien* has to meet competition which the English chemist knows not of, for, strange to relate, across the Channel the grocer can sell poisons when the pharmacist cannot. This, in spite of the fact that at least five *pharmaciens* are members of the French Legislative Assembly, five chemist shop-keepers—that is to say, five men who earn their living by dispensing medicines—who spend their time between the dispensing counter and the Place de la Concorde, where is situated the Chamber of Deputies. Of these five chemist Deputies, by far the most prominent is Monsieur Astier. It is predicted that he will one day become Minister of Commerce; he is already a man of great influence, whose friendship is sought and cultivated on every hand; and, by-the-way, he is a personal friend of President Loubet.

Monsieur Astier has reached this position at an early age, for he is still in the prime of life, and not so very many years ago he was working as a lad on a Provençal farm. His progress was rapid, and he was elected as a member of the Assembly almost before his friends had forgotten his country days. First rejected by a Paris constituency, he was received with open arms by the electors of his native village and the surrounding district.

He is the greatest authority on pharmacy law in France, and it is he who, for the last five years, has been endeavouring to procure fresh legislation for his French colleagues. It was therefore only natural that a representative of the Journal, finding himself in Paris on the occasion of the Centenary celebrations, should take an opportunity of paying him a visit. But it is necessary to be an early riser if one wishes to see Monsieur le Député Astier. After eight o'clock in the morning he is at home to no one less than a Cabinet Minister, and so the *P. J.* interviewer was obliged to be up betimes.

Away out in the charming suburb of Auteuil, not far from the racecourse, in one of the narrow, hilly little streets, M. Astier does a day's work between 8 and 10 a.m. On the way from the English quarter, one has driven along the right bank of the Seine; leaving on the right the Champs Elysées, the Trocadéro, the site of the last Exhibition and the famous new bridge are passed on the journey.

In the main street of Auteuil, despite the early hour, the shops are already open, the Parisiens have partaken of their *petit déjeuner*, housewives are out with their little baskets, the butcher's boy is already delivering the meat, the children are on their way to school, the marchand de vin is wiping over his zinc counter after the early morning work, and the streets generally resemble the London suburbs two hours later.

Monsieur Astier is already seated at his bureau, with a half-smoked *demi-londrès* in his mouth, and after the manner of a Parisien, he is polite even to an interviewer. The Journal representative explains the object of his visit, which is to ask a few details about the *projet de loi*, which M. Astier, in conjunction with his friend, M. Cruppi (the advocate), is endeavouring to convert into an Act. After a few preliminary observations, M. Astier plunges at once into his subject.

"In the first place, I must remind you," began the chemist M.P., "that the law which at present governs the practice of pharmacy in France has just celebrated its hundredth birthday; this is known as the 'Loi de Germinal.' Now, this Act, which is dated April 11, 1803, protects pharmacists—that is to say, it would if it were administered."

"But," interrupted the interviewer, "whose fault is it that it is not administered? You have your 'Société de Prévoyance,' which takes upon itself to inform the Government in cases of infractions of the law?"

"Quite so, but in spite of the efforts of this Society the law is most inefficiently administered. In any case, it is applied in such a manner as to make its effect altogether contrary to what Fourcroy, the framer of the Bill, intended. In fact, instead of protecting the chemist, it shields his unqualified competitors. If, for example, a grocer acts as a *pharmacien* and infringes the law by selling—not dispensing—drugs, the excuse is made that the law is old, old-fashioned, and obsolete; but, on the contrary, if it is a chemist who is the culprit, then the law is rigidly enforced."

This difference between the intention of the framers and the real effect of the Act recalled a similar state of affairs on this side of the Channel, but the interviewer did not interrupt, and the law-maker continued:

"Now, according to the 'Loi de Germinal,' a *pharmacien* can sell nothing without a prescription—not even two *sous*' worth of cream of tartar or a bottle of *eau de melisse*. And yet if a grocer sell these things no action is taken. And it will give you an idea of the manner in which an offending chemist is prosecuted when I tell you that quite recently one was fined for selling iodide of potassium without a doctor's order."

"Of course, your Bill alters all this?" queried the interviewer. And in answer to this Monsieur Astier proceeded to state in brief what were the main principles of his measure.

"Mon projet de loi," commenced the Deputy, "est le plus favorable aux pharmaciens et pour l'intérêt generale." But, remembering he was not addressing the Chamber, but merely an alien in search of information, he dropped into a less oratorical style and continued: "As I have just told you, according to the existing law, the chemist can sell no medicaments except on a prescription from a doctor. Now, according to the Bill which I have introduced, this will be altered—in fact, the position will be turned round. *Mon projet* specifies a list of drugs which cannot be sold without a prescription, whilst all those not included in this list may be sold at the discretion of the pharmacist."

"Something like our schedule?"

"Precisely." And here M. Astier showed that he had made himself acquainted not only with English pharmacy law, but also the condition of pharmacy in England as well as in other countries.

After explaining that this clause is being opposed by the medical profession, M. Astier proceeded to important point No. 2.

"The Bill destroys secret remedies, in that it insists that the names and quantities of the ingredients be placed on each preparation. There is a regulation to a similar effect in vogue at present, but it is not enforced, for the same reason as in other instances; but the new law will make it impossible."

One wondered how this would affect the large sale which English and American patents enjoyed in France; but M. Astier at once proceeded to the next point.

"The clause," he said, "which has met with opposition from pharmacists is that which relates to the exploiting of proprietary medicines by companies. My Bill provides that a syndicate—or, as you call it in England, a company—can capitalise, manufacture, and place on the market a proprietary medicine provided that one of the members of the syndicate is a qualified chemist."

"But that seems to be a step towards what we in England are fighting against?"

"No, not at all. A syndicate here will not be able to open a pharmacy as they do in England; nor does the Bill interfere with the present rule limiting one pharmacy to one *pharmacien*. You should know that in France there are 3,000 manufacturers of proprietary medicines—the majority of them, of course, in a comparatively small way of business; and in addition to these the 'Association Syndicale des Pharmaciens' also places specialties on the market. Many good proprietaries are unknown simply because there is no capital at the back of them. The result of this clause will be to supply the necessary capital to exploit them."

"These, then," abruptly terminated the chemist legislator, for another caller had just been announced, "are the three main points of *mon projet de loi*—namely, (1) the list of drugs which cannot be supplied without a prescription, (2) the abolition of secret remedies, and (3) the capitalisation of proprietaries by others than chemists."

"Have you any hopes of its passing?" And the reply to this natural question was hopeful.

"Yes. I expect it to come before the Chamber early next year. A measure framed on similar lines passed the Chamber and the Senate eight years ago, but never reached the President. At that time it met with the approval of chemists, but now a lot of them are opposed to it."

"How do you account for that?"

But the only answer the proprietor of "Kola-Astier" made to this was a shrug of the shoulders as he bowed his inquisitive visitor out.

PRACTICAL NOTES AND FORMULÆ.

To Remove the Odour of Iodoform.

F. Lafforgue states that the odour of iodoform may be satisfactorily removed from the hands by rinsing them, after washing with soap and water, with a little orange flower water.—*Bull. gén. de Therap.*, **145**, 115.

Ink Eraser Powder.

An excellent erasive powder for ink may be prepared from a mixture of equal parts of powdered alum, sulphur, amber, and potassium nitrate. A small quantity is sprinkled on the ink blot or writing which it is desired to erase, and rubbed with a piece of clean blotting paper or rag. The mark is thus completely removed.—*Nat. Drugg.*, **33**, 7, after *Pharm. Zeit.*

Soap for Cleaning Silver Plate.

Coconut oil, 80; solution of soda, or potash, sp. g. 1·360, 40; water, 10; ammonium chloride, 1. Heat the oil and alkali together until saponification is complete. Dissolve the sal ammoniac in the water, mix with the solution. Finally heat to boiling, then remove from the fire at once.—*Drugg. Circ.*, **46**, 234.

THE STUDENTS' COLUMNS.

THE PRESERVATION OF DRUGS (I).

There are many influences at work which act prejudicially upon the properties of medicinal substances when these are kept under unsuitable conditions. They may be classified as physical, biological, and chemical, though apart from their immediate or exciting cause their results are manifested almost entirely in the chemical alteration of substances contained in the drugs leading to a diminution or total loss of their medicinal value. It is, therefore, desirable to consider what these influences are, and how they may be most satisfactorily met; otherwise the greatest skill in preparation may be neutralised by subsequent changes in the article produced. The most frequently occurring cause of deterioration is the presence of fungi belonging chiefly to the groups known as bacteria and moulds. The bacteria are unicellular organisms, which divide and multiply by fission, while the moulds form a branching mass of cells known as the mycelium, which often form at the surface a felt-like mass from which, under suitable conditions, spores are produced. These fungi are devoid of chlorophyll, and are therefore dependent for their supply of nourishment upon organic substances. They require for their development the presence of moisture, and a comparatively limited number of mineral substances. Since they are found almost universally distributed, drugs derived from animal and vegetable materia medica are always liable to their attacks if kept under the conditions which allow of their development. The changes produced by them are of the most varied description; carbohydrates are converted into alcohol and carbon dioxide, acetic, lactic, and butyric acids; albuminous substances or proteids are decomposed with production of evil-smelling compounds, such as hydrogen sulphide, phosphoretted compounds, ammonia and various amines. Alkaloids and other active principles are also destroyed. The distinguishing feature of their action is that the amount of organic substances decomposed under the influence of their activity is enormously greater than that required for their immediate nourishment, and this is probably due to the secretion of enzymes—sometimes known as unorganised ferments. The vitality of the moulds, like that of all living organisms, is diminished or inhibited at low temperatures, and destroyed at high temperatures, while the presence of certain substances known as antiseptics exercises similar effects.

With a knowledge of the conditions favourable for their development, on the one hand, and their destruction, on the other, we are able to take suitable precautions to avoid the deleterious action of these mould organisms. Thus, in the collection of vegetable drugs, the tissues should be dried as rapidly as possible, since the presence of moisture is favourable for the development of moulds, and, after drying, the material should be stored in a dry situation. Cool storage is also essential, since the activity of moulds and bacteria is materially increased at temperatures above that of the ordinary atmosphere. In the preparation of infusions, syrups, extracts, etc., from fresh vegetable drugs, the operations should be commenced as soon as possible after collection, in order that the organisms inevitably present in the material should have as little time as possible for the development of their activity. The destruction of the fungi—*i.e.*, the sterilisation of the material in which they exist—may also be accomplished in two ways:—(1) by heat; (2) by the addition of antiseptics. Nearly all living organisms are destroyed at the temperature of boiling water, 100° C.; sometimes considerably below this temperature, although the spores of certain fungi resist the action of heat considerably higher than 100° C. for a limited period. The action of heat in destroying fungi, and hence in preserving substances from putrefactive fermentation, may be demonstrated by simple experiments upon any of the official infusions. It is well known that infusions prepared and stored without particular precautions become mouldy and unpresentable after a few days, owing to the development of moulds in the fluid. If, however, a portion of the infusion be placed in a flask, the neck of which is plugged with cotton-wool, and the contents heated to 100° C., the heated product, in most cases, will remain without any signs of putrefaction for a comparatively long period. Certain bacteria, *Bacillus subtilis*, for example, form spores which are highly resistant to heat, and are only certainly destroyed by heating several degrees above the boiling point of water. If any of these be present in the contents of the flask they will survive the heating, and afterwards develop into the ordinary vegetative form. In making the official infusions with boiling water, the product will not usually be quite sterile, although nearly so in many cases, because the water is naturally cooled by contact with the drug and container and only the less resistant forms of moulds and bacteria will be destroyed. Moreover, in straining, the material is re-exposed to infection from the air and the straining materials. Nevertheless, a freshly made infusion poured into clean vessels, to entirely fill them, and then tied over with bladder, will be found to remain good many days longer than it otherwise would, since the infection has been thereby reduced.

In order that putrefaction shall be entirely prevented, the material must be completely sealed after sterilisation, as is done in the case of tinned provisions. Even here, however, the contents of the package may subsequently putrefy, owing to the seal being imperfect, or the organisms not having been entirely destroyed by the heat. To make sure of the latter point, the material, after once heating and sealing, would require reheating two or three times, with an interval between each, in order that the highly-resistant spores might develop into the ordinary form, which is more easily destroyed. The question of absolute sterility, except so far as pathogenic organisms are concerned, is not of paramount importance when the material is to be taken by the mouth; when, however, the material is to be used for hypodermic injection, then it becomes important, because many organisms which are harmless when taken into the stomach, where they are really outside the body, and are exposed to the action of the gastric juice, set up inflammation at the seat of injection. Hence the greatest possible precautions should be taken in preparing hypodermic injections, first, because the organisms may give rise to the trouble just mentioned, and, secondly, because the dissolved substances, in the case of alkaloids and other organic bodies, will be destroyed by the development of the fungus. It should also be remembered that a sterilised product ceases to be so as soon as it is exposed to the air under ordinary conditions. For convenience in handling it is, therefore, more practicable to adopt the method of antiseptics, *i.e.*, to add sufficient of some preservative substance which is capable of inhibiting the growth and development of the organisms, or to use, as in the case of tinctures, a solvent or menstruum which is itself an antiseptic. So far as pharmacy is concerned, alcohol is the most important antiseptic, since its presence, in the required proportions, is entirely harmless, and in many cases highly advantageous, both to the flavour and appearance of the product.

Bottling Wax for Cold Use.

Resin, 6; suet, 3; Venice turpentine, 4; precipitated chalk 4; red lead, 4. Melt the resin, suet, and Venice turpentine together, and incorporate the powders. It becomes pasty at 98° F., and may then be used for bottling wax.—*Les Corps gras Industrielle*, through *Nat. Drugg.*, 33, 10,

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

MEETING OF COUNCIL.

WEDNESDAY, NOVEMBER 4, 1903.

THE President, Mr. S. R. Atkins, took the chair at the meeting of the Council on Wednesday last. Other members of Council present were:—Mr. C. B. Allen (Vice-President), Mr. Walter Hills (Treasurer), and Messrs. Carteighe, Cooper, Corder, Cross, Currie, Gifford, Glyn-Jones, Harrington, Harrison, Newsholme, Robinson, Southall, Storrar, Symes, Wootton, and Young.

The President said he regretted to say that his colleague, Mr. Taylor, was unable to be present, in consequence of ill-health. He was sure they all hoped he would soon be better. He would like to say, also, that the Secretary was better, and was to return to London that evening.

The minutes of the October meeting of the Council were confirmed.

The Late Barnard Proctor.

Mr. Chater, in the absence of the Secretary, read the following letter from the daughter of the late Mr. Barnard S. Proctor:—

> Melrose, Westbury-on-Trym, near Bristol.
> October 12, 1903.
>
> Dear Sir,—I beg to thank you and the Pharmaceutical Council, on behalf of my mother and all the members of this family, for the sympathetic recognition sent us in our sorrow. Everyone who came into contact with my father spoke in the same way, and we who lived with him found him always kind, gentle, and loving, considerate of others, and yet one who would spare himself no trouble where he could help others, or teach them how to help themselves. Please convey our united thanks to the Council. Yours sincerely,
>
> (Signed) Alice Proctor.

The Late Nathaniel Smith.

The President then moved the following:—

> That this Council desires to express its regret at the death of Nathaniel Smith, of Cheltenham, a founder of the Society, and a former member of the Council, whose loyalty to the ideals which found embodiment in the foundation of the Society, and his great interest in the work of that Society, have never wavered through the intervening sixty-two years of its history. The Council tenders its sympathy to Mr. Smith's family, and assures them of its high appreciation of the life and character of its deceased member.

This was seconded by the Vice-President.

The President said Mr. Smith had been a very old and valued friend of his through long years. Last September, while staying at Malvern, he received a letter from Mr. Smith, asking him to go and spend a day with him. He went, and a very pleasant day was spent at Mr. Smith's country residence, at the foot of the Cotswold Hills. That day had now received an accentuation of pathos, since his friend had been removed from them. During the visit referred to, it was extremely pleasing to him to hear the old gentleman reciting the history of his early business struggles, and of that strenuous activity by which he climbed to a very distinguished position in pharmacy. One thing that interested him was the fact that in early life Mr. Smith was an assistant in Bond Street, London, with a Mr. Gray, who was a son of the celebrated author of Gray's 'Supplement,' and in that connection he would just like to say how much he regretted that there was not some way or other by which a record of the reminiscences of eminent men like those who had recently passed away could be secured. Mr. Smith had a most charming and lovable home, and the kindness he showed to him he (the President) should never forget. As he was being driven to the station by Mr. Smith, he expressed the hope that God would spare his life that he might see a century, and Mr. Smith replied: "Well, I do not know that I may not live to see a century." However, "Man proposes and God disposes," and his friend had gone. They had lost a distinguished pharmacist, who was one of the founders of the Pharmaceutical Society—of whom he believed only three were now left—and they had lost a man who was extremely loyal to the Society.

Mr. Robinson said he had known Mr. Smith for the last thirty years, and had the pleasure of visiting him during the past summer, when he (Mr. Smith) sent his kind regards to all the members of the Council. He was then very active, and took great delight in showing his old prescription books, and in telling of his early history. Mr. Smith's career was a most interesting one, and his example such as they might all follow. He was a man of charming disposition, and he (Mr. Robinson) was sure they all deeply regretted his death, and concurred in the proposed resolution.

Mr. Southall also supported the resolution, and endorsed all that had been said by the President and Mr. Robinson, he having known Mr. Smith for many years.

The resolution was then carried in silence.

Dr. Swan's Birthday.

The President said he had to state to the Council that their distinguished friend, Dr. Joseph Wilson Swan, who gave so charming an address to the students at the inaugural meeting in October, recently celebrated his birthday, and he thought he might venture, on behalf of the Council, to tender their hearty congratulations by telegram, as follows:—

> President and members of Pharmaceutical Society offer respectful congratulations. May you long be spared to the Empire of Science you have done so much to enrich and extend.—(Signed) Bremridge, Secretary.

Dr. Swan replied to that telegram thus:—

> Your very kind message received with much pleasure. Please convey my best thanks to the President and members.—(Signed) Swan.

The President, continuing, said he had reason to know, from correspondence with Dr. Swan, that he felt a deep and growing interest in the welfare of the Society. At the dinner of the Pharmacy Club he had the pleasure of having a long conversation with Dr. Swan, and he was prepared to say that they had no warmer friend of the Society than Dr. Swan.

The President's Visit to Paris.

The President said he would like to be permitted to make a brief reference to his recent visit to Paris. He wished to say, at the outset, that he disclaimed any personal merit, or any personal reference; what was done, was done to him as President of the Society, and he wished to state that he had a most kindly, generous, and hospitable reception in Paris. He should never forget it. He had had a few honours and events in his career which were milestones along the road of life, but he could honestly say that he had never participated in anything of so brilliant and distinguished a character as the centenary of the Société de Paris. He might just say, briefly, that at the business meeting addresses were delivered by the President, M. Léger, and a very elaborate discourse upon the history of the Society was read by M. Bourquelot. Their utterances were memorable on account of their brilliant oratory; he had scarcely ever heard anything so beautiful in the exquisite language of France. At the same meeting, or *séance*, in the afternoon he had the honour of reading the address sent from the Pharmaceutical Society of Great Britain. The dinner or banquet was an extremely brilliant function, as might naturally be supposed to be the case in France, where the art of dining and *cuisine*—which was a better word than the English word "cookery"—were so highly esteemed. The room in which the banquet took place was most exquisitely furnished, and the whole affair was perfect as a work of art. Then in regard to the speeches, there was only one toast, viz., "The Science of the World," proposed by the President, M. Léger, who was present at the annual dinner of the Society in May, and after the toast had been drunk, much to his surprise, he (Mr. Atkins) was called upon first to speak to the toast as the representative of pharmacy in Great Britain. He had thought he might have come on a little later, but as soon as the President had finished speaking, his name was called. The dinner was a most pleasant function. On his left was M. Petit, who sent kindly regards to his colleagues here, and on the other side was Professor Schaer, of Strassbourg, a man distinguished in science, who was also able to converse with him in English, so that the whole thing was most satisfactorily arranged. He went to Paris with his friend, Mr. Idris, who represented the British Pharmaceutical Conference as its President, and whose knowledge of Paris was considerable. He also had the very helpful assistance of a member of the editorial staff of the *Pharmaceutical Journal*, Mr. Goodall, who kindly placed his services at his (Mr. Atkins') disposal and rendered him great help. Then Mr. Backhouse, of the firm of Roberts and Co., had called at the office and told Mr. Bremridge that he would be pleased to place his services at the disposal of the President on the occasion of his visit to Paris, and had he not been so well served he should have been pleased to have availed himself of the services of Mr. Backhouse; but, as it was, he called and thanked him for his kind offer of assistance. While he was in Paris a very pleasant meeting of the English assistants in Paris pharmacies was arranged and a small dinner was organised, to which Mr. Idris and he were invited. The behaviour of the assistants was extremely kind, and they were able to talk together in a most friendly manner. Personally, he learned from them a great deal of most valuable information in regard to the condition of pharmacy in France, and he was very glad to be able to state that since that meeting the Secretary had received a list of five names of English assistants in Paris who wished to become members of the Society. He would not say that was the result of his visit to France, but rather of the activity and interest in the Society of Mr. R. E. Lloyd, who had been for some eight or ten years in one of the Paris pharmacies. Mr. Lloyd was very loyal to the Society, and it was he who had sent over the list of names, which would be dealt with later on. He believed that list was only the first instalment, and it was probable that his visit to Paris would be followed by a further increase in the membership of the Society. He ventured to say that his visit had not only strengthened the *entente cordiale* between the two Societies, but they now more keenly appreciated each other's work.

Mr. Hills, as one of the past-Presidents of the Society, and as one who had some experience of life in Paris, expressed his pleasure and satisfaction that the Society was so happily represented at the centenary of the Paris Society. The President had spoken of the brilliant oratory of the French, but he thought the President of the Pharmaceutical Society of Great Britain could hold his own with the Frenchmen to whom he had alluded. The Society was particularly happy in its representative, and he was sure much good had been effected by the visit. The *entente cordiale* had been strengthened not only between the two Societies, but also, in an indirect way, between the two nations. He felt that he was only expressing the views of his colleagues when he thanked Mr. Atkins for the way in which he had represented the Society on the occasion of the centenary of the Paris Society.

Election of Members.

The following persons having tendered their subscriptions for the current year were elected members of the Society:—

Bickley, Benjamin; Ellesmere
Hewlett, Vivian Charles; Beckenham
Warren, Margaret Grayston; Catford

Restorations to the Society.

Several persons were restored to the Society upon payment o the current year's subscription.

Restorations to Register.

The following persons having made the required declarations, and paid the restoration fee of one guinea, were restored to the Register of Chemists and Druggists:—

Craig, Henry Riddell; 18, Montpelier Terrace, Edinburgh
Francis, Henry St. David; 22, High Street, Bromley
Freeman, Arthur Alexander; 126, Luton Road, Chatham
Gibson, James Edward; 27, Albert Terrace, Middlesbrough
Rae, Alexander David; 7, Cambridge Road, Anerley, S.E.
Vickerman, Edwin; 183, Hunslet Road, Leeds

Diploma.

Leonard Stephen Willox being duly registered as a Pharmaceutical Chemist, was granted a diploma stamped with the seal of the Society.

Finance Committee.

The report of this Committee was as follows:—

October 28, 1903.

Mr. Robinson in the Chair.

Present—Messrs. Allen, Carteighe, Harrington, and Hills.

1. The Secretary submitted the following statement of the accounts:—

General Fund:—	£	s.	d.	£	s.	d.
Balance from last account				1,609	3	1
Receipts:—						
Penalties and costs ...	17	5	0			
Rents	54	17	4			
Subscriptions	59	6	6			
Restoration fees... ...	126	0	0			
School fees	1.045	13	0			
				1.303	1	10
				2.912	4	11
Payments authorised by the Council ...				2.582	16	3
Balance				£329	8	8

Amounts Recommended for Payment:—

	£	s.	d.
On behalf of the *Journal*...	£612	19	5
Repairs	497	9	9
House	173	13	10
Law charges	33	7	0
Stationery, etc	28	0	11
Examination Charges, etc.	359	19	4
Current expenses	200	0	0
Monthly salaries	166	5	0
Library	14	9	11
	£2.158	14	5

Benevolent Fund (Current Account):—

Balance from last account	£393	10	7
Receipts—Subscriptions and ground rents	171	16	10
	565	7	5
Payments—Grants, etc.	222	2	0
Balance on the current account... ...	£343	5	5
Balance on the donation account ...	£19	13	6

2. The Committee examined the accounts and found them to be correct, and in accordance with the foregoing statement.

Recommended that the Treasurer be requested to pay the amounts indicated.

R. A. Robinson, Chairman.

On the motion of the Chairman, Mr. Robinson, seconded by Mr. Hills, Treasurer, the report and recommendations of the Finance Committee were adopted.

Benevolent Fund Committee.

The report of this Committee included the recommendation of grants to the amount of £122 in the following cases:—

Former member. 75. Has had previous grant. Dalston.

Former member and subscriber. 60. Has had previous grants. Balham.

Registered chemist and druggist. 54. Gravesend.

Registered chemist and druggist, and subscriber to Fund. 63. Eccleshall.

Registered chemist and druggist. 63. Camberwell.

Widow of member and subscriber. 58. Has had previous grants. Seaforth.

Widow of member and subscriber. 70. Has had previous grants. Motherwell.

Former member and subscriber. 79. Has had previous grants. Ipswich.

Registered chemist and druggist. 74. Has had previous grants. Maida Hill.

Two cases were deferred for further consideration.

The Vice-President moved that the report and recommendations of the Committee be received and adopted.

Mr. Cross seconded the motion, and it was carried unanimously.

Donation to the Benevolent Fund.

The President announced that a donation of £100 had been received from Mr. Standen Paine, of Manchester, and he stated that the best thanks of the Society would be sent to Mr. Paine for his generous donation.

Library, Museum, School, and House Committee.

The report of this Committee was as follows:—

October 14, 1903.

Mr. Atkins, President, in the Chair.

Present—Messrs. Carteighe, Hills, and Robinson.

1. The Committee received the usual monthly statements respecting the Society's Libraries and Museums in London and in Edinburgh, and particulars of these are published in the *Pharmaceutical Journal* for October 17, 1903.

2. Museum.—The Curator drew attention to the distinguished visitors to the Museum during the past two months, and reported in detail on the work done in his department.

The Museum Report (1894-1902), which was ordered to be printed in separate form, and for which an estimate of £36 10s. was accepted in July last, was again brought before the Committee, it having been found necessary to add to the manuscript. A revised estimate for £45 inclusive was submitted.

Recommended—That the above-mentioned estimate for £45 be accepted, and the work put in hand at once.

The Curator also reported on the Museums' Association meeting.

3. Library.—Mr. Knapman reported that at the annual revision of the Library no books were missing. He asked for direction in regard to relieving the Library by weeding out the less important or obsolete books. The Committee authorised the transfer to Edinburgh of all duplicate volumes not already in the Society's Library at York Place, and instructed Mr. Knapman to make out a list of the other volumes he proposed should be withdrawn from the Library, and submit it to the Committee at its next meeting.

Mr. Knapman also reported on the Library Association meeting.

4. School.—The Secretary reported on the entries for the present session, and the School Staff reported on the work of the various classes.

On the advice of the Professor of Chemistry, certain students were allowed to work in the Practical Chemistry Laboratory until Christmas, for a fee of eight guineas.

The School Staff reported on the question of a Board of Study in Pharmacy at the London University, and urged that representation should now be made by the Council to the Senatus, in favour of the establishment of such a Board.

Recommended that the necessary representation be made accordingly.

5. Registers, Etc.—Recommended that the necessary number of Registers and Calendars for 1904 be ordered, in accordance with the estimates and contract entered upon last year.

6. Messrs. Parkinson's Bill for £490 2s. 9d. was considered, passed, and sent to the Finance Committee.

Research.—Professor Greenish submitted the final portion of the work which he and Mr. Upsher Smith had undertaken on the "Solubilities of the Pharmacopœia." The Committee ordered the paper to be published in the *Pharmaceutical Journal*, and a copy sent to the Chairman of the Pharmacopœia Committee of the General Medical Council.

S. R. Atkins, Chairman.

The President moved, and it was seconded and carried, that the report of the Committee be received and adopted.

General Purposes Committee.

The report of this Committee was as follows:—

Tuesday, November 3, 1903.

Mr. S. R. Atkins, President, in the Chair.

Mr. C. B. Allen, Vice-President.

Present:— Messrs. Carteighe, Cooper, Corder, Cross, Currie, Gifford, Glyn-Jones, Harrington, Harrison, Hills, Newsholme, Robinson, Southall, Storrar, Wootton and Young.

The minutes of the previous meeting were read and confirmed.

The Committee considered the following report of the Board of Examiners for England and Wales remitted from the Council.

REMITTED FROM THE COUNCIL TO THE GENERAL PURPOSES COMMITTEE.

REPORT OF THE BOARD OF EXAMINERS FOR ENGLAND AND WALES

The Secretary submitted a resolution passed by the Council in August requesting the two Boards of Examiners to conjointly consider the modifications and alterations suggested in the July report of the Board for England and Wales.

After discussion the Board reaffirmed the conclusions and recommendations reported to the Council in July, and appointed Messrs. Jackson, White, and Wilson to draft a new syllabus for the Major Examination, with a view to the joint consideration of the same by the two Boards of Examiners.

The Board deprecates the use of the word "division" in connection with the proposed modification of the syllabus, and ordered its minutes to be amended accordingly.

The President was requested to convey the foregoing extracts from the minutes to the Board in Edinburgh in order that the two Boards might be enabled to act in concert and with uniformity.

The Board also resolved:—That this Board is of opinion that the present system of accepting from candidates for the Minor Examination evidence "that they have for three years been practically engaged in the translation and dispensing of prescriptions" is unsatisfactory, and that the attention of the Council be called to the report of the Board of Examiners for England and Wales on the subject submitted to the Council in August 1902.

The Committee resolved to communicate the report of the Board to the Council at its meeting on Wednesday, November 4, and recommends that the Board be informed that, pending fresh legislation, it is not practicable to take action in the direction suggested in the last paragraph of its report.

Report of Sub-Committee.

The Sub-Committee met on two occasions and considered various names which had been suggested in connection with the appointment of the Board of Examiners for England and Wales.

The present members of the Board who are ineligible for reappointment are Messrs. Peck and Wilson.

The Sub-Committee recommends the appointment of the following gentlemen to be members of the Board of Examiners for England and Wales for the ensuing year:—

Gulliver, Walter Fredk., London
Harvey Gibson, R. J., Liverpool
Holmes, Walter Murton, London
Jackson, Herbert, London
Marsden, Prosper H., Liverpool
Matthews, Harold E., Bristol
Potter, Michael C., Newcastle
Smithells, Arthur, Leeds
Stamp, Francis U., London
Tickle, Thomas, Exeter
White, Edmund, London
Wright, Robert, Buxton

The Committee endorsed the report of the Sub-Committee, and recommends the appointment of the gentlemen suggested.

The appointment of Divisional Secretaries for 1904 was considered and a list of names approved for submission to the Council at its meeting on Wednesday, November 4, 1903.

The President moved that the report and recommendations of the General Purposes Committee be received and adopted.

This was seconded and carried unanimously.

Appointment of Divisional Secretaries.

Mr. Chater reported that in accordance with the scheme of local organisation adopted by the Council in 1900, and pursuant to the practice continued from the former system of appointing local officers, communications had been sent to every member of the Society in England and Wales inviting him to suggest the name of a person suitable for appointment in the Parliamentary Division concerned. It was further pointed out in the official circular that it would be calculated to invest suggestions with more value if they were made as the result of consultation with other members, either through the medium of Local Associations or otherwise. The number of suggestion cards issued was 5,024 and the replies received numbered 732.

The following gentlemen have retired from office:—

Appleby, E. J., Bath
Arnott, D., Pontypridd
Bates, Hiram, Oldham
Batty, T. E., York
Bingley, John, Northampton
Brewis, T., Portsmouth
Chandler, J., Bristol
Clarke, J., Croydon
Cook, Robert, Grimsby
Cooke, C. W., Liverpool
Coulson, T., London (City)
Dobinson, T., Bishop Auckland
Ferriday, A. J., Liverpool
Gledhill, R., Dewsbury
Gray, Wm., Walthamstow
Green, J. H. B., Swindon
Hall, R., Hackney
Hornby, F. W., Boscombe
Horsley, J., Hartlepool
Jenkins, H., Newington
Keen, B., Bristol
Kemp, H. W., Horncastle
Kitchin, A., Whitehaven
Mitchell, J. C., Grays
Paris, Wm., Epsom
Parker, R. H., Paddington
Payne, J. H., Thrapston
Pembleton, F. P., Derby
Pickard, Wm., Fulham
Robinson, James, Darlington
Robson, J. C., Middlesbrough
Roper, R. F., Plymouth
Smith, F., Handsworth
Turner, G. T., Bristol
Walden, H. E., Slough
Walker, John, Cleckheaton
Watts, H., Sheffield
Weary, C. T., Devonport

The causes of these retirements are various. Many are due to ill-heath, others are attributed to lack of sufficient time or opportunity to properly discharge the duties of the office, and others again are the result of harmonious arrangement whereby a change is made periodically. In nearly every case the retiring officer has interested himself in assisting to find a suitable successor. The following divisions are now without officers:—

Barrow-in-Furness
Birmingham, South
Bucks, S., or Wycombe
Bury
Cambridgeshire, W., or Chesterton
Carmarthen, Eastern
Carnarvon, Southern
Carnarvon, Northern
Chester, Edisbury
Chester, Hyde
Cornwall, Truro
Cornwall, S.E., or Bodmin
Croydon,
Cumberland, N., or Eskdale
Denbigh, Eastern
Deptford
Derbyshire, Southern
Dorset, Western
Durham, Mid
Essex, Mid, or Chelmsford
Finsbury, East
Fulham
Hackney, Central
Hants, East, or Petersfield
Hereford
Hunts, S., or Huntingdon
Kidderminster,
Lancs (South-East), Ratcliffe-cum-Farnworth
Lancs (South-East), Gorton
Lancs (South-West), Ormskirk
Leicester, W., or Bosworth
Lincoln, S., Lindsey or Horncastle
Liverpool, Walton
London (City)
Marylebone, West
Monmouth, Northern
Monmouth, Western
Newington, West
Norfolk, North-Western
Northampton, North
Northampton, Mid
Northampton, Southern
Northampton
Rutland
Shoreditch, Hoxton
Shropshire, Mid, or Wellington
Somerset, Northern
Somerset, Eastern
Somerset, Bridgwater
Staffs, Kingswinsford
Staffs, Handsworth
Surrey, Mid, or Epsom
Surrey, N. E., or Wimbledon
Sussex, E., or Rye
Tower Hamlets, Stepney
Warwick, N., or Tamworth
Warwick, S. E., or Rugby
West Bromwich
Westminster
Whitehaven
Wilts, M., or Cricklade
York—North Riding, Thirsk and Malton
York—West Riding, Barkston Ash
York—West Riding, Pudsey

It should, however, be stated that in the large majority of these vacant divisions there are gentlemen who would be available in case of Parliamentary need, and a list has been prepared in the office which would enable the Secretary to place himself in communication with at least one volunteer in nearly every Parliamentary Division in the country. Speaking generally, the experience of the past year tends to confirm the opinion that the Council has in its Divisional Secretaries an effective Parliamentary organisation, the potential value of which has not yet been fully tested.

The gentlemen whose names are printed at page 672, *et seq.*, were then appointed Divisional Secretaries for the ensuing year.

Thanks to Divisional Secretaries.

The President moved that the thanks of the Council be tendered to the Divisional Secretaries in England and Wales and Scotland for their services during the past year. He said their thanks were especially due to the Divisional Secretaries for the work they had done in keeping the Register more accurate and up-to-date. He hoped that they would not forget the importance of the Benevolent Fund, and would do all in their power to keep up the interest in the Fund and in collecting subscriptions.

Mr. Newsholme seconded the vote of thanks. He thought the Divisional Secretaries might anticipate a good deal more work in the near future in connection with the General Election, which he believed must come before long, and it behoved them to be prepared to interview candidates. It was a little disheartening to learn that whereas 5,000 postcards had been sent out, only about 700 had been returned.

Pharmaceutical Teaching.

Dr. Symes, with the permission of his colleagues, directed attention to the last paragraph in the Library, Museum, School, and House Committee's report. He said some time ago he advocated that there should be more efficient arrangements for the teaching of pharmacy in the pharmaceutical laboratory, and he now only wished to ask if the Committee would consider the matter with a view to arranging for teaching students to make galenical preparations. He was aware that some demurred on account of the cost, but if a pharmaceutical laboratory could be fitted up with proper apparatus and appliances for teaching pharmacy in a more practical manner than at present, he thought it would be a good thing.

Report of Examinations.

Scotland.

October, 1903.

	Candidates.	Passed.	Failed.
Major	1	1	0
Minor	123	83	40
	124	84	40

Appointment of Examiners.

The gentlemen recommended by the General Purposes Committee (see page 670) were then appointed examiners for England and Wales for the ensuing year.

EXAMINERS FOR SCOTLAND.

Mr. CHATER reported that a letter had been received from the Assistant Secretary, Mr. J. R. Hill, enclosing a resolution of the Executive nominating the following gentlemen as Examiners for Scotland, and, on the motion of the PRESIDENT, the appointments were made :—

Bower, Frederick O. ; Glasgow
Coull, George ; Edinburgh
Davidson, Alexander ; Montrose
Dott, David B. ; Edinburgh
Gibson, John ; Edinburgh
Gilmour, David ; Dunfermline
Meldrum, M. ; Irvine
Sutherland, John Wm. ; Glasgow

VOTE OF THANKS TO EXAMINERS.

The PRESIDENT then moved, and it was carried unanimously, that a vote of thanks be accorded to the gentlemen who had acted as examiners during the past year.

Meetings of the Boards of Examiners for 1904.

The PRESIDENT moved, and it was agreed, that the Boards of Examiners in London and Edinburgh meet to conduct the examinations in January, April, July, and October, 1904, or as near those months as conveniently may be.

Correspondence.

THE HANBURY MEMORIAL.

Mr. CHATER then read the following letter from Sir Thomas Hanbury :—

> La Mortola, Ventimiglia, Italy.
> October 31, 1903.
>
> To the President of the Pharmaceutical Society, London.
>
> Sir,—In pursuance of the promise I recently made of providing that £50 be handed on each occasion to the recipient of the Hanbury Gold Medal, which your Society awarded biennially in memory of my late brother, Daniel Hanbury, F.R.S. I now beg to say that Messrs. Cull and Daniell, of 50, Threadneedle Street, E.C., will follow your written instructions as to handing over to the bankers of your Society a Five per Cent. Bond of the Government of Mexico for £500 sterling, yielding £25 annually. Should the Government of Mexico on any occasion during my lifetime make default of the interest on this bond, I undertake to make good the loss myself.
>
> Yours faithfully,
> THOMAS HANBURY.

Mr. CARTEIGHE moved that the best thanks of the Council be given to Sir Thomas Hanbury for his generosity, and that the solicitors to the Society be instructed to take the necessary steps to take over the £500 bond. He need hardly say that he echoed the sentiments that the President expressed at the inaugural meeting in the Lecture Theatre when Sir Thomas Hanbury was present, and it afforded him great pleasure, as the secretary to the original Hanbury Memorial Fund, and one who had been one of the judges to give the award every year since it was founded, to express his admiration of the brotherly feeling which had prompted the gift of Sir Thomas Hanbury.

Mr. ROBINSON seconded the motion, which was carried unanimously.

THANKS FROM LADY STUDENTS.

A letter was read from the ladies attending the School of Pharmacy thanking the Council for the manner in which their comfort and convenience had been studied.

Mr. HILLS said he was rather sorry that the letter had been read, because he knew that there was a little feeling amongst the male students that they have been overlooked, inasmuch as they had for years been wanting to have some kind of a room placed at their disposal for general use, but they were always told that there was no room available. Now, it was intimated to him there was a feeling that no sooner was a little pressure put on by the other sex than their wishes were granted. He hoped that when Dr. Symes' suggestion in regard to the pharmaceutical laboratory was considered by the Committee the question of further accommodation for the male students would not be forgotten.

THE MEDICINE STAMP DIFFICULTY.

A letter was read from the Bradford and District Chemists' Association thanking the Council for its efforts to conserve the rights and privileges of chemists and druggists in connection with Medicine Stamp Duty.

THE PHARMACY BILL.

Letters had been received from the Privy Council, the Royal Veterinary College, the Society of Apothecaries, and the British Medical Association acknowledging receipt of communications from the Council concerning the additional clause to the Pharmacy Bill. A communication had also been received from the Medico-Political Committee of the British Medical Association directing attention to its memorandum to the Privy Council published in the *British Medical Journal* last week (see page 681).

Mr. WOOTTON : Do these societies express satisfaction with the clause?

Mr. CHATER : No ; they simply acknowledge receipt of the communication from this Council.

Mr. CARTEIGHE : Will that memorandum be published in the Journal?

Mr. CHATER : Yes ; it will be published this week.

Mr. CARTEIGHE said the memorandum dealt with the report of the Poisons Committee appointed by the Privy Council, and it was a very valuable one. It was very gratifying to see how carefully the Committee of the British Medical Association had gone into the matter, and the way the report had been drawn up.

Mr. ROBINSON said the memorandum was a most important one. He knew that medical men did not at all agree with the report of the Poisons Committee, and gave the strongest reasons against it. He thought the memorandum would have considerable weight with the Government, and that it would also have an effect in the country.

The Journal Committee.

The report of this Committee, which was considered privately, and subsequently adopted, contained the following paragraph, which Mr. Carteighe, as Chairman of the Committee, said he wished to mention in open Council :—

> The Committee desires to express its appreciation of the work of the Journal staff, and to particularly recognise the manner in which the issue containing the report of the Inaugural Sessional Meeting on October 1 was produced under extreme pressure, and delivered to members on the morning of October 2.

Mr. CARTEIGHE said that, of course, working as the Committee did with the Journal staff, it was much easier to find fault than praise ; but on this particular occasion, the members of the Council would remember that the inaugural address was given on Thursday afternoon, and as it was followed by the ceremony of unveiling the Martindale Memorial, the proceedings were rather lengthy, and did not terminate till about 5.15 p.m., yet they had a full report on their tables next morning. As it was a new staff, he thought it was only fair that they should have credit for what was done on that occasion.

This ended the public business, and the following paragraph was subsequently communicated :—

THE COMPENDIUM OF MEDICINES.

The Council considered in committee that portion of the report of the Journal Committee dealing with the production of the Compendium. On resuming, the Council resolved that a small committee be appointed "to complete the Compendium of Medicines, a rough specimen of which has been submitted to the Council."

DIVISIONAL SECRETARIES:

ENGLAND AND WALES.

Anglesey	Jones, Thomas John	Holyhead
Ashton-under-Lyne	Phillips, John James	Ryecroft
Aston Manor	Richards, Frederick J.	Lozells
Bath	Hallett, William John	Bath
BATTERSEA AND CLAPHAM.		
Battersea	Collen, W. Cresswell	St. John's Road
Clapham	Robinson, W. Prior	Clapham Common
BEDFORDSHIRE.		
N. or Biggleswade	Smith, Charles Bond	Potton
S. or Luton	Webb, John Henry	Luton
Bedford	Taylor, James Bennett	Bedford
BERKSHIRE.		
N. or Abingdon	Robins, Henry	Wantage
S. or Newbury	Hickman, F. Stanley	Newbury
E. or Wokingham	Sandwith, William Henry	Bracknell
BETHNAL GREEN.		
North-East	Barnard, Alfred P.	Columbia Road
South-West	Burton, Percy H.	Cambridge Road
Birkenhead	Hickin, William E.	Birkenhead
BIRMINGHAM.		
Edgbaston	Perry, George Edward	Edgbaston
West	Prosser, Frank H.	Spring Hill
Central	Southall, Wilfred Francis	Birmingham
North	Poole, Jeffrey	Birmingham
East	Austin, Josiah	Nechells
Bordesley	Thompson, Charles	Sparkbrook
Blackburn	Gifford, Richard Lord	Blackburn
Bolton	Knott, Percy	Bolton
Boston	Kent, Benjamin J.	Boston
BRADFORD.		
West	Mitchell, John Albert	Bradford
Central	Waddington, Alfred Henry	Bradford
East	Marshall, Richard Harrison	Bradford
Brecknock	Charles, Richard Emment	Brecon
Brighton	Gwatkin, James Ross	Brighton
BRISTOL.		
West	Taylor, Archibald L.	Clifton
North	Nethercott, Walter J.	Bristol
East	Trebilco, Arthur J.	St. George's
South	Young, Edward Francis	Bristol
BUCKS.		
N. or Buckingham	Taylor, Francis W.	Newport-Pagnell
Mid or Aylesbury	Palmer, Edwin Thomas	Aylesbury
Burnley	Heaton, John Appleyard	Burnley
Bury St. Edmunds	Clark, Owen Aly	Bury St. Edmunds
CAMBERWELL.		
North	Pellew, Albert	Old Kent Road
Peckham	Howell, William	High Street
Dulwich	Colwill, Richard	Dulwich
CAMBRIDGESHIRE.		
N. or Wisbech	Girling, William R.	Wisbech
E. or Newmarket	Lincolne, William	Ely
Cambridge	Campkin, Algernon Sidney	Cambridge
Canterbury	Bing, Charles	Canterbury
Cardiff	Mumford, Richard	Cardiff
Cardigan	Wynne, Edward Price	Aberystwith
Carlisle	Hallaway, John	Carlisle
CARMARTHEN.		
Western	Lloyd, Walter	Carmarthen
Carmarthen Boroughs	Lloyd, Walter	Carmarthen
Carnarvon Boroughs	Jones, Owen	Bangor
Chatham	Stooke, Arthur	New Brompton
Chelsea	Wigginton, Alfred	Sloane Street
Cheltenham	Barron, William	Cheltenham
CHESTER.		
Wirral	Robinson, Richard Fredk. W.	Seacombe
Macclesfield	Pass, William Hall	Macclesfield
Crewe	Cumming, John	Crewe
Northwich	Humphreys, Griffith	Northwich
Altrincham	Burgess, Arthur H.	Altrincham
Knutsford	Silvester, Henry T.	Knutsford
Chester	Shepheard, William F. J.	Chester
Christchurch	Rose, Francis	Bournemouth
Colchester	Weddell, Arthur	Colchester
CORNWALL.		
W. or St. Ives	Symons, Netherton H.	Penzance
N.W. or Camborne	Tonkin, Charles Harvey	Camborne
St. Austell	Binks, Burcham	St. Austell
N.E. or Launceston	Downing, Frederick	Launceston
Coventry	Newton, Alfred Henry	Coventry
CUMBERLAND.		
Mid or Penrith	Townley, Thomas William	Keswick
Cockermouth	Mason, Joseph Robert	Workington
W. or Egremont	Ireland, Edward Jackson	Egremont
Darlington	Williamson, Leonard W.	Darlington
DENBIGH.		
Western	Jones, Owen	Llanrwst
Denbigh Boroughs	Caldecott, Clement Guest	Wrexham
DERBYSHIRE.		
High Peak	Wright, Robert	Buxton
N.-Eastern	Austen, John	Sheffield
Chesterfield	Barfoot, John Richard D.	Chesterfield
Western	Wardle, Thomas	Ashbourne
Mid	Burkinshaw, William Thos.	Belper
Ilkeston	Greaves, William Samuel	Ironville
Derby	Dawson, Henry G. W.	Derby

DEVON.		
E. or Honiton	Toone, Arthur Henry	Exmouth
N. E. or Tiverton	Havill, Paul William	Tiverton
N. or South Molton	Handford, Joseph John	Torrington
N. W. or Barnstaple	Scott, James Hugill	Ilfracombe
W. or Tavistock	Doble, Richard Dennis	Tavistock
S. or Totnes	Morse, Charles Henry S.	Totnes
Torquay	Horner, Robert	Chelston
Mid or Ashburton	Cutcliffe, George John	Dawlish
Devonport	Lamble, John Alfred	Devonport
Dewsbury	Gutteridge, Geo. Needham	Dewsbury
DORSET,		
Northern	Groves, Richard Henry	Blandford
Eastern	Randall, William Joseph	Wareham
Southern	Evans, Alfred Herbert	Dorchester
Dover	Ewell, Richard Michael	Dover
Dudley	White, George	Dudley
DURHAM.		
Jarrow	Rose, James Dudfield, jun.	Jarrow-on-Tyne
Houghton-le-Spring	Bowman, Samuel	Silksworth
Chester-le-Street	Cubey, Robert	Blaydon-on-Tyne
N.-Western	Robinson, Joseph	Stanley
S.-Eastern	Scott, Thomas Lamb	Trimdon Grange
Bishop Auckland	Harburn, Alfred	Bishop Auckland
Barnard Castle	Illsley, Thomas Brown	Barnard Castle
Durham	Rutter, Wilfred	Durham
ESSEX.		
S. W. or Walthamstow	Mathews, John H.	Leytonstone
S. or Romford	Lasham, John William	Romford
W. or Epping	Rowland, Thomas William	Epping
N. or Saffron Walden	Gilling, John	Saffron Walden
N.E. or Harwich	Bevan, William	Harwich
E. or Maldon	Row George Commins	Braintree
S.-Eastern	Dawson, George Robert	Southend
EXETER	Reid, David	Exeter
FINSBURY.		
Holborn	Turner, J. Scriven	Bury Street
Central	Lawson. Albert E.	Exmouth Street
Flintshire	Davies, Thomas Morris	Rhyl
Flint Boroughs	Jones, Owen Williams	Flint
Gateshead	Martin, George Hymers	Gateshead
GLAMORGAN.		
Eastern	Davies, Oliver	Pontypridd
Rhondda	Lloyd, Henry M.	Merthyr
W. or Gower	Grose, Nicholas Male	Swansea
Mid	Loveluck. Griffith David	Aberavon
Southern	Hopkins, William R.	Barry
GLOUCESTERSHIRE.		
Mid or Stroud	Coley, Samuel James	Stroud
N. or Tewkesbury	Stroud, Lewis Lecomte	Tewkesbury
E. or Cirencester	Griffiths, Waldron	Cirencester
Forest of Dean	Turner, Henry Prosser	Lydney
S. or Thornbury	Palmer, James S.	Thornbury
Gloucester	Minchin, William	Gloucester
Grantham	Whysall, William	Grantham
Gravesend	Clarke, Richard Feaver	Gravesend
Greenwich	Parsons, William	Blackheath
Gt. Grimsby	Colley, Herbert William	Gt. Grimsby
Gt. Yarmouth	Poll, Wiliam Sheppard	Gt. Yarmouth
HACKNEY.		
North	Dodd, H. Vincent	Amhurst Park
South	Nicholls, Theophilus	Wick Road
Halifax	Black, William Reynolds	Halifax
Hammersmith	Sturton, Samuel A.	Shepherd's Bush
Hampstead	Stamp, Edward B.	High Street
Hanley	Cornwell, Thomas Chinsura	Hanley
HANTS.		
N. or Basingstoke	Barlow, Thomas O.	Basingstoke
W. or Andover	Bienvenu, John	Andover
S. or Fareham	Neville, Egbert	Fareham
New Forest	Bilson, Frederick Eastall	Bournemouth
Hartlepool	Clarkson, Thomas	Hartlepool
Hastings	Tharle, Charles Albert	Hastings
HEREFORDSHIRE.		
N. or Leominster	Sandiland, R. Burgess	Leominster
S. or Ross	Benjamin, Joseph	Ross
HERTS.		
N. or Hitchin	Ransom, Francis	Hitchin
E. or Hertford	Durrant, George Reynolds	Hertford
Mid. or St. Albans	Ekins. Arthur Edward	St. Albans
W. or Watford	Chater, Edward Mitchell	Watford
Huddsrsfield	Walshaw, Richard C.	Huddersfield
HUNTS.		
North or Ramsey	Farr, Joseph	Yaxley
Hythe	Knight, John	Folkestone
Ipswich	Anness, Samuel Richard	Ipswich
ISLINGTON.		
North	Skinner, Herbert	Cressida Road
West	Holding, John	Barnsbury
East	De Peare, John T.	Highbury Park
South	Wallis, John T. W.	Essex Road
KENSINGTON.		
North	Worsley, Albert G.	Ladbroke Grove
South	Hill, Ernest William	Earl's Court Road
KENT.		
W. or Sevenoaks	Prebble, John George	Chislehurst
N.W. or Dartford	Hanson, Arthur William	Sidcup

S.W. or Tonbridge	Hobbs, Alfred Ernest	Tunbridge Wells
Mid or Medway	Stedman, Walter	West Malling
N.E. or Faversham	Sturdy, John Robert	Sheerness
S. or Ashford	Ingall, Joseph	Ashford
E. or St. Augustine's	Wood, Henry	Walmer
Isle of Thanet	Baily, Edward	Ramsgate
KINGSTON-UPON-HULL.		
East	Hoyles, George	Hull
Central	Bell, Charles Bains	Hull
West	Richardson, Arthur	Hull
LAMBETH.		
North	Douglas, J. Wellesley	Lambeth Walk
Kennington	Glew, Frederick Harrison	Clapham Road
Brixton	Wilson, William	Brixton Road
Norwood	Powell, Thos. H.	Denmark Hill
LANCS., NORTH.		
North Lonsdale	Willan, Robert	Ulverston
Lancaster	Vince, James	Lancaster
Blackpool	Turver, Charles Henry	Blackpool
Chorley	Hill, William	Chorley
LANCS., NORTH-EAST.		
Darwen	Shorrock, Ralph	Darwen
Clitheroe	Lawton, Richard	Nelson
Accrington	Stanley, Thomas	Accrington
Rossendale	Lord, John Edward	Rawtenstall
LANCS., SOUTH-EAST.		
Westhoughton	Dyson, J. G. Peacock	Horwich
Heywood	Matson, Joseph	Ramsbottom
Middleton	Lovatt, Harry Percy	Todmorden
Eccles	Scholes, William Isaac	Eccles
Stretford	Kemp, Harry	Ch'rlt'n-cum-H'rdy
Prestwich	Kidd, J. Cassie	Manchester
LANCS., SOUTH-WEST.		
Southport	Righton, James	Southport
Bootle	Wyatt, Harold, jun.	Bootle
Widnes	Bennett, Charles Joseph	Widnes
Newton	Peake, Arthur	Newton-l.-Willows
Ince	Ascroft, Benjamin	Ince
Leigh	Boardman, Frederick James	Leigh
LEEDS.		
North	Long, Frederick Coleman	Headingley
Central	Branson, Frederick W.	Leeds
East	Sargeant, Frederick P.	Leeds
West	Baxter, William Smith	Bramley
South	Yewdall, Edwin	Leeds
LEICESTER.		
E. or Melton	Wing, George Newton	Melton Mowbray
Mid. or Loughborough.	Martin, Arthur B.	Loughborough
S. or Harborough	Nash, Albert Hardstaff	Market Harboro'
Leicester	Goodess, Frederick Wm.	Leicester
Lewisham	Sayers, Wm. C.	High Street
LINCOLN.		
W. Lindsey or Gainsborough	Boon, Nathaniel	Kirton-in-Lindsey
N. Lindsey or Brigg	Lee, John Cuthbert	Barton-on-H'mber
E. Lindsey or Louth	Dennis, Fred. Woodrow	Louth
N. Kesteven or Sleaford	Spyvee, William	Sleaford
S. Kesteven or Stamford	Prior, James Siddall	Stamford
Holland or Spalding	Bell, Edward Wightman	Spalding
Lincoln	Birkbeck, John Thomas	Lincoln
LIVERPOOL.		
Kirkdale	Nelmes, George	Liverpool
Everton	Walker, Francis	Everton
West Derby	Thomas, Lewis Edwin	Liverpool
Scotland	Nelmes, George	Liverpool
Exchange	Gray, John Henderson	Liverpool
Abercromby	Buck, Anthony Smith	Liverpool
East Toxteth	Cleave, Reverdy	Liverpool
West Toxteth	Moxon, John Lawrence	Liverpool
Lynn (King's)	Palmer, William Joseph	King's Lynn
Maidstone	Corfe, Alfred Frederick	Maidstone
MANCHESTER.		
North-West	Westmacott, George L.	Manchester
North	Nidd, John Henry	Manchester
North-East	Blore, Moulton	Manchester
East	Williams, James Boden	Manchester
South	Wild, John	Manchester
South-West	Swinn, Charles	Hulme
MARYLEBONE.		
East	Thomas, Richard	Baker Street
Merioneth	Williams, Richard W.	Dolgelly
Merthyr Tydvil	Llewellyn, Richard	Merthyr Tydvil
Middlesbrough	Brackenbury, Walter Robt	Middlesbrough-on-Tees
MIDDLESEX.		
Enfield	Goldby, Frank	Enfield Town
Tottenham	Tanner, Albert Edward	Tottenham
Hornsey	Frost, John H.	Hornsey
Harrow	Malcolm, James	Willesden Green
Ealing	Cleave, Thomas William	Ealing
Brentford	Wood, Alexander	New Brentford
Uxbridge	Rayner, John	Uxbridge
MONMOUTH.		
South	Clarke, Charles Henry	Chepstow
Monmouth Boroughs	Garrett, Thomas Philip	Newport, Mon.
Montgomeryshire	Ellis, Hugh Edward	Llanfair
Montgomery Boroughs	Owen, Edward	Newtown
Morpeth	Schofield, Frederick Elston	Morpeth
Newcastle-under-Lyme	Poole, Weston	Newcastle, Staffs.
Newcastle-on-Tyne	Clague, Thomas Maltby	Newcastle-on-Tyne
NEWINGTON.		
Walworth	Upfill, William Thomas	Walworth
NORFOLK.		
South-Western	Christopherson, Fred.	Swaffham
North	Dester, Joseph	Aylsham
East	Denney, Edwin James	North Walsham
Mid	Peck, Edward	East Dereham
Southern	Gostling, Thomas Preston	Diss
NORTHAMPTON—		
Eastern	Thorp, Edwin	Kettering
NORTHUMBERLAND—		
Wansbeck	McBryde, Alexander H.	Whitley Bay
Tyneside	Brand, Roger	Wallsend-on-Tyne
Hexham	Gibson, John	Hexham
Berwick-on-Tweed	Newbigin, James Lesslie	Alnwick
Norwich	Robinson, Percy	Norwich
NOTTINGHAMSHIRE.		
Bassetlaw	Pater, Edward Rhodes	Retford
Newark	Cherrington, George W.	Newark-on-Trent
Rushcliffe	Chambers, John William P.	West Bridgford
Mansfield	Patterson, Douglas John	Mansfield
NOTTINGHAM.		
West	Gill, William	Hyson Green
East	Rayson, John Thomas	Nottingham
South	Sergeant, Furlow Ross	Nottingham
Oldham	Gartside, Charles	Oldham
OXFORDSHIRE.		
N. or Banbury	Bartlett, Hubert	Banbury
Mid. or Woodstock	Garnett, Henry	Witney
S. or Henley	Cartwright, Arthur	Henley-on-Tham's
Oxford	Burbank, Thomas J. A. R.	Oxford
PADDINGTON.		
North	Middleton, Burton	Harrow Road
South	Cracknell, Herbert	Craven Road
Pembroke	Bowling, William Henry	Pembroke Dock
Pembroke Boroughs	Jenkins, John Lewis	Haverfordwest
Penryn and Falmouth	Blamey, John	Falmouth
Peterborough	Sturton, John Gilbert	Peterborough
Plymouth	Goodwin, Francis Arthur	Plymouth
Pontefract	Bratley, William	Pontefract
Portsmouth	Cruse, Thomas, E. C.	Southsea
Preston	Williamson, Fredk. Arthur	Preston
Radnor	Johnson, William Wilson	Llandrindod Wells
Reading	Bradley, Charles	Reading
Rochdale	Highley, William	Rochdale
Rochester	Clarke, William Edward	Strood
St. George's, Hanover Sq.	Gulliver, W. Fred	Lower Belgrave St.
St. Helens	Wallbridge, John George	St. Helens
ST. PANCRAS.		
North	Mathews, Chas. W.	Fortess Road
East	Ford, William Crossley	Gt. College St.
West	Michie, Charles Coutts	Kentish Town Rd.
South	Jacks, David R.	Gower St.
SALFORD.		
North	Walton, Joseph Woodruff	Bury New Road
West	Lewis, David	Pendleton
South	Bullock, Alfred Hugh	Salford
Salisbury	Atkins, William Ralph	Salisbury
Scarborough	Whitfield, George	Scarborough
SHEFFIELD.		
Attercliffe	Marples, Thomas	Sheffield
Brightside	Antcliffe, Herbert	Sheffield
Central	Squire, George	Sheffield
Hallam	Pater, Joseph B.	Broomhill
Ecclesall	Carr, Percy	Sheffield
SHOREDITCH.		
Haggerston	Barnard, Geo. B.	Hackney Road
Shrewsbury	Cross, William Gowen	Shrewsbury
SHROPSHIRE.		
West or Oswestry	Jones, Thomas	Oswestry
North or Newport	Picken, Charles R.	Newport
South or Ludlow	Brown, William James	Ludlow
SOMERSET.		
Wells	Cooper, John	Weston-s'per-Mare
Frome	Green, Edmund C. F.	Frome
Southern	Wright, Alfred	Yeovil
Western or Wellington	Hoyles, Henry R.	Wellington
Southampton	Wilson, Harry	Southampton
South Shields	Noble, John	South Shields
SOUTHWARK.		
West	Umney, John C.	Southwark St.
Rotherhithe	Wiggins, Henry	Southwark Park
Bermondsey	Truman, Frank Wilton	Old Kent Road
STAFFORD.		
Leek	Hartley, William Henry	Leek
Burton	Wright, George	Burton-on-Trent
Western	Jacks, Frederick	Stone
N. Western	Oldham, William	Burslem
Lichfield	Averill, George	Rugeley
Stafford	Averill, John	Stafford
Stalybridge	Simpson, Allwood	Stalybridge
Stockport	Orton, William Billing	Stockport
Stockton	Finlayson, William	Stockton
Stoke-on-Trent	Emery, Robert Gordon	Stoke-on-Trent
Strand	Warren, William	Covent Garden
SUFFOLK.		
N. or Lowestoft	Hume, John William David	Lowestoft
N.E. or Eye	Page, Henry S.	Saxmundham
N.W. or Stowmarket	Gostling, George James	Stowmarket
S. or Sudbury	Collishaw, John Edward	Sudbury
S.E. or Woodbridge	Betts, Alick Stephen	Woodbridge
Sunderland	Ranken, Charles	Sunderland
SURREY.		
N.W. or Chertsey	Read, Thomas	Camberley
S.W. or Guildford	Mather, John Henry	Godalming
S.E. or Reigate	Woodward, Moses Mellor	Reigate
Kingston	Parrott, John	Richmond

SUSSEX.		
N.W. or Horsham	Smith, Edward	Horsham
S.W. or Chichester	Strickland, A. Whitehouse	Bognor
N. or E. Grinstead	Hayes, Richard T. O.	Haywards Heath
Mid. or Lewes	Cortis, Arthur Brownhill	Worthing
S. or Eastbourne	Senior, Joseph	Eastbourne
Swansea	Grose, Nicholas M.	Swansea
Swansea Boroughs	Isaac, J. Griffith	Neath
Taunton	Wrenn, William Albert	Taunton
TOWER HAMLETS.		
Whitechapel	Lubbock, John William	Artillery Lane
St. George's	Smith, John H.	Commercial Road
Limehouse	Hatfield, George William	Commercial Road
Mile End	Gradidge, Jas. H.	Mile End Road
Bow	Garman, C. E.	Roman Road
Poplar	Kirk, Snowden	Chrisp Street
Tynemouth	Buckley, Walter	North Shields
Wakefield	Chaplin, John Henry	Wakefield
Walsall	Elliott, Edward Matthews	Walsall
Wandsworth (eastern portion)	Shacklock, J. Harvey	Streatham
Warrington	Ashton, H. Maitland	Warrington
WARWICK.		
N.E. or Nuneaton	Iliffe, George	Nuneaton
S.W. or Stratford-on-Avon	Hawkes, Richard	Stratford-on-Avon
Warwick and Leamington	Barrett, Josephus Teague	Leamington
Wednesbury	Jackson, David	Wednesbury
WEST HAM.		
North	Gwinn, F. Walter	Leytonstone
South	Barnes, William Robert	Upton Manor
WESTMORELAND.		
N. or Appleby	Crozier, Geo. Dixon	Kirkby Stephen
S. or Kendal	Bateson, Alfred Campbell	Kendal
Wigan	Phillips, Jonathan	Wigan
Wight, Isle of	Pollard, Henry Hindes	Ryde
WILTS.		
N.W. or Chippenham	Coles, John Coles	Chippenham
W. or Westbury	Aplin, John Henry	Trowbridge
E. or Devizes	Baker, Frank	Devizes
S. or Wilton	Orchard, Edwin John	Salisbury
Winchester	Chaston, Alfred Edward	Winchester
Windsor	Westlake, Bernard	Windsor
WOLVERHAMPTON.		
West	Gibson, Frederic John	Wolverhampton
East	Gibson, Frederic John	Wolverhampton
South	Gibson, Frederic John	Wolverhampton
Woolwich	Wing, Arthur J.	Powis Street
WORCESTER.		
West or Bewdley	Mander, Alfred	Malvern
S. or Evesham	Elliott, Henry Alfred	Evesham
Mid. or Droitwich	Selleck, William Robert	Stourbridge
Northern	Gerrard, Alfred W.	Oldbury
Eastern	Lowther, Thomas William	Moseley
Worcester	Turner, Charles Wall	Worcester
YORK.—North Riding.		
Richmond	Clarkson, Newton	Richmond
Cleveland	Holt, John	Yarm
Whitby	Ruff, William	Whitby
East Riding.		
Holderness	Morrow, Charles	Hornsea
Buckrose	Purvis, John Bowlt	Bridlington Quay
Howdenshire	Wallace, Hugh G.	Howden
West Riding.		
Skipton	Shepherd, John William	Settle
Keighley	Dean, Arthur S.	Ilkley
Shipley	Dunn, Henry	Shipley
Sowerby	Wright, George Burkitt	Hebden Bridge
Elland	Smithies, William Edward	Elland
Morley	Rhodes, Joseph	Mirfield
Normanton	Briggs, Alfred Radley	Horbury
Colne Valley	Walshaw, Richard C.	Huddersfield
Holmfirth	Fieldsend, Arthur	Penistone
Barnsley	Rigby, Walter	Barnsley
Hallamshire	Norwood, John Percy	Wath-on-Dearne
Rotherham	Bingham, Frank	Masboro'
Doncaster	Stiles, Matthew Henry	Doncaster
Ripon	Handford, Thomas Edward	Harrogate
Otley	Worfolk, George William	Ilkley
Osgoldcross	Timm, Edmund	Goole
Spen Valley	Barker, Arthur Brook	Cleckheaton
York	Dewhurst, William	York

SCOTLAND.

THE COUNTIES OF ABERDEEN AND BANFF—	
Aberdeen, North	A. Craig.
Aberdeen, South	W. Reid.
Kintore	A. G. Keith.
Huntly	G. Chalmers.
Banff	W. Alexander.
Keith	J. Pirie.
Peterhead	J. F. Tocher.
THE COUNTY OF ARGYLE and also SKYE AND LEWIS—	
Oban	S. Lawrence.
THE COUNTY OF AYR—	
Kilmarnock, for North	J. Borland.
Ayr, for South	A. McGregor.
THE COUNTY OF BERWICK—	
Duns	C. Hounam.
THE COUNTY OF BUTE—	
Rothesay	P. Leith.
THE COUNTY OF CAITHNESS—	
Mr. Stewart (Kirkwall) could, when required, communicate with the M.P. for Wick, who is also M.P. for Kirkwall. The county M.P. could be approached direct from Edinburgh, or through the nearest Divisional Secretary, Mr. Fowler (Tain). The M.P. for Tain is also M.P. for Wick.	
THE COUNTIES OF CLACKMANNAN AND KINROSS—	
Kinross	W. Dow.
THE COUNTY OF DUMBARTON—	
Helensburgh	J. McMurray.
THE COUNTY OF DUMFRIES (except Langholm, which goes with Hawick)—	
Dumfries	W. Allan.
THE COUNTY OF FORFAR—	
Dundee	Charles Kerr.
Lochee	J. W. Russell.
Broughty Ferry	W. Park.
Forfar	G. R. Fowler.
Arbroath	A. Naysmith.
Montrose	A. Davidson.
THE COUNTY OF MIDLOTHIAN—	
Edinburgh, West	A. K. Stewart.
Edinburgh, East	C. F. Henry.
Edinburgh Central	J. A. Forret.
Edinburgh, South	David McLaren.
Edinburgh, Portobello	James Nesbit.
Leith	J. Bowman.
Dalkeith	G. B. W. Archer.
THE COUNTIES OF ELGIN AND NAIRN—	
Elgin	A. Robertson.
THE COUNTY OF STIRLING—	
Falkirk, for East	Thomas Lyon.
Stirling, for West	J. Raffan.
THE COUNTY OF FIFE—	
St. Andrew's, for East	J. J. Kirk.
Dunfermline, for West	G. Gilmour.
Kirkcaldy, South	D. Storrar.
GLASGOW AND ITS SUBURBS—	
Bridgeton and Camlachie	G. A. Mitchell.
St. Rollox	J. R. Peacock.
Central	J. W. Sutherland.
College	James Abbott.
Tradeston, etc.	T. Dunlop.
Blackfriars and Hutchesontown	R. Brodie.
E. Renfrew	J. P. Gilmour.
Hillhead, etc.	Geo. Robertson.
Partick, N.	J. H. Riddell.
THE COUNTY OF RENFREW—	
Greenock, for West	A. McNaught.
Paisley, for East	A. Fraser.
THE COUNTY OF HADDINGTON—	
Haddington	W. P. Wilson.
THE COUNTY OF ROXBURGH—	
Hawick (which takes in Langholm)	W. S. Turnbull.
Kelso	W. M. Elliot.
THE COUNTY OF INVERNESS—	
Inverness	Donald Mitchell.
THE COUNTY OF KINCARDINE—	
Stonehaven	A. Lyon Wood.
THE COUNTY OF KIRKCUDBRIGHT—	
Castle Douglas	A. Veitch.
THE COUNTY OF LANARK—	
Motherwell	T. Scott.
THE COUNTY OF LINLITHGOW—	
Linlithgow	A. Spence.
THE COUNTY OF ORKNEY AND SHETLAND—	
Kirkwall	D. Stewart.
THE COUNTIES OF PEEBLES AND SELKIRK—	
Peebles	R. Lindsay.
Galashiels (for Selkirkshire)	W. Ross.
THE COUNTY OF PERTH—	
Perth	R. P. Blair.
Blairgowrie, for East	J. Petrie.
THE COUNTIES OF ROSS AND CROMARTY—	
Tain	D. Fowler.
THE COUNTY OF SUTHERLAND—	
The M.P. for Dornoch, in Sutherlandshire, who is also M.P. for Tain, could be communicated with by Mr. Fowler, who could also get into touch with the County Member.	
THE COUNTY OF WIGTOWN—	
Stranraer	R. Ker.

SHEFFIELD PHARMACEUTICAL AND CHEMICAL SOCIETY.

ANNUAL DINNER.

Thursday, October 29, 1903, at the Royal Victoria Hotel, Sheffield, Mr. G. T. W. Newsholme, F.C.S., in the chair. The President of the Pharmaceutical Society (Mr. S. R. Atkins, J.P., of Salisbury), wearing his chain of office, was on Mr. Newsholme's right, and the Lord Mayor of Sheffield (Alderman J. Wycliffe Wilson), also wearing his official chain, on his left. The dinner was unusually interesting, because of the attendance of Alderman Batty Langley, M.P. for the Attercliffe Division of Sheffield, who, it will be remembered, blocked the Pharmacy Bill in the House of Commons last year, and the provisions of that Bill naturally formed the chief subject of the speeches. Among others present were:—Mr. J. Rymer Young, J.P., F.C.S. (Warrington), Mr. R. J. Pye-Smith, F.R.C.S., and Principal Hicks, F.R.S. (University College, Sheffield).

Mr. Newsholme proposed the toast of "The King," which was enthusiastically honoured. He then proposed the toast of

The Houses of Parliament.

He said the House of Commons did an immense amount of work, but was suffering at present from a very serious illness—that of Fiscalitis. He did not think that augured well for them as pharmacists, because he was afraid that when the members met next February, their time would be so much taken up with this disease that they would have little to spend on domestic affairs, such as pharmacists were concerned with. The Pharmacy Acts Amendment Bill, introduced last Session, had a certain number of backers, representing both sides of the Houses. It had been said that the Pharmaceutical Society was more or less a trades union, which existed very largely for the protection of the craft in the matter of prices. He wished at once to disabuse the minds of gentlemen who held that opinion. The Council never entertained any thought whatever of the charges that individual chemists might make. In any legislation that they promoted their object was not to obtain a monopoly, but to carry out the public duties with which they were charged by the State. He went on to review the objects of the Bill. They had to attempt to legislate not only to bring limited companies into the same line, and put them on the same footing as individuals, but also to deal with the evils of their own household. A person who failed to pass the qualifying examination might convert himself into a limited company—often a so-called "one-man company"—and as a company, he could do all the things which as an individual he could not do, and was not amenable to the regulations for storing, dispensing, and selling poisons, or to the Pharmacy Act provisions for correctly dispensing. Whilst the Society did not seek to prohibit companies from keeping open shop for the sale of poisons, the Bill would, as far as possible, place them in the same position as individuals. When a poison was sold by an unqualified assistant, the employer, whether a person or a company, was not penalised. The Bill sought to make the employer liable for the penalty, and would thus prevent the selling or dispensing of poisons at branch shops by unqualified assistants, whether such shops were owned by individuals or companies. The Bill provided for proper registration of shops, and the managers thereof, and removed any doubt as to whether poisons sold by hawkers, and in public market-places, were within the present regulations. They had found that since the Bill was introduced into the House of Commons, practically the only portion of it that had been seriously discussed, criticised, and objected to, was Clause 7, which referred to companies who desired to carry on the business of a chemist and druggist. Well, it was only natural and to be expected that the most important item in a Parliamentary measure should be the item to invite the largest amount of criticism, and the greatest proportion of whatever hostility might be in the political atmosphere at the time. But the Pharmaceutical Society ought not to be afraid to meet that criticism or to cope with that hostility, and he, as a member of the Society's Council, did not shrink from the duty of upholding and justifying the policy of his colleagues. Nor did he see any reason for avoiding reference to the chief features of their Bill because they happened not to commend themselves to their distinguished guest, who represented the Attercliffe Division of Sheffield. Their case was a strong and straightforward one, and did not base itself upon hostility to stores or any other form of commercial development. It was purely a matter of public safety and common justice to individuals possessing a statutory qualification of a professional nature. On both grounds it should possess a passport to the favour of members of Parliament, irrespective of party or Imperial politics; but he was sorry to have to say that their expectations in this connection had suffered some disappointments. The Legislature in 1868 intended, and thought it essential on public grounds, to lay down the principle that persons who wished to be known as chemists and desired to handle poisons should be competent and trained persons. Surely no one would care to maintain to-day that that was an unreasonable or unwarrantable measure of public protection for Parliament to create. As a matter of fact, any person who could raise the Somerset House fee for incorporation into a company had been set free to supply the public with deadly and potent substances unrestrainedly, whilst the trained and examined individual was forced, and very properly so, to obey stringent Poison Regulations. He would respectfully ask M.P.'s whether this condition of things was one that should be allowed to continue, and he would further like to ask whether they thought the general public, if the facts were recognised, would wish it to continue. What the Council of the Pharmaceutical Society aimed at by

Clause 7 of the Bill

—the clause which he understood caused Mr. Langley to block the measure last Session—was to ensure that the effective control of the semi-professional business of a chemist and druggist, which involved so much from a public point of view, should be, not nominally, but actually, in the hands of the specially-qualified persons who were created by Statute to stand between the poison and the purchaser. If Mr. Langley could suggest other wording as effectual in giving the real control to which he had referred, they would esteem his help, but personally he had never yet found anyone who had been able to draft a better alternative. He would not deal with the question from the chemist's point of view, for he did not appeal to M.P.'s on pharmaceutical grounds, but upon public policy—upon principles which are not less sound in 1903 because it was thirty-five years since they found embodiment in the Pharmacy Act. He did not know whether the Parliamentary representative there that night was a student of John Stuart Mill, but if he should be he would no doubt recall the portion of his essay on Liberty which dealt with the sale of poison, wherein he laid down the principle that regulation and restriction in this connection was not an invasion of personal liberty, but rather an appropriate and urgent duty devolving upon public authority. Well, the Council of the Pharmaceutical Society of Great Britain took Mill's view of its obligations as a statutory body performing public functions, and claimed that the proposals embodied in the draft Bill, to which allusion had been made, were perfectly consistent with liberty, good government, and sound sense. The clause would afford a guarantee of safety which public officers, from Lord Chancellors down to police-constables, had recognised as the great want of the present law. Mr. Newsholme added that in what he had said about Alderman

Batty Langley he had not spoken offensively, because they all knew that the member for Attercliffe was anxious to do his best for any of them in Sheffield.

Alderman Batty Langley, M.P., responded He said things were so very mixed in the House of Commons just now, that they hardly knew who was who and where they were; and when they found the difference accentuated, as it had been by the Press that supported the majority of the House, they wondered what the result would be. They had heard a very great deal lately about retaliation, and something about preferential tariffs, and a great deal about Protection. But there were two kinds of protection known to the House of Commons. First, the House protected the public interest; and, secondly, it protected fair and honourable competition. He did not think any person would object to that kind of protection. This brought him to the subject which the President had introduced. "I am perfectly well aware," continued Alderman Langley, "that a Bill was introduced in the House of Commons last year, backed, I think, by eight different members. I think I spoke to six of them, and all those six were in opposition to some of the clauses of the Bill. I think this statement of mine is confirmed by the annual dinner of the Pharmaceutical Society, when Mr. Marshall Hall responded to the toast that I am now responding for, and I think he was very definite, indeed, in his statements. I had a conversation with him upon this Bill, and he told me that he could not support it, as it was introduced into the House of Commons, although his name was upon the back of the Bill. I spoke to Mr. Ellis Griffith, whose name, I think, is at the back of the Bill, and he told me the same. Mr. Lough said the same, and one or two other members whom I saw coincided with my own opinion about the Bill. Now, what was the main objection to some of the provisions of this Bill? It was practically this, that members who consulted each other in reference to the provisions of this Bill believed its main object was to aim a blow at limited companies. I have not heard a single member who backed this Bill, nor any other member of Parliament, say that it was not absolutely necessary in the interests of the public that every shop that was open in the United Kingdom for the sale of poisons and for the dispensing of medicines, should be managed, controlled, and governed by a chemist who had passed the necessary examinations and had received his diploma. I say so still, therefore, on the main points we are agreed; it is only the question of detail that remains. If it is the desire and the wish of the Pharmaceutical Society of England to

PREVENT LIMITED COMPANIES BEING BROUGHT INTO EXISTENCE,

in order that there may be honourable and fair competition, then you may depend upon it the House of Commons will never agree to such a measure. Now, it was said that Clause 7 of the Bill stated that it was necessary, or desirable, or should be made imperative, that every director of a limited company should be a qualified chemist. I know that that has been contradicted by some, and it was told to me in the lobby of the House that that is not the interpretation of the Bill. But I said, that is the interpretation of the Bill by the legal profession! If you will alter that, I have not the least doubt that in a great many of the other details the House of Commons will be prepared to support you, so long as you support the interests I have named. Well, so far as public and private Bills are concerned, I feel quite confident that the next Session of Parliament will be a complete failure. In all probability Government measures and discussions upon abstract questions will take up the whole time of Parliament, and there is very little likelihood of any private legislation taking place. Now, in reference to the work which is being done by pharmacists in the United Kingdom, I am sure the outside public generally acknowledge the valuable contributions to scientific research which the pharmacists have given to the world. We know that drugs at the present time occupy a very prominent position in the medical world, and they have been so manipulated by science as to rob them of their deterioration and to advance their usefulness. I am quite sure that the public generally are fully conscious of that fact, and their sympathies and help will go out towards the pharmacists of the United Kingdom. But any legislation that you may desire in reference to the question which our respected President has mentioned to-night must be on the lines I have indicated. I question very much whether you will find that any of the members of Parliament who put their names upon the back of that Bill last year will do so this. I have had repeated conversations with them upon the question, and they all seem to say, If there is anything which prevents the pharmacists of the United Kingdom from assisting the public in this question, we are prepared to help them, but if it traverses in any way the rights of the people of the United Kingdom, then it will not pass the House of Commons. I am much obliged to you for the way in which you have received the toast of both Houses of Parliament. I can assure you that those who even blocked your Bill last year have no unkindly or unfriendly feeling towards the Pharmaceutical Society of the United Kingdom. We will help you all we can. Go step by step, get first of all what you think to be the most important. Do it honestly, and weigh as to carrying public opinion with you, and then you will be successful in your Parliamentary attempts."

Mr. John Austen next proposed the toast of

The Lord Mayor and Corporation of Sheffield.

He remarked that chemistry was by no means unknown to the Lord Mayor (whose business is that of a gold and silver refiner). A profound knowledge of chemistry must be infused through his business, and he had no doubt that the Lord Mayor could give them a good many wrinkles with regard to the chemical and physical properties of gold and some of the rarer metals—a subject which they poor chemists had not much opportunity of studying. The Lord Mayor was, without doubt, the hardest-working man in Sheffield. The Corporation would be sixty years old on November 1, and for the improvements which had been made during that period the city had good reason to be thankful. The work of education had just been taken up, and he was sorry that, although their Society was an educational body, it was not represented on the Committee in the person of Councillor A. R. Fox.

The Lord Mayor, in reply, said during the time he had presided over the Corporation, it had shown a good deal of determination to do the best that could be done for the city. There were difficulties in the way of preventing the sale of impure milk. Legislation was surely needed on that point, and he hoped that when the Corporation Bill for the purpose came forward Alderman Langley would not block it. The Lord Mayor went on to speak warmly of Mr. Newsholme's co-operation with him in Poor-law work. He was rejoiced that Mr. Newsholme had been elected for three years in succession as the President of the Pharmaceutical Society. Now that Mr. Atkins had this year been elected in his place, he hoped that Mr. Newsholme would have more time to devote to Poor-law work. Still, Mr. Newsholme was absent from nearly half the Guardians' meetings because of the earnest and hard work he was doing in connection with their Society. He deserved every word of thanks they could give him for the hearty way in which he worked. He (the Lord Mayor) could not pretend to go into the rights and wrongs of the Bill; but he had very little doubt that if the pharmacists and gentlemen like Mr. Langley put their heads together, some way out of the difficulties would be found, by which the public could be secured with regard to the question of poisons.

Councillor A. R. Fox proposed the toast of

The Pharmaceutical Society of Great Britain.

He said he had for years supported the policy of the Society, and he recognised that a great deal had been done in the propagation of the Pharmacy Bill. But he thought the Society might take action in one matter to which it seemed to pay little regard at present. A sub-committee of the City Council, of which he was a member, had to deal with things in which pharmacists were more particularly interested—samples of sweet nitre, camphorated oil, and other commodities, which were deficient of their most necessary properties. He invariably asked the Medical Officer of Health if these commodities had been purchased from *bonâ-fide* chemists, and invariably got the answer that they had not. They were purchased at the same shops at which the inspectors obtained the margarine and the material which should have been cheese and was not. And what could they expect, if medicinal articles were to be purchased from any huckster's shop, but that they would get something that was inferior and not of the quality asked for by the purchaser? He suggested that the Pharmaceutical Society should request the authorities of towns and districts which had to deal with these matters to petition the House of Commons so that a much better state of things might be brought about. Going on to speak of the Pharmacy Bill, Mr. Fox said it provided for the establishment of a curriculum, and he hoped that they would also have a divided examination. They did not object to honourable and fair competition, but to misrepresentation they strongly objected. The time had come when something should be done, not only in the restriction of the sale of poisons, but with regard to the sale of medicinal articles that required skill, care and education in their preparation, and technical knowledge in their handling.

Mr. S. R. Atkins, J.P., responded. He thanked them for so arranging the date of the gathering as to allow him to be able to share in the great and brilliant celebration of the centenary of the Société de Pharmacie de Paris the previous week. He paid a warm tribute to the work of Mr. Newsholme, the first provincial President of the Pharmaceutical Society, who had demonstrated with great success that a provincial chemist might succeed most highly in the office. He knew what sacrifices Mr. Newsholme must have made, especially as he lived four hours' distance from London. He understood that the school of the Sheffield Society was merged with the work of the University College. He congratulated the pharmaceutical students of Sheffield and district upon the facilities which they now possessed for acquiring at least some of the branches of knowledge which were essential if they were to pass the examinations. From what he saw in the examination rooms, he was more profoundly convinced every day of the absolute necessity of systematic training. He was sure that the lamentable percentage of failures was only an indication of the entire want of such training. Young men frequently came up to London, conscious that they were frauds—he did not use the word unkindly or ungenerously—he meant that they were perfectly aware they were not prepared to pass the examination. Some of them came as a mere preliminary canter, to see what the examination was like; others came with the conviction that they had been crammed with undigested knowledge. The examiners were most careful and considerate. If a man failed to answer a particular question, the examiner aimed at finding out whether he had got a good man, and tried him with something else and something else. If he found all along the line that the man was simply crammed for the examination, and had acquired no adequate knowledge, of course, his duty was clear, and he sent the candidate down. There was only one way of meeting this, and it was by slow, patient, systematic plodding, and he wished young men would avail themselves of the facilities provided by university colleges and technical schools for the acquisition of knowledge. In his own district, after taking trouble to institute classes, and to secure competent teachers, he had been pained to find that they might lead a horse to the water, but they could not make him drink. That was the difficulty. With regard to the Pharmacy Bill, he assured Alderman Langley that they had no desire to interfere with the limited liability companies. It would be absurd, perfectly Utopian, to attempt such a thing. A body of their size and ability could not deal with a great question of that kind. But what they did say was that they deemed it to be an injustice that a man breaking the law as an individual, could then convert himself into a company and snap his fingers—the company could—in the face of the Act of Parliament. He reciprocated the very generous remark made by Alderman Langley, and hoped that by conferring together they might come to some honourable compromise or arrangement. They felt strongly on the fact that their men, who had been educated, examined, licensed, registered, to go forth into the world and practise their craft, had immediately to face the tremendous competition of a great syndicate with huge capital behind it, and were forced to go down under the water. The knowledge that came to him in connection with the Benevolent Fund of the Society was one of the most distressing things he had to meet with. He had in his possession a letter written by an old *confrère*, a man of the highest character, of the purest integrity, of a past career which would defy challenge as to its loftiness, and yet that man had had to succumb to the tremendous power of the competition that he had to face. It would be his duty, in a day or two, to lay the facts before the Committee, and support them with all the enthusiasm of which he was capable. Such cases were coming before them every month. There were other good things in the Bill, even if they were unfortunate enough to be defeated on Clause 7. They would get a curriculum at least, and they would get the registration of shops, which would be an immense boon. Now they had no power of inspection. In Paris the pharmacists had State inspection, and as a compensation, they had State protection, with the result that men possessing historic pharmacies, both French and English, were in an entrenched position. He urged them to keep their powder dry with respect to the Bill, and to remember, in dealing with members of Parliament, that they had an axe—an honourable axe—to grind. In the coming election there would no doubt be great cries of fiscalitis, education, and war office administration; but he urged them not to lose their heads, or their hearts, or their courage, or their power of attack, in dealing with the particular question which was dear to them. Let them all, in their respective localities, quietly buttonhole their members and explain the Bill to them. He was amazed at the want of knowledge on the part of their legislators. When he told a member in his district the simple fact that seven men could do what one dared not do, the member said, "Is it possible?" He believed that if they could get their Bill into the House, and have it explained by men who understood it, they would have done a great deal. He spoke next of

The Inland Revenue Question,

and said he desired to pay a loyal and hearty tribute to his excellent friend the Editor of the *Pharmaceutical Journal*, who had done a great deal to popularise the paper. He (the President) had for years held that the Journal ought not to cater for only 5 per cent. of the members of the Society. It was all very well to have an eclectic school of the highest culture, but he should be excessively liberal if he said that their ranks included 10 per cent. of men who understood and appreciated the very loftiest branches of science. They must in their official organ deal with the whole body whom they represented, and he was delighted to say that the Journal was now more read and more appreciated than he had ever known it in thirty years. (*Applause.*) But the Editor was doing more than that. The way to deal with the Inland Revenue question was not to be continually writing letters, which, in their cold, barren form of expression, were often misunderstood. It was better to talk the matter over with the men concerned. The Editor had gone down to the Inland Revenue Department, had told the authorities what the pharmcists' complaints and wishes were, and he believed it was correct to say that he had invariably met with the greatest courtesy and consideration. He knew he was on Tom Tiddlers' ground, and that there were some men who had smarted under the administration of the Act, but his own belief, from his limited acquaintance with the officials, was that they were quite prepared to listen most patiently and considerately to any arguments that might be advanced. He held in his hand a communication notifying another concession on the part of Somerset House to the appeal which the Editor was making. He honestly believed that before January 1, 1904, when their reprieve expired, they would have come to a most satisfactory arrangement. He believed that by a patient examination into this most vexed question they would find a solution of the problem which would be fair to the Department and just to themselves.

Mr. J. Rymer Young, in a humorous speech, proposed

The Sheffield Pharmaceutical and Chemical Society.

He remarked that such societies enabled the authorities in London to gauge the wishes, the desires, and the opinions of the members, and enabled those members to put pressure to some extent on their local members of Parliament, although he was afraid they had a rather hard nut to crack in Sheffield. He hoped Mr. Langley would modify his opinions after what he had heard that night. If the Pharmacy Act passed to-morrow it would not close one large store in Great Britain. But they considered it right that the man with the large store should be liable to the same regulations, the same penalties, and the same obligations which devolved upon the individual.

Mr. C. F. Carr, in reply, claimed credit for the Society for its past work, especially the carrying on of its School, and sincerely trusted that its present representation on the Council would be continued for years to come. The present condition of the Society was on the face of it very satisfactory, for they had an increased membership and a good financial position. There was certainly a growing interest in local associations all over the country, though he could hardly say that the growth was noticeable in Sheffield, where the meetings were no better attended than was the case a few years ago. He hoped the forthcoming meeting of the British Pharmaceutical Conference would stimulate them, and probably in the future they might have territorial representation, which might again bring the local associations to the front.

Other Toasts.

Alderman Langley, M.P., proposed the health of "The President," and Mr. Newsholme, in reply, spoke appreciatively of the members' suggestion of a compromise. The remaining toast was "The Guests," given by Mr. George Squire, and acknowledged by Principal Hicks. During the evening a musical programme was excellently carried out by the Sheffield Æolian Glee Singers.

PLYMOUTH, DEVONPORT, STONEHOUSE AND DISTRICT CHEMISTS' ASSOCIATION.

In the report at page 634 of last week issue, the names of the members appointed on the Committee were omitted. The Committee consists of the following:—Messrs. R. F. Roper, C. J. Park, F. W. Hunt, F. A. Spear, H. P. Hearder (Plymouth); Messrs. F. W. Brown, J. A. Lamble, and Martin Johnson (Devonport); and Messrs. J. Cocks and F. Downing (Stonehouse and District).

CHEMISTS' ASSISTANTS' ASSOCIATION.

VISIT TO LONDON HOSPITAL.

On Thursday, October 29, 1903, the members of this Association paid a visit, by kind invitation of Mr. John A. Jennings, to the dispensaries and pharmaceutical laboratory of the London Hospital. The department has been recently refitted with new machinery, and contains many interesting pieces of apparatus for manufacturing purposes. After visiting the in-patient dispensary, the members were conducted through devious passages to the store-rooms, of which there are several. In each the classification and arrangement of the drugs, sundries, and surgical appliances were much admired. The most interesting department, however, was the manufacturing laboratory. Here were seen a number of machines driven by electric power. In a large disintegrator gentian root was being powdered, and in another machine sulphur ointment was being made on the large scale. Mr. Jennings's private analytical laboratory was much admired, and considerable interest was taken in the small machines for making plasters, emulsions, and the like. Several tablet, pill, and lozenge machines were shown in operation in a special room. The quantity of these forms of medicament made at London Hospital is enormous. After a considerable time in the laboratory, the visitors adjourned to the out-patient dispensary, where there are eight different windows through which to hand medicine to patients. In this, as in the other departments, Mr. Jennings and his assistants were indefatigable in explaining the principal points of interest. When everything had been seen, Mr. Britton, President, proposed a hearty vote of thanks to Mr. Jennings. The vote was accorded by acclamation, and suitably responded to. The Secretary of the Hospital, Mr. E. W. Morris, Ph.C., was prevented from attending to help in receiving the visitors, as he had intended and hoped.

BOURNEMOUTH PHARMACEUTICAL ASSOCIATION.

ANNUAL SUPPER.

Friday, October 30, 1903, at the Hôtel Métropole, Bournemouth, the President, Mr. E. Worth, in the chair. There were present Mr. T. H. W. Idris and Dr. Coles (guests of the Association), and thirty-one members.

Mr. Worth proposed the toast of "The King," which was duly honoured, after which

Mr. J. Toone proposed the health of

Our Guests,

and, in doing so, said that Mr. Idris was a man in every way worthy of their honour and respect, a man who had risen to the top rank in pharmacy from the very lowest rung of the ladder. He referred to the very excellent work Mr. Idris had done upon the London County Council, more especially on the Sanitary Committee, and to the report that he was about to enter Parliament—he sincerely hoped that some day they might find him one of His Majesty's Cabinet Ministers.

Mr. Idris, in responding, said he felt quite unworthy of the highly eulogistic manner in which Mr. Toone had proposed his health, and, indeed, he felt it a great honour to be the guest of the Association. He expressed great pleasure at the opportunity of renewing acquaintances there, and referred to the first time he visited Bournemouth—twenty-five years ago—with his young family, who, soon after their arrival, managed to contract scarlet fever. He viewed with a considerable amount of envy the pharmacists of Bournemouth, and more especially their good relations with the medical men of the town; in fact, if all towns were like Bournemouth, his Bristol speech would never have been delivered. He next referred to his recent visit to Paris, and spoke very feelingly of his companionship with Mr. Atkins, whom he was proud to know as a pharmacist and love as a man, whose singular geniality and earnest interest in his craft endeared him to all. Mr. Idris considered the position of the French pharmacist was one which ought to be held by pharmacists in this country. Pharmacy in France was a regular branch of the medical faculty, and both pharmacist and doctor had respect for each other's functions. The social position also was better. At the present time there were six pharmacists in the Chamber of Deputies. He would always do his very best to realise "the possibility of doing something."

Mr. Bridge next proposed "Success to the Local Association," coupled with the name of the President, and Mr. Worth suitably replied.

Mr. Hardwick proposed a vote of thanks to the Hon. Secretary for the very able manner in which he had carried out the arrangements of the evening, and also to Dr. Coles, who added so greatly to the evening's enjoyment by his musical ability.

Mr. F. Rose and Dr. Coles responded.

During the evening songs and musical sketches were given by Dr. Coles, and Messrs. Bridge, Keen, Reid, and Williams, and a recitation by Mr. Curtis.

EDINBURGH CHEMISTS', ASSISTANTS', AND APPRENTICES' ASSOCIATION.

OPENING MEETING OF THE SESSION.

Wednesday, October 28, 1903, in the Pharmaceutical Society's House, 36, York Place, Edinburgh, Mr. Archibald Currie, Ph.C., President, in the chair.

Summer Session Report.

The Secretary, Mr. J. W. Plenderleith, read the report on the work of the summer session. It appeared that all the outings and demonstrations had been successfully carried out, and with better attendances than in some former years. The early morning excursion had been well attended, and appeared to meet a felt want. The report was adopted, on the motion of Mr. Cox.

Prize Committee's Report.

The Secretary read the report of the Prize Committee, from which it appeared that the McLaren Prize in prescriptions, elementary botany, elementary chemistry, and materia medica had been gained by James Alexander Gray (Duncan, Flockhart, and Co.), 139, Prince's Street, with 73 per cent. of marks, and the Dott Physics Prize in dynamics, hydrostatics and heat, by George Steven (Paton and Finlay), 177, Bruntsfield Place, with 64 per cent. of marks.

On the motion of Dr. Coull, the report was adopted.

Mr. Rutherford Hill presented to Mr. J. A. Gray a class ticket for a three months' evening course at the Royal Dispensary School of Pharmacy, and to Mr. George Steven, Attfield's 'Chemistry,' John's 'Flowers of the Field,' Cicero's 'Pro Plancio,' Alcroft's 'Roman History,' and Chaucer's 'Canterbury Tales.'

On the motion of the Chairman, cordial thanks were awarded to the donors of the prizes.

The President then proceeded to deliver the opening address on

The Education of the Pharmacist.

He pointed out the opportunities afforded by the daily work in a pharmacy to learn the principles and facts of various sciences. The opening of a bottle of soda water should teach something of Boyle's law and the solution of gases under pressure. The mixing of a seidlitz powder and the consequent evolution of CO_2 embodied the truths of chemical action and decomposition. The massing of a pill and the preparation of an emulsion taught the principles of pharmacy and dispensing, while in handling drugs one became aware of their physical characteristics, and learnt to distinguish the true from the false. Even in dusting bottles they might learn the Latin names and terminations of drugs and chemicals and become familiar with their appearance. He especially regretted the low percentage of passes in the Minor Examination, which he attributed to (1) insufficient preparation, (2) the increased scope and stringency of the examination, and (3) the want of gradual and systematic preparation and training. He was of opinion that the examination would be improved if it were divided. He favoured an examination, first, in chemistry, botany, and physics, and, six months afterwards, in materia medica and pharmacy. Affiliation with a university would, he thought, give pharmacists a more assured standing among professional men and in the eyes of the public. Another matter which demanded attention was the application of their knowledge in the manufacture of their own galenicals." We deliver ourselves bound hand and foot into the hands of the wholesale manufacturer, and then complain because he takes the cream of the profit. I say he deserves it, because to him belong the brains and the enterprise." Outside the field of every-day routine, he thought, the pharmacist should know something of water, milk, and urine analysis; of the detection of alum in bread and sand in pepper; of the detection of bacteria in sewage; and of the preparation of toxins and antitoxins. He concluded by referring to the advantages offered by membership of their Association, and the pleasure and instruction to be derived from the botanical excursions and the meetings.

Mr. A. E. Kelly, Vice-President, in moving a vote of thanks, said it was clear that their methods of education required readjustment. With regard to the Minor Examination, he was of opinion that a division of it, as suggested by the President, would do good.

Mr. Thomas Stephenson, in seconding, remarked that it had been well said that every man should endeavour to know everything about something and something about everything.

Mr. Glass, in supporting the vote of thanks, said in Edinburgh they had ample opportunities for self-improvement. It was a great benefit to have the Society's house in which to meet.

The vote of thanks was passed with acclammation.

Mr. David Rodger was appointed interim treasurer during the absence of Mr. E. O. Rowland.

CUMBERLAND AND WESTMORELAND CHEMISTS' ASSOCIATION.

MEETING OF COMMITTEE.

Friday, October 23, 1903, at Carlisle.

It was decided to recommend chemists to take advantage of the 'Pharmaceutical Journal Formulary' and publish any recipe that they do not wish to stamp in that book, so as to avoid the necessity of placing the names of the active ingredients upon the label.

LEEDS AND DISTRICT CHEMISTS' ASSOCIATION.

ANNUAL MEETING.

Thursday, October 29, 1903, in the Church Institute, Leeds, Mr. F. W. Branson, F.I.C., President, in the chair. There was a large attendance.

The following were elected members:—Miss Helen Worfolk, Messrs. Hardman, Castelow, Kirk, Overend, Horner, Lister, Bowell, Islip, and Craven.

Mr. F. C. Long, Hon. Secretary, then read the

Annual Report,

which gave a *résumé* of the work of the Association during the past session. Through the kindness of Mr. W. P. Bowman and the retiring President (Mr. F. W. Branson), the Council were able to announce that a complete set of new materia medica specimens had been placed in the Museum, and a number of valuable books added to the Library. The rearrangement of both departments had been undertaken by Mr. Gough, who had kindly consented to act as Curator and Librarian. Mr. W. P. Bowman had, further, generously offered to provide the sum of £5 per annum, to cover the cost of prizes to be offered for competition by junior members and associates in subjects of pharmaceutical interest. The Council expects that this scheme will be in full working order during the coming session. The financial statement showed a balance in hand of £1 1s. 7d.

The adoption of the report was moved by Mr. Ward, seconded by Mr. Yewdall, and carried unanimously.

Other Matters.

Votes of thanks were passed to the Pharmaceutical Society for the gift of the *Pharmaceutical Journal*, to the Executive of the Pharmaceutical Conference for the gift of the 'Year-Book,' and to the retiring officers for their services in the past.

The following were elected for the ensuing session:—President, Mr. G. W. Worfolk, Ilkley; Vice-President, Mr. W. Pollett; Hon. Secretary, Mr. F. C. Long; Hon. Treasurer, Mr. J. H. Beacock; Council, Messrs. Hollingworth, Johnson, Castelow, Sergeant, Mundell, and Preston; Hon. Librarian and Curator, Mr. Gough; Auditor, Mr. G. Jackson.

GLASGOW AND WEST OF SCOTLAND PHARMACEUTICAL ASSOCIATION.

ORDINARY MEETING.

Thursday, October 29, 1903, at 94, West Regent Street, Glasgow, Mr. W. L. Currie, President, in the chair.

Mr. A. Boyd read a paper on

Pharmacists and the Inland Revenue.

He gave the history of the Medicine Stamp Duty Acts. He did not deem it good policy to ask either for the amendment or abolition of the Acts. A full and lucid explanation was then given of the present position with regard to the stamping of recommended medicines. He thought that recent decisions had compelled the Board to change its method of administration in a way which would be beneficial to legitimate pharmacy, and would check the sales of medicines by hucksters.

Mr. Gilmour thought that if the companies could not evade the new reading of the Act they would use every effort to get it amended.

Mr. J. W. Sutherland said that chemists should apply themselves to the task of improving or abolishing the Act.

Mr. Brodie and Mr. Walker also spoke, the latter suggesting that a committee of medical men and pharmacists should be appointed to decide whether stamped medicines had the virtues claimed for them.

Mr. Moir gave his experiences with the Inland Revenue authorities in regard to the sale of corn salve. He had not paid the £10 which had been demanded of him.

Mr. Gray counselled chemists not to give in, but to fight the Board of Inland Revenue.

Other members having spoken, Mr. Currie said that there was nothing wrong with the Act if properly administered. He did not favour the abolition of the Act.

Mr. Gilmour read a

Note on Chinese Pills,

by Mr. Thomas Maben. The paper was a description of some Chinese tonic pills which had been placed in Mr. Maben's hands by Mr. John MacMillan, Hon. President of the Association. Each pill weighs about 180 grains, is about an inch in diameter, and is covered with gold-leaf. This is enclosed in a covering of wax, which is stamped with the chemists' trade-mark and the name of the pill. The pills are then wrapped in cotton-wool, and packed in a box covered with figured silk. A handbill describing the virtues of the pills is issued with them, the language being couched in truly Oriental style. The patient breaks off a piece of the size of a pea when required.

A vote of thanks was accorded to Mr. Maben.

BARNSLEY AND DISTRICT CHEMISTS' ASSOCIATION.

ANNUAL MEETING.

Thursday, October 29, 1903, at the Royal Hotel, Barnsley.

The reports of the Secretary and Treasurer showed the Association to be in a flourishing condition.

Election of Officers and Council.

The elections resulted as follows:—President, Mr. H. B. Billington; Vice-Presidents, Messrs. J. B. Ellisson and J. E. Matthew; Hon. Treasurer, Mr. E. Nash; Hon. Secretary, Mr. W. Rigby.

A discussion took place on the medicine stamp question. The discussion was adjourned to a future meeting, as it was thought it would be better to wait for further developments and concessions from the Board of Inland Revenue, should such take place.

WAKEFIELD CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Tuesday, November 3, 1903, at the Victoria Temperance Hotel, Mr. Pollard in the chair.

An interesting discussion took place as to articles which were liable to medicine stamp duty.

The Hon. Secretary said that he thought that all members of the Association would join with him in congratulating Mr. Pollard upon his appointment as President of the Yorkshire (West Riding) Federation.

Mr. Pollard acknowledged the compliment.

IRISH CHEMISTS' ASSISTANTS' AND APPRENTICES' ASSOCIATION.

SMOKING CONCERT.

Friday, October 30, 1903, at the Gresham Hotel, Dublin, Mr. Edgar B. Aplin in the chair. Some three hundred members and visitors were present, and an excellent musical programme was submitted. As a result, a profit of over £4 was realised. It has been agreed to hold an informal supper at the Gresham Hotel in January next.

BRITISH MEDICAL ASSOCIATION.

MEETING OF COUNCIL.

Wednesday, October 21, 1903, at 429, Strand, W.C., Mr. Andrew Clark, Chairman of the Council, in the chair.

The Report of the Committee on Poisons.

It was resolved that a Memorandum be communicated to the Lord President of the Council, as expressing the opinion of the Association on the changes proposed in Schedule A of the Pharmacy Act.

The following is the full text of the Memorandum referred to, which is reprinted from the *British Medical Journal*, and has been prepared by the Medico-Political Committee:—

> *Memorandum of Considerations to be submitted to the Lord President of His Majesty's Privy Council, in relation to certain proposed changes in Schedule A of the Pharmacy Act*, 1868.
>
> The Council of the British Medical Association has taken into careful consideration the changes in Schedule A of the Pharmacy Act, proposed by a Departmental Committee appointed by the late Lord President, to consider and report on the alterations required in the said Schedule, and would most respectfully submit for the consideration of your Lordship the objections which it appears to the said Council should in the public interest be urged against the proposal of the majority of the Committee to relax in respect of certain poisons the restrictions at present imposed on the retail sale thereof by the Pharmacy Act.
>
> The poisons, the sale of which it is proposed to facilitate, are preparations of arsenic, tobacco and its alkaloids, and carbolic acid, when sold for agricultural or horticultural, and, as regards carbolic acid, also for sanitary purposes. In respect of these poisons, when sold for the purposes described, it is proposed no longer to require that the seller shall be a person who has given evidence of technical training and knowledge in accordance with the provisions of this Act.
>
> The Council of the British Medical Association feels called upon on behalf of the medical profession to express the grave misgiving with which those who are made aware in the course of their professional duties of the dangers attending the retail sale of poisons in general, and especially in the cases of arsenic and carbolic acid, must regard any violation of the salutary principle stated in the Preamble of the Pharmacy Act, 1868, namely, that it is expedient for the safety of the public that persons keeping open shop for the retailing of poisons should possess a competent practical knowledge of their business, and to that end, that before commencing such business they should be duly examined as to their practical knowledge.
>
> The majority of the Departmental Committee state in paragraph 5 of their Report, that they felt it incumbent upon them to ascertain (*a*) whether certain conditions, in their view undesirable, restricting the sale of certain poisons, had been caused by the provisions of the Pharmacy Act, and, if so, (*b*) whether relaxation could be conceded without undue risk of human life.
>
> It is observed with surprise that, while the former of these questions is fully discussed in the Report, no statement appears therein of the grounds on which the majority of the Committee give an affirmative answer to the latter question, though evidence was submitted to the Committee making clear the manner in which the technical training and knowledge of the seller under the present law operate in practice for the protection of the public.
>
> We would call the attention of your Lordship to the additional weakening proposed by the majority of the Committee of the precautions enforced by the present law in the case of arsenic. It would appear that no provision is suggested by the Committee that sales of preparations of arsenic for use in agriculture and horticulture should be registered in a book kept for the purpose, analogous to that prescribed in Schedule F of the Pharmacy Act. In this connection your Lordship is respectfully reminded that even under the existing law arsenic has frequently been used for criminal purposes; that in many cases of poisoning the criminal has been traced through the evidence afforded by the chemist's poison register; and that arsenic is contained in many of the insecticides now on the market (notably one named "Ballikinrain," prepared by Messrs. Alexander Cross and Sons, which is reported to contain arsenious oxide to the extent of 24 gr. per fluid ounce).
>
> Further, as regards carbolic acid, it has been felt for a long time by the British Medical Association that this poison and its preparations should rank among those denominated in Part I. of the Schedule. The great frequency of cases of poisoning, whether suicidal or homicidal, by carbolic acid, and the difficulty of treating such cases, induce the Council of the Association earnestly to invite the special consideration of this point.
>
> For the reasons, therefore, explained in this Memorandum, the Council of the British Medical Association would urge, with all respect, that His Majesty's Government should not initiate or approve legislation for the purpose of facilitating the sale of poisons in the manner proposed by the majority of the Departmental Committee.
>
> It appears proper that, inasmuch as this Memorandum is submitted by a body representative of the medical profession, some reference should be made herein to the proposals directly affecting that profession put forward by Mr. Alexander Cross, M.P., in the concluding paragraph of his Supplementary Report. It is perhaps sufficient, however, to state, briefly, that members of the medical profession in general are not disposed to support these proposals, being of opinion that medical men who keep open shop for the sale of poisons should, in the public interest, be bound, as regards the employment of assistants, by the same regulations as registered chemists.

Ethical Committee.

The following recommendations and extracts from the minutes of the Ethical Committee were also adopted. This report is also reprinted from the *British Medical Journal*:—

List of Consultants.

Certain lists of consultants contained in the *Chemist and Druggist Diary* were considered, and the Editor of the *Chemist and Druggist* attended in compliance with the invitation of the Committee. The Committee resolved:—

> That the Secretary be instructed to write to the Editor of the *Chemist and Druggist* thanking him for attending the meeting and for consenting to withdraw from the *Chemist and Druggist Diary* the "classified list of specialists," and asking if the proprietors could see their way to remove also the alphabetical list of consultants.

Patenting Appliances.

On the question of the propriety of medical men patenting certain medical and surgical appliances, the following resolution was adopted:—

> That in the opinion of the Committee it is contrary to the ethics of the medical profession to attempt to secure a monopoly in the sale of any article used in the treatment of disease, and especially by patenting any such article in the name of a medical practitioner whose name would necessarily be used in its advertisement.

Title of Doctor.

The question of medical men who do not hold a university degree styling themselves "doctor" was considered. The Committee expressed the opinion that medical practitioners who do not possess the degree of M.D. or M.B. are not justified in styling themselves "doctor."

Testimonials.

An inquiry from a medical man as to the propriety of complying with the request from the makers of a patent food to give certain testimonials was considered, and the Committee resolved:—

> That in the opinion of the Committee testimonials should not be given to be used in advertisements issued to the general public.

SOCIETY OF CHEMICAL INDUSTRY.

LONDON SECTION.

Monday, November 2, 1903, at Burlington House, Piccadilly, W., Mr. Walter F. Reid in the chair. Several papers were read and discussed. This was the first meeting of the present session, and the attendance was unusually large. Professor Sir William Ramsay sat on the right of the Chairman.

The Chairman announced the resignation of Mr. A. R. Ling, Secretary of the London Section, and the appointment in his stead of Mr. L. Julian Baker.

The programme included papers dealing with "The Application of the X-Rays to the Examination of 'Safety Fuses,'" by Mr. Hake, Chief Inspector of Explosives, Melbourne; "The Densities of Concentrated Nitric Acid at Different Temperatures," "A Comparison of Different Types of Calorimeters"; but the bulk of the time was taken up with papers dealing with the manufacture of matches.

Scarlet Phosphorus.

Mr. W. Muir gave some particulars of "Scarlet Phosphorus"—a new chemically-active variety of red phosphorus, which had been used in the manufacture of matches.

This "scarlet phosphorus" is a non-poisonous substance, which, if used commercially, would abolish the danger to which workpeople engaged in match factories are subjected. It is not destroyed by damping. This new body is formed by boiling for several hours a 10 per cent. solution of white phosphorus on phosphorus tri-bromide. Thus prepared, it is a fine powder of a bright scarlet colour, containing many impurities. Its cost is about 2s. 3d. per lb., whereas the price of the amorphous is 1s. 9d. per lb.; its igniting point varies from 130° C. to 170° C.

Sir Wm. Ramsay testified to the non-poisonous nature of the new phosphorus; a cat which had swallowed 50 grains of it was still living. After witnessing some experiments, he thought it possible that the substance might be a solid solution of P_4H_2 in red phosphorus. The discussion, however, which ensued, was more hilarious than scientific, and another chemist, Mr. F. Bale, followed with a discourse on a rival match. The substance he advocated was a hydrocarbon phosphide containing 9 per cent. of the phosphide. He could not claim for it that it was exactly non-poisonous; in fact, he was of opinion that it was impossible to produce a "strike anywhere" match which was non-poisonous. The Belgian Government, five years ago, offered a prize of £2,000 to the inventors of a harmless strike-anywhere match, but none of the products submitted answered this description.

Mr. Bale was called on to answer many questions, and Mr. Moore pointed out that when the substance advocated by Mr. Muir was produced the Belgian Government had withdrawn its offer. It was suggested that Mr. Bale's was not really a compound but a mixture.

LIVERPOOL SECTION.

On Wednesday, October 28, 1903, the Hurter Memorial Lecture was delivered in the Chemical Theatre of the University of Liverpool, Mr. Frank Tate in the chair. Amongst the audience were Professors Campbell Brown, Wilberforce, and Moore, Drs. Affleck (Alkali Inspector, Widnes district), T. Lewis Bailey (Hon. Secretary of local section), Conroy, Titherley, and Rasahen (Chief Chemist to the United Alkali Company), and Messrs. Forbes Carpenter (Chief Alkali Inspector), Eustace Carey, R. C. Cowley (President of the Liverpool Chemists' Association), Prosper Marsden, and Smetham.

The lecture was established some years ago in memory of Dr. F. Hurter, whose work with Driffield in connection with photographic plate speeds is so well known. It is delivered once in two years, the first two having been by Professor Lünge and Sir William Abney. Wednesday's lecture was by Mr. George Beilby on

The Surface Structure of Solids.

The lecture was most interesting, and was well illustrated by diagrams, lantern slides of photo-micrographs, and samples of metals in various conditions.

Mr. Beilby showed the existence of a definite film upon all polished surfaces, a film quite different in character from the metal underneath, and caused by the polishing process, be it filing, or finer polishing by means of a buff leather, or what not. This film was of the nature of a liquid, and, as such, was subject to the action of surface tension. Photographs of the surface of a silver plate which had been filed in one direction were thrown upon the screen; many furrows were noticed. The plate was then polished by means of a buff leather and oxide of tin, and the result of this was a flow of molecules set in motion by the action of polishing, which filled up the furrows. Upon now etching the plate with cyanide of potassium the film was removed, and the original drop-like furrows caused by the filing were brought to light. With "Speculum metal" the same kind of phenomena were noticed, the furrows, however, being more crystalline in character, and this is more noticeable when antimony is the metal employed. Calc spar, which has been acted upon by a weak solution of hydrochloric acid, shows a lowering of the level, and a similar film is observed upon polishing. The work of Faraday in connection with the production of very thin films of the metals was touched upon, and Mr. Beilby stated that this experimenter had been able to produce films of gold one three-millionth of an inch in thickness. The action of heat upon metals was also shown to cause a certain degree of mobility to the molecules of the surface of the metal, resulting in the formation of a film which had the characters of a liquid. A thin sheet of silver, when heated, became more transparent, and, upon rubbing this leaf with a burnisher, the original opacity of the leaf was restored, it being a better reflector at the place where it had been burnished. The "Spicular" appearance of metals was shown to be due to a granular texture in the thin translucent film with which the surface is covered. This granular texture is due, wholly or in part, to the action of surface tension on the surface layer of molecules while it is in the mobile condition.

A vote of thanks to the lecturer was proposed by the Chairman, seconded by Dr. Campbell Brown, and carried by acclamation.

YORKSHIRE SECTION.

On Monday, November 2, 1903, at Leeds, Mr. F. W. Branson, Ph.C., read a paper on "Some Properties of Radium Salts," with illustrative experiments. He showed on a screen some of the phenomena of radio-activity, and explained how the relative strength of different samples of radium salts could be compared by the use of the electroscope. Mr. W. Ackroyd dealt with the colour changes effected by radium rays, and Mr. T. Fairley described the process used for the extraction of radium from uranium ore.

WOLVERHAMPTON AND DISTRICT CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Wednesday, November 4, 1903, at the Star and Garter Hotel, Wolverhampton, Mr. F. A. Willcock in the chair.

Mr. J. Rymer Young delivered an address on "Panaceas," which is printed in full at page 662.

Mr. Gerrard said he would be very pleased to see territorial representation, but he did not think it practicable to find suitable men in every district. He was strongly in favour of the curriculum clause in the Pharmacy Bill. He proposed a hearty vote of thanks to Mr. Young for his address.

The vote was seconded by Mr. Warner, and carried unanimously.

LONDON CHEMISTS' ASSOCIATION (SOUTH LONDON SECTION).

ANNUAL MEETING.

Wednesday, November 4, 1903, at the Horns, Kennington, S.E., Mr. F. Truman in the chair.

Annual Report.

Mr. R. B. Betty, Secretary, read the annual report, which stated there was a small balance in hand. The total membership of the Association was 250. In view of the new Pharmacy Bill, and other matters of importance to the craft, the Pharmaceutical Society would need all the support they could get, and the report urged members to use their endeavours to persuade their chemist neighbours to join the Association.

Election of Committee.

Messrs. J. Brown, J. Butterworth, S. Dawson, W. S. Glyn-Jones, T. H. W. Idris, R. H. Jones, A. Pellew, G. P. Pond, H. Slater, J. C. Umney, W. Watson-Will, D. White, R. Willson, and J. H. Aldridge were elected members of Commitee for the present session.

A vote of thanks was passed to Mr. Bunker, the retiring member of the Committee.

The 'Pharmaceutical Journal Formulary.'

Mr. Truman, in introducing a discussion on the medicine stamp question, expressed the opinion that the latest concession of the Inland Revenue authorities was unfortunate from the chemists' point of view. He referred to the immense amount of work involved in the compilation of the large collection of recipes published in the *Pharmaceutical Journal*.

Mr. R. H. Jones pointed out that advantages were still left which would be most valuable to chemists.

After remarks from a few members, it was decided to adjourn the discussion to a later date.

Chemists' Difficulties.

Mr. Willson then read a paper dealing with the difficulties the chemist had to contend with. Under the Food and Drugs Act, said Mr. Willson, a great many injustices had been done. It was impossible for any chemist to keep his stock in absolutely perfect condition. One theory of the adulteration authorities appeared to be that every drug could be bought, kept, and sold in absolutely perfect condition. In practice this was an impossibility. Another objectionable feature was the arbitrary selection of standards. It was utterly absurd to take the B.P. as a standard for a number of articles. To make a show without much difficulty, officials under the Food and Drugs Act took up tricky things like sweet nitre, which can never be sold at the same strength twice. The "indecision" of the medicine stamp department was next commented on by Mr. Willson, who concluded by submitting a resolution to the effect that the meeting recommends the Executive of the London Chemists' Association to approach the Pharmaceutical Society, with a view to securing the Society's assistance in cases where a registered chemist receives unjust treatment in the courts.

After a discussion of a conversational character, the meeting decided that the resolution lie on the table *sine die*.

Mr. Watson-Will read a recommendation to local associations from the Executive of the Federation of Local Associations, and the meeting adjourned.

BLACKPOOL AND FYLDE CHEMISTS' ASSOCIATION

FIRST MEETING OF THE SESSION.

Tuesday, November 3, 1903, at the Palatine Hotel, Blackpool, Mr. Turver in the chair.

The Secretary read a letter received from Mr. Worsley Taylor, M.P., in acknowledgment of a *Pharmaceutical Journal* sent containing Mr. Idris's address at the Conference, saying he would carefully read the marked part.

The President introduced the 'Pharmaceutical Journal Formulary,' and referred to the repetition of formulæ. He thought it should be more condensed, and that in its present condition it might do injury to chemists by the public gaining possession of copies, through, perhaps, the death of a chemist. He advocated the publishing in Latin and symbols, as he had seen a B.P. on a second-hand bookstall.

Mr. Laurie, and other members, spoke in similar terms, all, apparently, thinking that the public would be able to obtain copies of the book. It was resolved:—

> That it is the opinion of this meeting of the Blackpool and Fylde Chemists' Association that great credit is due, and the best thanks of this meeting be presented, to the publishers of the 'Pharmaceutical Journal Formulary.'

To make the 'Formulary' of the utmost possible value, the meeting urged the adoption of Latin and symbols, as far as possible, instead of the English now used.

BRITISH PHARMACEUTICAL CONFERENCE.

MEETING OF BRISTOL EXECUTIVE.

Wednesday, October 28, 1903, at the University College, Bristol, Mr. J. W. White (President) in the chair. The Hon. Treasurer presented the financial statement, which showed that, after meeting liabilities, there remained in hand a balance of £15. Messrs. Allen and Turner audited the accounts, and found them to be correct.

Mr. B. Allen proposed, Mr. E. T. Young seconded, and it was decided, that the balance of £15 should be handed over as a donation to the Benevolent Fund of the Pharmaceutical Society. It was also agreed that a circular should be printed giving particulars of the Hon. Treasurer's report, and sent to all who had subscribed to the local fund.

GLASGOW AND WEST OF SCOTLAND CHEMISTS' TRADE ASSOCIATION.

ANNUAL MEETING.

Tuesday, November 3, 1903, at 94, West Regent Street, Glasgow, Mr. J. W. Sutherland in the chair.

The President's Address.

The Chairman strongly urged members to put pressure on manufacturers of proprietary articles with a view to the protection of prices. He thought the P.A.T.A. furnished the best means for achieving that object, and referred to the successful convention held last year in connection with the P.A.T.A. He then referred to the report of the Committee on Poisons. It was important that their Association should watch the interests of pharmacy with regard to poisons legislation. The stamping of medicines and doctors' dispensing were also alluded to. Mr. Dunlop, their Secretary, had resigned; they were all grateful to him for his hard work in that capacity.

Annual Report.

Mr. **Dunlop** submitted the annual report, which detailed the work of the year. The Committee had met on thirteen occasions, and the attendance at each was very good. The balance in hand, after meeting an expenditure of £24 1s. 7½d., amounted to £10 10s. 8½d.

The report was unanimously adopted, and office-bearers and a committee were afterwards appointed.

A vote of thanks to the Chairman concluded the proceedings.

HULL CHEMISTS' TRADE ASSOCIATION.

ORDINARY MEETING.

Tuesday, November 3, 1903. It was desired to add another popular infants' food to the list of proprietaries already stocked by members, and Mr. **Twigg** submitted quotations received by him in answer to inquiries of Benger's, Neave's, and Mellin's. It was decided that Benger's Food did not allow a sufficient margin for the outlay of £25. Neave's very best terms were 7s. 4d. a dozen, and it is sold all over the city at 7½d., consequently it was decided to leave it severely alone. Mellin's Food was finally selected, but the meeting expressed the opinion that the protected price should be higher. A sample of finely levigated boric acid was unanimously approved of, and orders placed for it.

HALIFAX AND DISTRICT CHEMISTS' ASSOCIATION.

QUARTERLY MEETING.

Monday, November 2, 1903, at the Old Cock Hotel, Halifax, Mr. T. **Briggs**, President, in the chair.

Reference was made to the serious illness of Mr. W. Haigh, and deep sympathy was expressed. It was decided, on the motion of Mr. **Thompson**, seconded by Mr. **Brierley**, to forward to him a vote of condolence.

An animated discussion took place on the subject of a "non-cutting" agreement of an aërated water company.

Mr. **Black** proposed, and Mr. **Brierley** seconded: "That the members of the Halifax Chemists' Association refuse to stock 'Sparklet Syphons' under present conditions, and unless they are put on the P.A.T.A." This was carried unanimously.

Medicine Stamp Duty.

Mr. J. **Tiffany** drew attention to an advertisement of Woolleys, Limited, Blackburn, in which they described their preparation as "Emulsion No. 55." He should like the opinions of the members of the Halifax Association on the point whether such description was liable to stamp duty or not.

The **President** said he regarded that as a matter that should be discussed by chemists and druggists all round. He moved that they draw the attention of all the trade journals, and also of Mr. Glyn-Jones, to the matter.

Mr. C. **Fielding** suggested that it would be a more effective way to ask the Pharmaceutical Society to draw the attention of the Inland Revenue to the matter.

Mr. **Coff** seconded the President's motion, which was carried.

A long discussion ensued on the whole question of medicine stamp duty.

LEGAL INTELLIGENCE.

Pharmacy Act, 1868.

Proceedings at Kingston Under Section 15.

Pharmaceutical Society v. Morgan.

On Friday, October 30, 1903, at Kingston-on-Thames County Court, before the Registrar, Wilfred Ernest Morgan, the unqualified manager of the Norbiton Drug Stores, Limited, was sued, at the instance of the Pharmaceutical Society, for four penalties of £5 each for infringements of Section 15 of the Pharmacy Act, 1868.

Mr. Quarrell, of the firm of Flux, Thompson, and Quarrell, appeared for the Society, and defendant appeared in person.

The offences consisted of selling chlorodyne (on two occasions), oxalic acid, and paregoric. At the outset Mr. Quarrell asked the Registrar to strike out the claim for the penalty in the last case, inasmuch as, on analysis, it had been found that the paregoric contained no opium.

Defendant admitted the offences, and offered to pay by instalments of 10s. per month.

In reply to Mr. Quarrell, defendant admitted that he held 300 out of the total of 331 shares in the company, and that he was the managing director. He drew as a salary £2 10s. per week, but he immediately paid back £1 into the banking account of the company. He further stated that the company paid the rent of the premises, £45 per annum.

The Registrar ordered the defendant to pay the amount claimed and costs by instalments of £1 per month, and, at the request of Mr. Quarrell, consented to endorse the order with an intimation that if the penalties were not paid defendant would be liable to go to prison.

Worship Street Police Court.

Alleged Receiving of Stolen Pills.

On Saturday, October 31, 1903, at Worship Street Police Court, London, E.C., the final hearing of a charge of receiving with guilty knowledge 595 boxes of pills and 360 phials of pills was proceeded with, the accused being James Lloyd Davies (37), chemist, trading as Thomas and Co., at 411, Mare Street, Hackney; Arthur Levy (61), general dealer, of Homerton; and William Fordham (57), comb-maker, of Valentine Road, South Hackney. They were arrested on October 4, and have been remanded from time to time, but had been at large on bail. The facts of the case for the prosecution were that Davies had been advertising pills, of Beecham and others, at a price below that allowed by the manufacturers to the trade. Messrs. Beecham caused inquiries to be made, and after the purchase of some of their pills, the numbers of the packing of which showed that they were recent consignments to the Co-operative Wholesale Association, Limited, of Leman Street, Whitechapel, the matter was put into the hands of the police. When Davies' shop was searched, the large quantity of pills above mentioned were discovered. There were boxes of Beecham's, Dr. Scott's, Carter's, Page Woodcock, Williams' Pink Pills, and Bile Beans.

Davies showed that he had paid by cheques at various times for the pills, the cheques being drawn in favour of William Peake. He sent his shop-boy to assist the police officers in finding Peake, and that person proved to be Fordham. He said he had sold the pills merely as agent for Levy, and Levy, when found, said he had taken them as a bad debt from a man who had borrowed money of him.

Levy declared that he, as a money-lender, had trusted the man from whom he got the pills without taking any security or any promissory note. He could not give the name or address of the man, and the Co-operative Society, though having a strong suspicion, admitted they could not trace the thief or thieves. The major portion of the evidence was made up of witnesses from the various manufacturers of the pills, who traced the pills by the numbers of the boxes in dozens as packed by them for the Co-operative Association.

Mr. George Kenningford, head of the Statistical Department of the Association (which, it was explained, only sold wholesale, and did no retail trade or made sales over the counter), said that a balance-sheet had been struck for the purposes of this case from December last to October 10. There had been discovered a shortage of stock (wholly in the pills department) of 284 dozen packages of pills, of the value of £700.

For the defence, Mr. Freke Palmer and Mr. Margetts addressed the magistrate, contending that there being no proof of theft, there could be no felonious possession.

Mr. Corser reserved his decision until Monday, when he said it was a case for a jury, and committed the prisoners for trial. Bail was accepted.

High Court of Justice, King's Bench Division.

The Sale of a Business.

On Friday, October 30, 1903, before Mr. Justice Kennedy and a special jury, the hearing was continued of the action in which Mr. H. W. Scobell sued Mr. W. F. Gadd for damages for breach of warranty in regard to the sale of a chemist's business at Ramsgate (see page 638).

Mr. Scobell, the plaintiff, was cross-examined, and, in reply to Mr. Bankes, said in the first thirteen months the takings of the business were only £493, whereas they were represented to be about £900 yearly. His son conducted the business, and he had every reason to believe he carried it on properly. He was aware that the cash trade done by his son was much smaller than that done by the defendant when he was there, and, of course, that might be accounted for if someone omitted to charge up the cash receipts while his son was there.

For the defence, Dr. Styan, Medical Officer of Health for Ramsgate, said there was a marked contrast in the way Mr. Scobell conducted the business compared to Mr. Gadd. The latter was always reliable, experienced, and civil, whereas Mr. Scobell was inexperienced, and neglected the shop, witness receiving a number of complaints from customers, many of whom left off dealing at the shop.

The case was further adjourned.

On the resumption of the case, on Monday, Mr. Gadd, the defendant, was called, and said he carried on the business continuously from 1878 to 1902, and had no other source of income than the profits of the business, out of which he had been able to put by £2,000 or £3,000. When he sold the business to plaintiff it was about stationary, and was neither progressing nor dwindling. Ten years before he sold he admitted the takings were about £1,200 yearly. He had received many complaints from his late customers about the conduct of Mr. Scobell, junior, who carried on the business. The ordinary profit on a sixpenny purchase would be threepence.

Mr. J. W. Brown, assistant to Messrs. Orridges, the agents who sold the business, said nett profits meant the amount that was left from the gross profits after deducting working expenses and two-thirds rent and taxes.

In the result the jury found for the defendant.

Eucalyptus Oil for Ipecacuanha Mixture.

On Thursday, November 5, 1903, before Mr. Justice Phillimore and a common jury, the action was again heard in which Mr. Theodore Hall, house furnisher, of Ealing, sought to recover from Messrs. Bruce's, Limited, trading as chemists, Ealing Broadway, damages on behalf of his infant son, for having been supplied with eucalyptus oil instead of ipecacuanha wine, syrup of squills, and tolu. At the first hearing (*P.J.*, **16**, 765) the jury were unable to agree. The circumstances of the sale were then reported in the Journal.

Mr. Tindal Atkinson, K.C., and Mr. Cababe were for the plaintiff; and Mr. Rawlinson, K.C. (with whom was Mr. Matthews), instructed by Messrs. Neve, Beck and Kirby, solicitors to the Chemists' Defence Association, represented the defendants.

The two chief points at issue were—(1) whether there had been culpable negligence on the part of Messrs. Bruce's assistant in selling the eucalyptus oil; (2) if so, to what an extent had the child suffered injury in consequence? After a hearing which occupied the whole of the day, the jury found for the plaintiff, awarding the father £25 damages for the expenses to which he had been put in connection with the child's illness, and £75 additional damages to the child.

Judgment was consequently given for the plaintiff, with £100 damages, and costs.

High Court of Justice, Chancery Division.

A Patent for "Clinicals."

On Friday, October 30, 1903, in the case of Hicks *v.* Simmons, Mr. Gordon, for the plaintiff, mentioned a motion in this action to Mr. Justice Joyce. The learned counsel stated that the plaintiff was the owner of a patent for clinical thermometers, and he sought an interim injunction to restrain the defendant from committing what was alleged to be an infringement of the patent. Mr. Lever, for the defendant, gave the ordinary undertaking to keep an account, and it was arranged that there should be no order on the motion, except that the costs should be costs in the cause.

Mr. Justice Joyce sanctioned the arrangement, and gave liberty to apply to advance the trial.

BANKRUPTCY INTELLIGENCE.

Re **Samuel Hurman Longman**, 10, Fforchaman Road, Cwmaman, Aberdare, Glamorganshire, Chemist and Druggist.

In this bankruptcy the debtor estimates his deficiency at £148 odd. The debtor has lived at Fforchaman Road, Cwmaman, Aberdare, for three months, and before that he stayed at the Queen's Hotel, Aberdare, for a similar period. About three years ago he carried on business as a chemist at Highbridge, near Bridgwater. He ceased trading there when he made a deed of assignment for the benefit of his creditors. Since leaving Highbridge, he has been engaged as a chemists' assistant, and was for about six months or so in the employ of a chemist in Mill Street, Abercynon, Aberdare. The unsecured liabilities are made up as follows:—Amount due for business purposes, £36 11s. 4d., in respect of overdraft at bank and money borrowed, £56 16s. 6d.; in respect of alterations to premises, £26 10s.; fittings and a little furniture,

£20 19s. 6d.; printing and advertising, £7 6s. 10d.; for board and lodging at the Queen's Hotel, £8 15s.; for cab fares, etc., £5 5s. 6d.; for clothing, £2 10s.; to solicitor for professional services, £2 2s.; for gas supplied, 6s. 4d. Included in the trade fixtures returned in the foregoing summary at £17 10s. is the little furniture referred to. The debtor has made no profit at all on the business; in fact, as the deficiency account shows, he has lost considerably in comparison with the short period during which he traded.

POISONING CASES AND INQUESTS.

The deaths from poisoning reported in the seven days ended Wednesday, November 4, 1903, numbered fourteen:—

Poison.	Accident.	Suicide.
Carbolic Acid	2	1
Chlorodyne	—	1
Chloroform	1	—
Lead	3	—
Liniment of Chloroform and Aconite	—	1
Oxalic Acid	1	1
Paraffin	1	—
Salt of Lemon	—	1
Strychnine	1	—
Total	9	5

Carbolic Acid.—A woman at Kingston died from carbolic acid poisoning. She took the acid from a bottle which bore no poison label. The acid had been obtained from the local District Council, and the storekeeper of that body stated in evidence that it was not his usual custom to label bottles. The jury at the inquest, and the coroner, observed that there seemed to have been great laxity in the way carbolic acid was distributed by the District Council. Two other women, at Battersea and Blackpool respectively, also died from drinking carbolic acid.

Chlorodyne.—A woman at Plymouth committed suicide by taking chlorodyne. Deceased had two bottles labelled "chlorodyne," one of which it was stated contained no morphine.

Chloroform.—A child died under chloroform at Liscard.

Lead.—A painter died at Chichester from lead-poisoning, contracted in the course of his occupation. A Manchester grocer, who had been addicted to excessive beer drinking, died from lead-poisoning, caused by the fact that the beer was drawn from the barrel through a lead pipe. A man at Bristol died from lead-poisoning, there being no evidence to show the source.

Liniment of Chloroform and Aconite.—This was taken by a labourer at Accrington.

Oxalic Acid.—A man at Ashton-on-Mersey died from drinking a solution of oxalic acid in mistake for beer. The two liquids had been contained in bottles standing side by side. A man at Seacombe committed suicide by taking oxalic acid.

Paraffin.—At Lincoln, a child, less than two years old, drank a quantity of paraffin, and died from the effects.

Salt of Lemon.—A woman at Aigburth committed suicide by taking salt of lemon.

Strychnine.—A young child at Armagh ate a quantity of rat-poison which contained strychnine.

Attempted Suicides.—Laudanum (2), sugar of lead, and an infusion of matches were used in unsuccessful attempts at suicide

NOTES ON ESSENTIAL OILS.*

Absinthe.—A sample of this oil examined by us during the year proved to have a deep green colour, due to chlorophyll, and to show chemical characteristics proving the presence of petroleum spirit. The specific gravity of the oil was 0·825, it began to distil at 100° C., and the 13 per cent. distilling below 163° C. had a density of 0·780. Another sample of the same oil had a specific gravity of 0·915 with the same intense green colour. From this it appears evident that the samples in question were both prepared by treating the herb with solvents, and that in the case of the former sample the solvent spirit used had not been by any means all removed.

Aniseed.—Two samples examined showed specific gravities of 0·979 and 0·982 respectively, with solidifying points of 12° and 13° C. The melting point of the latter sample proved to be 17° C.

Bergamot.—Five samples examined during the year proved to have specific gravities varying from 0·878 to 0·885. The percentage of linalyl-acetate ranged from 23·8 to 40·2, and the non-volatile residue from 4·75 to 6·2 per cent.

Cajuput.—Twelve samples showed specific gravities ranging from 0·918 to 0·923, and the whole gave satisfactory results with the cineol test.

Caraway.—A sample of foreign oil examined during the year at a specific gravity of 0·847, and yielded only 3 per cent. of distillate above 200° C., proving it to be more or less decarvonised oil.

Cloves.—Five samples examined during the year showed specific gravities ranging from 1·050 to 1·052, and percentages of eugenol ranging from 86 to 90 per cent.

Cascarilla.—A sample of this oil prepared in our own works during the year proved to have a specific gravity of 0·942.

Cardamoms.—A sample of cardamom oil obtained by the distillation of the fruits in our own laboratory gave us an oil having a specific gravity of 0·9373. We found that it required 15·41 per cent. of KOH for saponification, and it proved to be soluble in four times its volume of absolute alcohol.

Cassia.—Three samples of this oil examined during the year showed specific gravities of 1·061, 1·062, and 1·065 respectively, and gave percentages of cinnamic aldehyde as follow:—72·7 73·6, and 73·0.

Cinnamon.—Two samples of foreign oil examined proved to have 26 and 36 per cent. only of cinnamic aldehyde, while a sample of English oil with a specific gravity of 1·034 showed 84·2 per cent. of the important ingredient.

Eucalyptus.—An examination of eighteen samples of phellandrene-free oil gave specific gravities ranging from 0·916 to 0·923, and rotation figures between −5° 45′ and +5° 15′. All the samples satisfied the cineol test.

Copaiba.—Four samples of this oil prepared in our own works showed specific gravities ranging from 0·910 to 0·914, and rotation figures of from −24° to −31° in a 100 Mm. tube. We have not so far met with genuine oil giving a rotation figure lower than the first named. It is somewhat remarkable that the Pharmacopœia, although under copaiba giving limits for rotation figures, makes no mention of these under Oleum Copaibæ, confining itself to the remark that the latter rotates the polarised ray to the left.

Gaultheria.—Two samples examined during the year showed specific gravities of 1·166 and 1·187, with corresponding methyl salicylate percentages of 92·3 and 98 respectively. The boiling point of the samples proved to be 216° and 219° C. respectively. The specific gravity of methyl salicylate obtained by synthetic means is 1·186, and no doubt much of the so-called gaultheria oil of commerce consists of this compound.

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* From the eleventh annual laboratory report of Messrs. Southall Bros. and Barclay, Limited.

VETERINARY NOTES.

BY A VETERINARY SURGEON.

Gripes and Gripe Medicines.

Many horse-keepers deem themselves in possession of an infallible recipe for a gripe "drink," because they are not aware of the many causes of abdominal pain which give rise to the symptoms generically called "gripes," and in some districts known as fret, and in more polite language as colic.

Chief among the causes which give rise to abdominal pain is indigestion, and the latter, as every reader is aware, is a hydra-headed monster, to be fought with a variety of weapons in different individuals.

Veterinary surgeons recognise two chief forms of colic, or gripes, although there are so many that a book entitled 'The Colics of the Horse' has been devoted entirely to the subject. Spasmodic colic is that in which some portion of the intestines is thrown into spasm; the muscular coat violently contracts, and the animal suffers very acute pain.

Flatulent colic is distinguished by the disposition to tympany, or the distension of the abdomen by elimination of gases from the contents of the intestinal canal.

The visitor to the pharmacy in quest of a gripe drink will very likely have taken no accurate observations, and be unable to answer the question, if asked, as to the flank being blown up or otherwise; he has only recognised colic by the evident pain the animal suffers, as shown by pawing and scraping the ground, striking at his belly with the hind feet, looking round at the flanks, blowing, casting himself upon the ground, rolling, getting up, only to roll again when he finds no relief from a recumbent attitude. The anxious inquirer after a remedy, if questioned, will more than possibly mislead the prescriber by saying that the bowels have acted freely, while they are in need—immediate need—of an aperient. This comes of the commonly observed fact that during the initial stages of colic the rectum is unloaded. Two or three evacuations take place quickly after one another, from nervous excitement and pain, but the whole amount of fæces passed is but small, and impaction of the large bowel may be present all the while. The cork has merely been removed, and the hardened contents remain for want of sufficient impetus to expel them.

Horses stabled all the year round, and more especially in winter, when a bundle of green meat never finds its way into the building, are more likely to suffer from spasmodic colic and impaction, while the flatulent variety is to be looked for chiefly among the animals owned by farmers and others who keep their horses on grass, or cut rye, vetches, and other green foods during summer.

The veterinarian will treat flatulent colic somewhat differently from spasmodic if called in to the animal, but he, like the pharmacist when called upon for a drink, will endeavour to supply a dose containing as many advantages as can be afforded in one draught. If in a country district, he may pretty safely assume that an aperient will be in the nature of an insurance policy, for it is a fact that farmers' horses are made to eat the forage which is not good enough to sell, and will often have some fermenting or else hardened indigestible fibre to be expelled before the cause of colic can be removed. It should also be borne in mind that the grass or cut green meat, which at first relaxes the bowels, soon establishes such a resistance to laxatives that the dose of aloes is quite as safe, if not more so, for the green fed as for the dry fed. Although, on theoretical grounds, aperients have been objected to, the most successful practitioners generally employ some purgative in their "stock" gripe drinks. Half-an-ounce of aloes Barb in solution will be moving on some obstruction, while the usual anti-spasmodics are given in repeated doses if the case does not at first yeld to treatment. Many a horse is lost for want of the aperient in the first dose, and it is no bad plan to send down a 5-drachm physic ball first. Our colic draught must contain an anodyne to relieve the immediate distress, and of these we have a choice. No better, perhaps, can be chosen than tinct. morphinæ et chloroformi co., and as a safe dose for medium-sized animals 4 drachms, or six for a draught horse. As an antispasmodic and diffusible stimulant we have few better remedies than spt. æther. nit., and of this we may give bold doses, as 1 to 2 oz. Ammoniacal stimulants will better serve us where there is tympany from flatulence, but we must in such case use aqua only as our diluent. If we use the spt. ætheris nit. we may add ol. lini, ℥viij., or ℥x., and have in it a valuable agent for masking intestinal gases, which largely consist of CO_2 and H_2S; indeed, many cases of purely flatulent colic yield to a pint dose of ol. lini. We may here suggest a few formulæ, one for spasmodic colic, another for flatulent, and a general stock "drink" for all comers:—

℞	Aloes barb.	ʒiv.
	Tinct. chlorof. et morphinæ co.	ʒiv.
	Spiritus etheris nit.	℥iss.
	Aqua menthæ pip. ad	℥xii.

M. ft. Haust.

Pharmacists will see the necessity of a "shake-the-bottle" label, as some resinous sediment is unavoidable.*

℞	Spt ammon. co.	ʒvi.
	Æther	ʒv.
	Tinct. opii	℥i.
	Aqua anethi ad	℥xii.

M. ft. Haust.

℞	Tinct. chlorof. et morph. co.	ʒiv.
	Es. menthæ pip.	℥i.
	Ol. tereb.	℥ies.
	Ol. lini ad	℥xv.

M. ft. Haust.

Distinctive colourings and "nosings" are convenient in many ways.

Full advantage should be taken of the fact that medicines for animals are not subject to stamp duty, and a good label giving a few directions for management of the patient and auxiliary treatment will be appreciated by the purchaser, who is inclined to think more highly of good advice which does not lead up to a recommendation of repeated doses. The following gripe label on a mixture containing two doses has found appreciation:—

GRIPE MIXTURE.

For FRET, COLIC, FLATULENCE, &c.

This remedy has proved most efficacious during twenty years' practice by the maker, often saving valuable lives and the attendance of a Veterinary Surgeon. If relief is not obtained in one hour a second dose should be given, and the services of a duly qualified practitioner procured, as no ordinary case of Colic, Fret, or Gripes will fail to be cured by its prompt administration. Back raking with the hand (previously oiled) and an enema of soap and water should be given in all cases. Hand rubbing and kneading of the belly with the knuckles helps to remove pain when Colic arises from impaction of the bowels.

Dose.—Half the bottle full well shaken and mixed with a half pint of Linseed Oil, Beer, or Cider.

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* A good formula for liquor aloes is needed. Perhaps some reader will supply one?

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

Manchester Pharmaceutical Association.—At a meeting of this Association, to be held on Wednesday, November 11, Mr. William Kirkby will deliver a lecture on "Old Manchester Pharmacies," which will be illustrated by limelight views.

Brighton Association of Pharmacy.—An extraordinary meeting of this Association will be held on Thursday next, November 12, at 9 p.m., at the Aerated Bread Co., 58, King's Road. All chemists, whether members or not, are cordially invited to attend.

Liquorice Works Destroyed by Fire.—On the morning of Tuesday, the 3rd inst., the Horsefair Liquorice Refinery, Pontefract, was entirely destroyed by fire. The cause of the fire is quite a mystery. Fortunately, the whole of the damage is covered by insurance.

Robbed by an Errand-Boy.—At Prescot Police Court, on Tuesday, the 3rd inst., an errand-boy was charged with stealing sixteen bottles of scent from Mr. F. J. Parker, chemist, Derby Road, Huyton. The boy was bound over to come up for judgment if called upon.

L.C.C. Dispensers.—The dispensers in the employ of the London County Council at the various asylums in the county intend to ask that they may be called "dispensing chemists" instead of "dispensers," and that they may rank as first-class officers of the Council instead of as second-class officers as at present. It is hoped that Mr. Idris, L.C.C., President of the Public Dispensers' Association, will move in the matter.

The Storage of Gunpowder.—At the Manchester City Police Court, on the 29th ult., Henry Clinton, the manager of a drug store in Every Street, Ancoats, was fined 5s. and costs for having 3½ lb. of loose gunpowder on his premises without being registered.

Metropolitan College of Pharmacy.—The tenth annual dinner of the past and present students of the Metropolitan College of Pharmacy is arranged to take place on Saturday, November 28, in the King's Hall, Holborn Restaurant, when Sir William Ramsay, K.C.B., F.R.S., Professor of Chemistry, University College, will preside, and distribute the medals to the successful candidates.

Contradictory Analytical Reports.—A Truro dairyman was charged on Saturday with supplying milk which, according to the county analyst's certificate, was said to contain 10 per cent. of added water. Evidence for the defence stated that the butter fats were so high that the actual value was greater than the Board of Agriculture requirements. The superintendent of the police said the third bottle could not be forwarded to Somerset House, as it had been broken. The case was adjourned for an explanation of the two certificates.

Hull Drug-Store Keeper Fined.—In the Hull Police Court, on Tuesday, the 3rd inst., J. W. Sales and his wife, of the Infirmary Drug Stores, Hull, were charged with various offences under the Infant Life Protection Act, 1897. Defendants had advertised in a Leeds newspaper stating that a chemist and his wife wished to adopt a child. Several children were received, but no notice was given to the local authority, as required by the Act. The male defendant, who is not a registered chemist and druggist, admitted that he had received £90 in ten months. Each defendant was fined £5 and costs.

Fire at a Greenock Chemist's.—An explosion of a bottle containing chemicals caused an alarming fire on the premises of Messrs. Cockburn and Co., chemists, Cathcart Street, Greenock, on October 27. The outbreak took place in the back portion of the premises, and was so sudden that an assistant who was at work was somewhat badly burned. With his clothes ablaze he ran into the street, when a number of men took off their coats and smothered the flames. The roof of the shop also caught fire, and for some time the situation seemed alarming, but with a plentiful supply of water the brigade soon obtained the mastery. The damage to stock and property is estimated at about £800.

The "Tabloid" Legal Case.—The action brought by Messrs. Burroughs Wellcome and Co. against Messrs. Thompson and Capper, for an alleged sale of certain tablets not of plaintiffs' manufacture, as "tabloids," is expected to come before one of His Majesty's judges in the Chancery Division next Monday. A claim by Messrs. Thompson and Capper to have the word "tabloid" expunged from the Register of Trade-Marks will also be heard. Several well-known pharmacists are expected to appear as witnesses on one side or the other, and a protracted hearing may be looked for. A great many counsel of distinction have been briefed.

"Truth" on Medicine Stamps.—The editor of *Truth*, commenting on the decision of the Inland Revenue authorities, which was announced last week in the *Pharmaceutical Journal*, with regard to labels bearing the name of an organ, or part, of the body, states that this latest decision as an example of official ineptitude is hard to beat. "The laws dealing with the whole matter are in a hopelessly chaotic condition, and, pending their alteration, the most sensible course for the Board of Inland Revenue to take would be to return to their old procedure, which recognised that a preparation might bear a distinguishing name without necessarily being liable to the duty."

The Sale of Sheep-dip.—The withdrawal of Messrs. Alexander Cross and Sons' appeal in the ant-destroyer case, and the strong opposition offered by the Council of the British Medical Association to the Majority Report of the Committe on Poisons will probably have a discouraging effect on those persons in Ireland who are carrying on the agitation in favour of free trade in poisonous sheep-dips. According to inspired notices in the Irish lay press, the matter is being warmly taken up in the counties of Galway and Roscommon and other sheep-rearing centres. It has also been under the consideration of the Irish Cattle Traders' Association, which suggests that the Vice-President of the Agricultural Department should arrange to have an Order in Council passed to enable others than chemists to sell poisonous sheep-dips. Perhaps!

Workhouse Drugs.—At the meeting of the Alverstone Board of Guardians, on October 28, a letter was read from the Local Government Board, expressing surprise at the action of the guardians with reference to the supply of drugs. It appeared that the medical officer receives a salary of £50 a year, and of this £40 is spent for drugs. As the medical officer had not moved in the matter, no action was taken. The Melton Mowbray Board of Guardians on October 29 discussed a proposal that the Board should in future provide all expensive drugs and medicines needed by the medical officers, in acordance with the recommendation of the Local Government Board, and that the medicines should be dispensed at the workhouse by medical men only. Several members objected to the guardians providing drugs and medicines, and argued that it was the duty of the medical officers to do so. The proposal was negatived.

Touting Extraordinary.—The *British Medical Journal* has been informed of a remarkable instance of touting. A patient received a letter signed, but not containing the full address of the writer, who states that, by request of a friend, she forwards a prescription which quite cured her of gout and rheumatism after fifteen years of awful agony; adding that she had to take eleven bottles only! The writer explains that she does not give her full address as she does not wish to be thanked, but volunteers the information that any good chemist or large drug stores will make the prescription up. Finally, she appeals to the recipient, when it has done good, to "spread it far and wide by writing letters like this, and sending copies to sufferers; the chemist will always make copies (of the prescription) to give away." The prescription is written on a half-sheet of note paper, and signed with initials of unknown quality and quantity. At first sight the benevolence of the sender seemed to be quite pure and unalloyed by any taint of commercialism, but a second glance revealed the fact that one of the ingredients directed to be dispensed in making up the prescription was a proprietary medicine.

The Study of Horticulture in Essex.—New Technical County Laboratories were opened at Chelmsford, on October 30, by the Right Hon. the Earl of Onslow, President of the Board of Agriculture. The building has been erected at a cost of nearly £12,000, and will accommodate about a hundred and fifty students. The Chemical Laboratory is furnished with fittings of the most modern construction and design, and will accommodate twenty students at one time. Attached to it are balance, analysis, and preparation rooms. This department, in which the analysis of soils and manures is taught, is under the direction of Mr. T. S. Dymond, F.I.C. In the Biological Laboratory the diseases of plants and animals, and the influences which affect their life history are studied under the direction of Mr. E. C. Horrell, F.L.S., whose name, like that of Mr. Dymond, is well known to pharmaceutical students, both of these gentlemen having formerly acted as demonstrators in the School of Pharmacy, at Bloomsbury Square. The Laboratory is already showing signs of activity, Mr. F. J. Chittenden having only recently recorded the occurrence of a remarkable fungus new to Britain, which occurred on an old apple tree at Malden. The fungus bursts through the bark in a long strip extending three or four feet in an irregular mass of a nodular character, the nodules producing long spines, and the whole plant being of an ochre-yellow or flesh colour. It is named ***Hydnum schiedermayeri***. It is figured in Massie's 'Plant Diseases' (Fig. 39), and is stated to be very destructive to apple trees, the spores usually entering through a fissure in the bark and developing rapidly. Mr. Chittenden has also detected and described a new fungus on the garden *Clematis*, *C. jackmanni*, which he has named *Ovularia clematidis*, Chitt. It forms white, nearly circular patches on the petals. An illustrated description of the plant is given in the *Gardener's Chronicle*, **34**, 299. The laboratories are intended to be a centre for agricultural and horticultural information for the whole country. The attendance at the opening ceremony was a large and influential one, Lord Rayleigh, Dr. Hill, and many well-known scientists being present.

PERSONALITIES, BUSINESS CHANGES, ETC.

Bro. Oswald A. Reade, pharmaceutical chemist, has been installed as Worshipful Master of Lodge 1705, Gosport.

Mr. James Mackenzie, of Edinburgh, has been placed on the Commission of the Peace for the County of the City of Edinburgh.

Mr. R. A. Robinson has purchased the business of Mr. D. R. Harris, 30, King Street, St. James's, W., and late of St. James's Street.

Mr. Humphrey Davy, chemist and druggist, of Rotherham, has purchased the business of Mr. Fredk. Mason, of 30, High Street, Rotherham.

Mr. William McCarthy, L.P.S.I., Dublin, has accepted the invitation of the inhabitants of Clontarf to go forward to the City Corporation as Councillor of the West Ward.

Mr. E. H. Storey, of the firm of Bird and Storey, chemists, has been returned unopposed as a Councillor for the Cavendish Ward of the St. Marylebone Borough Council, after three years' service on the old Council and nine years on the late Marylebone Vestry.

Mr. James S. Ashe, L.P.S.I., Dublin, has successfully completed the third professional examination of the Royal College of Surgeons in Ireland, and is exchanging pharmacy for medicine. Dr. Ashe has for a short time past been attached to the medical staff of the Adelaide Hospital, Dublin.

Mr. A. Colston, assistant to Mr. G. W. Bullen, chemist and druggist, of Market Street, Ashby-de-la-Zouche, met with a painful accident last week. Whilst heating a preparation the liquid boiled over and ignited, and in putting out the flames, Mr. Colston was badly burnt about the face and hands.

Mr. H. Fogelstrom Bartlett, I.S.O., has been appointed Controller of Stamps and Registrar of Joint Stock Companies, in succession to Mr. E. Cleave, who has retired. Consequent upon Mr. Bartlett's promotion, the Board of Inland Revenue has appointed Mr. F. Atterbury to be an Assistant Secretary of Stamps and Taxes.

The Town and Borough Council Elections.—The following gentlemen have been elected:—Mr. Jas. Kirkpatrick, Taunton; Mr. W. B. Allison, Stoke-on-Trent; Mr. Smith Ward, Batley; Mr. R. W. Walden, Westminster City Council; Mr. W. T. W. Idris, St. Pancras Borough Council; Mr. John Laurie, Blackpool; Mr. Jefferson Dodd, St. Pancras; Mr. James Bisset, Burntisland; Mr. Page Woodcock, Lincoln. Mr. J. M. Furness, chemist and druggist, Sheffield, has been nominated for a casual vacancy which has occurred on the Sheffield Town Council.

SCHOOL AND COLLEGE NEWS.

School of Pharmacy.—The lady students of the School of Pharmacy are now in occupation of the comfortable common-room kindly provided for them by the Council, and it is needless to say how thoroughly the new quarters are appreciated, especially by those students who have been long enough at the School to have experienced the need in this direction. They feel that special thanks are due to the President, to

Mr. Carteighe and the Professors, for their thought and trouble in obtaining and furnishing such a pleasant room.

Pharmaceutical Football and Athletic Club.—Square *v.* Old Externes.—This match was played last Saturday under rather unfavourable circumstances, the ground being still very wet and heavy from the rain of the last few weeks. Both teams played a fast and spirited game throughout, and though each had several narrow escapes, no goal was scored against either before the match came to a sudden end through the collapse of the ball.

Inter-Pharmacy League.—The Westminster College Eleven played the first match in the above League with Muter's, on Saturday, October 31, at Acton. Considering the state of the weather and ground, some really good football was seen. Half-time arrived with a clean sheet. On restarting, the Westminsters played uphill, and Golding, with a beautiful shot, soon found the net. A few minutes afterwards, Bratley notched number two. Towards the closing stages of the game, Muter's made great efforts to equalise, but were unable to penetrate the sound defence of Westminster, who were left winners of a well contested game by two goals to nil.

Football.—Metropolitan College of Pharmacy *v.* Kensington Rangers' Reserves.—This match was played at Shepherd's Bush on Saturday last, and resulted in a one-sided game, "Metros." winning by 7 to nil. The Metros. were down to play the London Devonians' Reserves, but they scratched, and a match was arranged during the week with the above. The Rangers are old opponents of the College team, and a good game was anticipated, but the heavy ground put good fast football out of the question. However, the "Metros.," adapting themselves quickly to the conditions, were seen to great advantage, and won as stated.

PARIS NEWS.

British Pharmacists Meet.—Several members of the Society of British Pharmacists of Paris responded on Monday to an invitation to a farewell supper offered by Mr. Fred Boss, of the Pharmacie Roberts. Amongst those present were Messrs. J. Green, E. Chatburn, Bound, Le Bosquet, Perret, Rawlins, Stevenson, Rouse, T. Adamson,.Spofforth, and R. E. Lloyd. Mr Boss is shortly to leave Paris, having concluded negotiations for the purchase of the pharmacy in which he was apprenticed, at Crouch End, London. During the evening Messrs. Green, Chatburn, Rawlins, and others, in very appropriate terms, expressed the regret which all assembled felt at his approaching departure from their midst. This occasion was equally taken advantage of to present a silver Cafetiére Russe of new design to Mr. Rouse (also a parting assistant, and who is about to be married. In a few brief but trite sentences Mr. Rouse thanked his friends. The final toast, which was proposed by Mr. Boss, "To the Pharmaceutical Society of Great Britain," was received with loud applause.

Banquet to Dr. Riviere.—A most brilliant Anglo-French gathering of distinguished medical men took place on Wednesday, October 28, at the Hôtel du Palais d'Orsay, the occasion being a banquet given in honour of Dr. J. Rivière, the celebrated authority on physico-therapeutics. The banquet, which was attended by about 150 of his medical friends and admirers, was presided over by Dr. Lancereaux, President of the Academy of Medicine. The after-dinner speeches were numerous and distinctly flattering to the hero of the hour. Dr. Lancereaux and others waxed eloquent over the success achieved by their guest in the application of electricity to disease. Dr. Cogrel contributed his quota to the speeches. Dr. Rivière, who was evidently affected by these complimentary references to himself and his work, thanked his hosts in his customary charming manner.

PHOTOGRAPHIC NOTES.

BY A PHARMACIST-PHOTOGRAPHER.

Colour Photography.

The *Daily News* reports that an important invention in connection with colour photography, discovered by Captain Lascelles Davidson (of Brighton), will be exhibited at the Brighton Inventions Exhibition, to be held in November. He claims that by his invention an operator with one exposure can produce triple negatives, thereby doing away with the present system of having to make three separate exposures. The apparatus is very simple in construction, and can be adjusted to any camera. Captain Davidson is well-known as an inventor in connection with colour photography, and has brought out (in conjunction with Dr. Juneaux) several important inventions, which, when put on the market, will enable the ordinary amateur photographer to take pictures in colours.

About Photographic Shutters

is the title of an interesting article in the 'Bromide Monthly,' issued by the Rotary Photographic Co., Limited, in the course of which the writer alludes to the difference in the required speed of shutter when lenses of greater focal length are employed upon larger plates—a matter which is frequently lost sight of. "It may be of interest to draw the attention to the relation existing between focal length and shutter speed. Though the close relationship between these two points may not be apparent at the first glance, it will certainly become so, when we consider that the focal length of lenses is directly proportionate to the size of the images, and, again, that the size of the images bears the same proportion to the size of the objects as the speed of the image bears to the speed of the object. The image of a moving trolley-car, for instance, when photographed with a ten-inch lens on a 5 × 7 plate will move over the plate just twice as fast as the image of that same car moves over a $3\frac{1}{4} \times 4\frac{1}{4}$ plate when projected by a lens of five-inch focus (assuming that the two cameras are set up at an equal distance from the track). This makes it clear that for equal sharpness we may expose the small plate just twice as long as the big plate. Thus, if 1/50 of a second would produce the desired result with the five-inch lens, we cannot give more than 1/100 of a second when operating with the ten-inch lens without losing sharpness of definition. This consideration leads to very important deductions. The ten-inch lens working of necessity with twice the shutter speed of the five-inch lens must be used with a diaphragm of twice the relative area (say U.S. 16 for the five-inch and U.S. 8 for the ten-inch lens) in order to produce an equally well-exposed plate."

Crayons for Marking Glass.

Spermaceti, 4; tallow, 3; beeswax, 2; animal black, in fine powder, 6; pearlashes, 1. Melt the tallow, wax, and spermaceti, and stir in, a little at a time, the bone black and pearlashes, previously mixed. Stir until nearly set, then run into suitable moulds. These may be made of glass tubing of suitable length and diameter. Any other colour may be made by substituting any insoluble pigment, in finest powder, for the black. —*Drugg. Circ.*, **46**, 234.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

General Markets.

London, Thursday, November 5, 1903.

The volume of business transacted during the week has not been by any means large. What transactions have been made were mainly of a speculative nature, the demand for consumption being small. The most important change is the drop in the price of Cocaine, which article is 2s. per oz. lower; the prohibition regulations in Bengal and in some of the American States may account in some measure for this, the second reduction. On the receipt of the October figures of Bark shipments the price of Quinine was lower, but this was only momentary, and the market recovered in a striking manner. Menthol has been in a somewhat curious predicament; fairly high prices have been paid for early shipment, due to the efforts of people who have sold short to cover. Present spot prices are given below. Peppermint Oil fluctuated at the beginning of the week, and the market closes at a figure lower than that quoted in the last report. Podophyllum root is very dear. Opium and its alkaloids are quiet and unchanged. Shellac is still rising, and for Cod Liver Oil the same high prices are asked. Opium, Codeine, and Morphine are all quiet, and the prices are unaltered.

ACID CITRIC.—1s. 0½d. per lb

ACID TARTARIC.—English on the spot, 1s 1d.; foreign, 1s. 0d. to 1s. 0½d.

ALUM.—Lump, £5 12s. 6d.; powder, £6 2s. 6d.

ARROWROOT.—Good manufacturing St. Vincent sold at Wednesday's sales at 2d.

BAYBERRY BARK—Is very scarce, and to-day's price from New York is equal to 8d. c.i.f.

BISMUTH CARBONATE.—8s. 1d. per lb.; subnitrate, 7s. 4d.

BLEACHING POWDER.—English, £5 2s. 6d.

BORACIC ACID.—Crystals, 22s. 6d.; powder, 24s. 6d.

BORAX.—Crystals, 13s. 6d. to 14s. 6d. per cwt., according to quantity; powder, 15s. 6d. to 16s. 6d.

BROMIDES.—Potassium Bromide is quoted at 1s. 11½d. per lb.

CANNABIS INDICA.—Business has been done at 3s. 3d.

CARBOLIC ACID—Is firmer. Crystals, 39°-40°, 5d.

CASCARA SAGRADA.—Old Bark has been sold at 85s., but it is questionable whether any more could be obtained at that price. Recent arrivals of new crop can be had for less.

CASTOR OIL.—Quiet. Belgian 1sts, £20 2s. 6d.; 2nds, £18 12s. 6d.

CLOVES.—At the Spice Sales on Wednesday fair to good fair Zanzibar were bought in at 7⅝d. to 7¾d. Penang picked were held at 1s.

COCAINE—Has dropped 2s. per oz., and the price for the hydrochloride is now 13s. 6d. to 14s., according to quantity. For the pure alkaloid the price is 16s. to 16s. 6d.

COCOANUT OIL.—Ceylon spot, £25 10s.; Cochin spot, £31.

CODEINE.—9s. 5d. per oz. for the pure alkaloid.

COD-LIVER OIL.—No change and little business.

CINCHONA BARK.—The shipments at Java during the month of October last were 2,000,000 Amsterdam lbs., against 1,680,000 Amsterdam lbs. during the corresponding period last year. The total for the ten months is 11,298,000 Amsterdam lbs., against 10,912,000 Amsterdam lbs. in 1902.

ERGOT OF RYE—Is flat. The price in Spain is 1s. 8½d.; the same is quoted here.

GINGER.—The offerings at Wednesday's sales were small, and the demand was less. The 128 packages of Cochin were bought in.

GLYCERIN.—68s. per cwt. for ½-ton lots.

IODIDE OF POTASSIUM.—Unchanged at 8s. 9d. per lb.

IODINE.—9s. 9d. to 10s. per lb. for the resublimed, according to quantity.

IODOFORM.—11s. 8d. per lb. for the pure crystals or powder.

IPECACUANHA.—6s. to 6s. 3d., according to broker, are the prices asked for Rio.

LINSEED OIL.—London spot pipes £17 10s.; barrels, £17 15s.

MENTHOL—Is firm on the spot, but there is very little here. 23s. to 25s., according to holder, are the prices.

MERCURIALS.—Calomel, 2s. 8d.; corrosive sublimate, 2s. 4d.; red precipitate, 2s. 11d.; white precipitate, 2s. 11½d.; mercuric sulphate, 2s. 4d. per lb.

MORPHINE.—4s. 6d. to 4s. 8d. for the hydrochloride.

NUTMEGS.—West Indians sold on Wednesday as follows:—63's at 2s. 8d., 72's at 2s. to 2s. 2d., 80's at 1s. 11d., 100's at 1s. 2d.

OLIVE OIL.—Mogador, £32.

OXALIC ACID.—2⅝d. to 2⅞d., delivered free London.

PALM OIL.—Lagos on the spot £28 5s.

PEPPERMINT OIL.—There is very little doing from first hands. Nominal price 12s. for Wayne County and 14s. 6d. H.G.H.

PODOPHYLLIN.—Strictly B.P. is quoted at 10s. 6d. per lb. for quantities.

PODOPHYLLUM ROOT.—There is still a little from New York, at about 42s. 6d., c.i.f. In other quarters it is stated that America is buying back the root at this price.

QUICKSILVER—£8 7s. 6d.

QUININE.—In spite of the large shipments of Bark advised from Java for the month of October, the market after the first shock recovered in a manner which must be regarded as striking. 1s. 0¾d. has again been paid for B&S or Brunswick Sulphate for December delivery, and 1s. 1d. for March. Makers' price of these brands remains unchanged.

SAFFRON.—No change since last week.

SUGAR OF MILK.—The official price is 55s., and very little to be had at that.

STAR ANISE OIL.—4s. 4½d. to 4s. 6d. is now quoted. Business has been done at former price.

TINNEVELLY SENNA—Has been in good inquiry since the sales; only about 300 bales will be offered at next auctions.

EAST INDIA ROOT.—Under this description several bales of a spurious ipecacuanha were offered at last week's auction, but no bid was made for them. A sample has been submitted to Mr. E. M. Holmes, who gives the following particulars:—"The root resembles ipecacuanha in its annulated surface, but has no woody axis or column, showing instead the structure of a monocotyledonous root. It is the same root, or rather rhizome, that was offered in 1888 (*Pharm. Journ.* [**3**], xviii., 628), and in 1893, and sold at about 5d. per lb.; apparently it was subsequently sold in France. It has been referred to *Cryptocoryne spiralis*, and also to *Lagenandia lancifolia*, both araceous plants; but it has not definitely been proved that it is the product of either. The previous shipment consisted of 7 bags of 1¾ cwt. each, and came from Tuticorin viâ Bombay. A notice of its character was given in the 'Year-Book of Pharmacy,' 1893, p. 407, and a chemical examination of it made by Mr. R. A. Cripps, in 1893. He found in it an alkaloid mucilage, a reducing sugar starch, and acicular raphides (*Pharm. Journ.* [**3**], xxiv., 399). It is well known in Ceylon, where it is used by the native doctors in decoctions as a remedy for infantile vomiting and cough. The Singhalese obtain the drug from India."

PATENTS AND TRADE MARKS.*

New Complete Patent Applications.

IMPROVEMENTS IN OR PERTAINING TO CATALYSIS (No. 24,256 of 1902).—V. Hölbling, 15, Dittesgasse, Vienna, and H. Ditz, 26, Frohlichergasse, Brunn, Austria. Relates to the provision of a substitute for platinum to be used as a catalysing agent in the manufacture of sulphuric anhydride. The said substitute contact material is manufactured by heating the mixture of oxalates or other compounds of rare earths, such as cerium, lanthanum, neodymium, praseodymium, yttrium, thorium, etc., resulting from the manufacture of thorium compounds, with sulphuric acid, and then heating the resultant sulphates at a temperature of 300-600° C. The use of the porous mass thus obtained as a contact material for sulphur dioxide and oxygen or air in the manufacture of sulphuric anhydride will yield results equal to those where platinum is used as a catalysing agent.

MANUFACTURE AND PRODUCTION OF NEW SENSITIVE PHOTOGRAPHIC EMULSIONS (No. 25,821 of 1902).—H. E. Newton, 6, Bream's Buildings, Chancery Lane, London. (Communicated by the Farbenfabriken vormals, F. Bayer and Co., Elberfeld, Germany.) This process consists in mixing photographic sensitive substances with such acetylized derivatives of cellulose as are soluble in alcohol, with or without the addition of other suitable compounds, whereby new photographic sensitive emulsions are produced which have several advantages over those at present in use.

IMPROVED FINGER-STALL OR POKE (No. 18,936 of 1903).—W. J. Teufel, 51, Neckarstrasse, Stuttgart, Germany. In this invention the finger-stall is attached to a longitudinal band which is led through a sliding buckle in such a manner as to turn at right angles after passing through the slot in said sliding buckle, and thus forms a part of the wrist piece. Said band, which is made of elastic material, can be made longer or shorter by means of a doubled piece at its end, which is connected to a buckle and ring. Said ring has a short piece of elastic material fixed at the opposite side, to which is attached a spring button. The other half of the wrist piece is fixed to the sliding buckle first mentioned, and has the usual receptacle for the spring button above referred to, by means of which the wrist piece is fastened.

Note.—Opposition to the grant of any of the above-mentioned patents must be filed at the Patent Office, on or before December 14, 1903.

New Trade Mark Applications.

"**TRICO,**" for chemical substances used in manufactures and philosophical research and anti-corrosives, by J. H. B. Denison, 53, Regent Street, Kingston-on-Hull. 256,073.

DEVICE REPRESENTING TIME, for chloride of magnesium, by H. B. Dresser, 20, Bixteth Street, Liverpool. 257,012.

DEVICE REPRESENTING JOHN BULL, for chemical substances used in manufactures, photography, and philosophical research and anti-corrosives, by Rolls and Linoms, Limited, 334, St. James's Road, Old Kent Road, S.E. 257,154.

"**FLAVANTHRENE**" ("Flav" disclaimed), 257,617, and "**CYANANTHROL**" ("Cyan" disclaimed), 257,619, both for chemical substances used in manufactures, photography, and philosophical research and anti-corrosives, by Badische Anilin and Soda Fabrik, Friesenheimerstrasse, Ludwigshapen-on-the Rhine, Germany.

"**AMPOPHOS**" and "**NIPHOSPO**" (257,428-9), for chemical substances used for agricultural and horticultural purposes, and "**TANO**" ("Tan" disclaimed), for chemical substances used for agricultural, horticultural, and veterinary purposes, by Wednesfield Chemical Syndicate, Limited, Rookery Street, Wednesfield, Staffs. 257,453.

DEVICE OF CAT SCRATCHING DRUM, ETC., for chemical substances prepared for use in medicine and pharmacy, for use for the treatment of scratches and other wounds, by J. E. Garratt, 124, Southwark Street, S.E. 257,212.

(Signature) "**J. MCLANACHAN,**" for medicinal preparations for human use, by J. McLanachan, 231, High Street, Lewisham, S.E. 257,072.

"**QUAKERETTE,**" for medicine for human use, by F. A. Wild, 19, Willington Street, Stockton-on-Tees. 257,253.

"**GELATOIDS**" and "**BIGELATOIDS,**" for chemical substances for use in medicine and pharmacy, by S. Wand, 12, Haymarket, Leicester. 257,257-8.

"**HETRALIN**" ("Hetre" disclaimed), for a medicine for human use, by Möller and Linsert, 49-51, Grosse Reichenstrasse, Hamburg, Germany. 257,273.

"**RADUM,**" for spectacles, eye-glasses, and other optical instruments, by B. Green and Co., 53, Berners Street, W. 257,226.

"**PERLO**" ("Perl" disclaimed), for dentifrice and tooth powder, by Burgoyne, Burbidges, and Co., 12 and 16, Coleman Street, E.C. 257,058.

"**REGENATUR**" and shield device, etc. ("Regenatur" only claimed), for toilet requisites, by J. F. Hall, The Ashes, Hadlow, Tonbridge. 256,855.

"**MOUSSETTE**" label, for a liquid toilet soap (perfumed), by L. Fradin, 47, Knightsbridge, S.W. 257.160.

"**OHAO,**" for a toilet preparation for the hair, by E. Brand, 162, Uxbridge Road, W. 256,986.

"**WARNOL,**" for toilet requisites, by H. Engel, 10, Parson's Green Lane, Fulham, S.W. 257,553.

Note.—Opposition to the registration of any of the above-mentioned, trade marks must be filed at the Patent Office, on or before December 4, 1903.

COMPANY INTELLIGENCE.

Harvey-Turner Co., Limited.—Capital £10,000, in £1 shares. Objects: To adopt two agreements with Mather and Crowther, Limited, and to carry on the business of soap manufacturers, merchants and factors, manufacturers of and dealers in chemical, medicinal and toilet articles, chemists, druggists, drysalters, importers and manufacturers of and dealers in pharmaceutical, medicinal, chemical and other preparations, etc.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and Patent Notes for Inventors' free on application.

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

The Vitality of Seeds.

Mr. Walker's note (October 31, p. 648) on the vitality of henbane seeds recalls to my mind a statement made to me a few years ago by the late Mr. T. B. Groves, F.C.S. At Weymouth, a house on the parade that had been standing for about 100 years was pulled down, and the ground left vacant for a time. Next year the henbane grew luxuriantly amongst the soil which had been exposed by clearing the foundations. It is well known to growers of henbane that the seed, or a a part of it, will often remain dormant for a year or two if the conditions at the usual time of year for germination are not suitable, and the seed is protected from the action of fungi and not allowed to become dried; but such cases of retained vitality for 100 years are rarely brought under notice. The only possible source of error in the case just mentioned would be the droppings of birds: but these are not known to eat henbane seeds, and, if they did, the seeds are not likely to have escaped the grinding action of the gizzards of the birds.

London, November 2, 1903. E. M. Holmes.

Membership of the Pharmaceutical Society.

If there have been any registered chemists and druggists who have withheld their annual subscription to the Pharmaceutical Society on the fictitious grounds that they failed to see any practical benefits from such a procedure, this plea cannot now be substantiated, as the Society's untiring efforts (which have proved in the main so successful) to obtain various concessions, applicable to its members, in the future administration of the Medicine Stamp Duty Acts, show clearly that the Society is by no means in an impotent condition, but that it is very virile, and does look after the interests of its members to the best of its ability; therefore, let us hope, when the next notice in the Journal that "all subscriptions are now due" appears, there may be a great addition to the list of subscribers, thereby strengthening the Society in its "defensive" and "offensive" operations.

Hoylake, October 31, 1903. Geo. D. K. Clowes.

How human it is to look only upon one side of the shield! "An Ordinary Pharmacist" and Mr. Ingham may have the good fortune to possess first-rate dispensing businesses, and to them counter prescribing may seem a grave pharmaceutical sin; but they must also remember that a large proportion of the craft live in towns where all the doctors have their own dispensaries, and so never see a prescription from one week's end to another. To them counter prescribing and the sale of remedies that have achieved some little local fame are practically their only means of earning the wherewithal necessary to meet the demands of our present unnatural civilisation. I will admit that chemists are not needed in such towns, for the doctors' clubs cater for the poorer folk, and the grocer sells all the "patents" and packed goods that are needed; but, seeing that there are chemists who, maybe foolishly, have spent a decent sum in qualifying, and in buying or establishing a business in such evil places, in the name of humanity, let me ask your correspondents (for I am one of the poor devils), what are we to do? Starve, or, by fitting ourselves to the circumstances, earn a fairly honest shilling from the people who have faith in us? Until the present time the Pharmaceutical Society has seemed so far away, and so useless to us non-dispensing chemists, that personally I had very little leaning towards it; but the way it has gone about this I.R. business has considerably changed my opinion, and now, instead of sending my guinea most grudgingly, in future it will be a pleasure to pay my subscription. Mr. Ingham seems to forget that the recipes sent to the "P. J. F." are not freely given away for the benefit of medical men, but because necessity has caused us to disclose the formulæ of medicines and medicaments that already have some sale, and whether they are good, bad, or indifferent has nothing to do with the Pharmaceutical Society.

November 2, 1903. "Scrooge" (247/27).

The Pharmaceutical Journal Formulary.

I enclose P.O. for 5s. 6d. for copy, when ready, of the 'Pharm. Journ. Formulary.' I, in common no doubt, with many others, regard your present effort to help us through existing medicine stamp difficulties as most welcome. The advantage, too, in price of the 'Formulary' to members of the Society is a proof, were one needed, of the value of membership.

October 29, 1903. "C. F." (246/41).

I should like to contribute my quota of acknowledgment the very able manner in which you have looked after the terests of chemists in regard to this subject. The compilation and correspondence connected with the 'Pharmaceutical Journal Formulary' must have entailed a vast amount of labour, and I consider the thanks of the profession are due to you and your staff.

October 31, 1903. "Glycyrrhiza" (246/23).

Enclosed please find P.O. for 5s. 6d. I should be glad if you will reserve me a copy of your "Formulary," which I believe will be a most useful book to chemists, and especially to chemists in poor-class neighbourhoods, who have to sell preparations which they may know to be out of date, but which they dare not alter the composition of, as they are part and parcel of their stock-in-trade. I consider you deserve the thanks of the whole trade for the way in which you have taken this matter up in their interest, and shall be very disappointed if that thanks is not shown in a practical manner by more subscriptions to your very valuable Journal. I enclose four more formulæ, which I trust may be printed in your "Formulary."

November 2, 1903. "E. W." (247/40).

Enclosed please find a few recipes, which I should like included in your valuable "Formulary." I think every chemist will fully appreciate your untiring energy in accomplishing so stupendous a task, and realise the usefulness of such a valuable register.

November 2, 1903. "F. R." (247/35).

In sending you a few recipes lately for insertion in the "P. J. F.," I quite overlooked the accompanying, and which I trust may yet be in time for publication. I am sure we are all deeply indebted to you for the great interest and trouble you have taken in this matter, and that many chemists and druggists who have not yet become members of the Society may now see it to be their interest, if not their duty, to do so. Herewith P.O., value 5s. 6d., for copy of the "Pharmaceutical Journal Formulary.'

October 31, 1903. "J. W. P." (246/49).

If not too late, I shall be much obliged if you will kindly allow the enclosed recipes to be included in your 'P. J. Formulary.' The trade is deeply indebted to you for the vast amount of trouble you are taking in the matter.

November 2, 1903. "J. R." (247/31).

I have enclosed four more recipes to be inserted in your list, and I thank you very kindly in advance for this. I have noticed that the Journal seems to be really taking an interest in us now, and I feel sure that once the chemists realise that we shall support it well. If you will excuse the remark, you seem to be one of us now.

October 27, 1903. "J. H. B." (241/13).

May we tender you our thanks, and also condolence, for the mass of work you have had to get through?

October 26, 1903 "A. B. & C." (241/4).

Will you please include the enclosed formulæ in "Recipes," the publication of which will, I feel sure, prove of great benefit to the members of the Society? Thanking you,

October 27, 1903. "C. S." (240/49).

Kindly have enclosed list of recipes registered in your 'P. J. Formulary.' With best thanks for your efforts to assist the trade,

October 25, 1903. "W. J. H." (240/32).

I shall be much obliged by your publishing the enclosed formulæ in your list of recipes in the *Pharmaceutical Journal*. With thanks for the valued assistance you are giving to chemists in this matter,

October 27, 1903. "T. H." (240/24).

Herewith I send you five recipes, which have been in good demand for many years, and shall be glad if you will include them in an early issue of your valuable collection of *Pharmaceutical Journal* Recipes Thanking you in anticipation,

October 26, 1903. "C. P." (240/13).

I beg herewith to enclose a few more recipes for insertion. It goes without saying that we highly appreciate the idea of the publication of formulæ. It will tend, in a great measure, I hope, to purge the "trade" of much of the quackery and occultness connected with it, raising it ultimately to a higher position in the eyes of intelligent and educated people.

October 27, 1903. "H. D." (241/1).

I shall be very much obliged if you will insert enclosed formulæ in your register. I have put them in book form, thinking it would make it easier for your copying. I think you are doing good work for chemists in publishing these recipes, thus making easy what appeared, at first, a difficult question.

October 27, 1903. "J. H." (240/4).

I enclose a collection of formulæ, used in my business, and I will be obliged to you were you to publish same in your "P. J. Recipes." I wish you all success in your arduous task, and you well deserve the thanks of the entire craft.

October 27, 1903. "W. N." (240/6).

I think that your "Recipes" is a splendid way out of our difficulty, and should meet with all pharmacists' highest approval. I submit a few, asking you to kindly insert them at your convenience.

October 27, 1903. "H. N." (240/18).

Will you kindly publish the enclosed formulæ in addition to those I sent you last week? I congratulate you upon the admirable way in which you have extricated chemists from their difficulties.

October 27, 1903. "C. M. H." (241/32).

Accept my congratulations in way you are managing affairs of the moment applying to chemists and druggists. We are having a lively time in this town, I being one of the many fined in the proverbial "quid." However, with aid of your valuable reference book, I hope to evade their kind attentions in future.

October 30, 1903. "J. R." (99/32).

Please insert the enclosed seven formulæ in your register of recipes. The great interest taken in this matter by the Society's officers will be of benefit to both the Society and the Trade.

November 2, 1903. "A. P." (247/50).

Saccharin and Digestion.

I used saccharin (in the form of "saxin," $\frac{1}{4}$-gr. tabs.) as a food-sweetener for about a year, and found that it affected digestion very prejudicially indeed, causing great sensitiveness of the stomach—anorexia, and a variety of other dyspeptic symptoms, which took a long time to subside. I am decidedly of opinion that its use is very harmful—that is, when continued. An occasional dose or two may do no harm.

October 31, 1903. "Glycyrrhiza" (246/23).

Actinic Bottles.

In perusing the last issue of your valuable paper, I was greatly surprised to read in a letter to you a statement made by the makers of the "Ideal" bottles in their definition of actinic green, which they say "occludes the rays of light having the properties of actinism." This, surely, is absolutely the reverse of the fact. Green rays are powerfully actinic, hence, how is it possible for green glass to "occlude" the actinic rays? Bottles made of amber (now so largely used), ruby, or canary-coloured glass should be used when it is desired to protect the contents from the action of light. Such bottles may be termed non-actinic. I have always looked upon the term "actinic green" as applying to a particular shade or tint; at the same time, I consider the term in this connection as incorrect and most misleading.

November 2, 1903. "W. D. A." (247/29).

The Chemists' Defence Association, Limited.

In your issue of last week, Mr. Maben is reported to have said, at a meeting of the Executive of the North British Branch of the Pharmaceutical Society, in reference to claims made by the authorities for alleged infringements of the Medicine Stamp Acts, that—

> The Chemists' Defence Association would do nothing. . . . In another case, in which he had advised a chemist that his labels were liable, the chemist replied that it was all right, but he shortly after had a demand for £20 for two articles sold. The liability was incurred by an advertisement on a carton box, and by the possessive case. The Chemists' Defence Association was applied to, but they would not take any action, and advised that there was no defence.

I think Mr. Maben must have been speaking under a misapprehension. A number of these claims against chemists living in Glasgow and neighbourhood have been considered by the Chemists' Defence Association recently, but I am not able to identify the particular case which Mr. Maben seems to refer to. If, as Mr. Maben says, the label was liable, we did our duty in advising our member not to defend it, but in any case we could not decline to assist our member if he so desired. As a member, he would be entitled to demand, whatever his label may have been, that we should either defend the case ourselves, or bear the costs of its defence in the police court, up to an amount not exceeding £10. We are under a legal obligation to our members to take one or other of these courses. I feel sure Mr. Maben did not realise that his statement amounted to a charge that the Chemists' Defence Association had shirked its legal obligations, and my object in writing is to remove any such impression which his statement may have resulted in.

164, Temple Chambers,
Temple Avenue. W. S. Glyn-Jones.
London, E.C., November 2, 1903.

Of Ill-advised Concessions.

It saves time and trouble when one finds a letter exactly echoing one's ideas, and also saves a considerable space in the columns of the ever-improving *Pharmaceutical Journal*. Like Mr. Jno. Ingham, I read with interest the views of "An Ordinary Pharmacist" in the number of October 24, and I intended writing and saying so. I am now glad I did not, as Mr. Jno. Ingham, in the Journal dated October 31, just received (November 2), says exactly what I wanted to say, but says it much better.

San Remo, November 2, 1903. Frank R. Squire.

DEATHS.

Jones.—On October 26, John Thomas Jones, Chemist and Druggist, Warrington, formerly of Milford Haven. Aged 53.

Livesey.—On October 24, James Thomas Livesey, Chemist and Druggist, Rotherham, formerly of Walsall. Aged 48.

Pattinson.—On October 30, Richard John Pattinson, Chemist and Druggist, Peckham. Aged 69.

Price.—On October 31, Joseph Price, Chemist and Druggist, Higher Broughton. Aged 35.

Smith.—On October 31, Nathaniel Smith, Pharmaceutical Chemist, Cheltenham. Aged 89. Mr. Smith was one of the founders of the Pharmaceutical Society, of which he was a member at the time of his death. Further particulars of Mr. Smith's career will be found at page 660.

Sumners.—On October 28, Michael Cole Sumners, Pharmaceutical Chemist, Heckington, Lincs. Mr. Sumners had been in ill-health for some time, and about two years ago he went to Australia for the benefit of his health, returning home greatly invigorated. He took great interest in local affairs, and among other public positions which he filled in a very efficient manner, he held the post of churchwarden for thirty years.

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Formulary (F. H.—247/7).—The recipes will be arranged as you suggest.

Lip Salve (W. S. and C.—240/33).—Such a label would not incur liability.

Handbill and Envelope (J. D.—100/8).—They will not incur liability, as altered.

Formulary (H. D. K.—247/1).—Your suggestion accords with what we intend to do.

Chinese White (F. K. R.—99/30).—It is usually mixed with mucilage of tragacanth.

Colour of Bricks (L. W. W.—100/2).—We regret we have no information on the subject.

Ingredients of Powders (F. H.—99/26).—We regret that we are unable to examine them for you.

Odol (E. A. T.—240/46).—See the article on "Liquid Dentifrices" in the *P. J.* of January 11, 1902, page 29.

Dispensing Difficulty (W. T. H.—100/9).—The only way to prevent the liberation of iodine is to add an alkali.

Herbal Balsam (D. C. and S.—99/31).—Anyone may sell it, provided it is not rendered liable on handbills, etc.

Prescriptions (W. G. P.—99/17).—The prescriptions should not be dispensed as written; consult the prescriber.

Voice Jujube (W. S.—240/12).—The use of this name is not held to incur liability. See last week's *P.J.*, page 612.

Reference to Formulary (T. F. H.—247/2).—The contraction of the name will be sufficient; see letter in article at page 659.

Labels (J. G. H.—240/50).—The hair-wash label does not render the preparation liable; that for "Cough Drops" does

Dental Company (H. G. M.—99/33).—We cannot undertake to advise you how to evade the provisions of the Dentists Act.

Application after Shaving (R. W. T.—99/18).—Bay rum, sprayed on the face, is better than anything else for the purpose

Liniment (T. J. T.—99/23).—You can put what you like in the liniment, provided you label it aright, and sell it under proper conditions.

Quinine and Iron Tonic (A. S.—99/21).—This preparation will not be liable if you recommend it, as the name is held to contain a sufficient disclosure.

Lin. Pot. Iodid. (E. B.—99/19).—The liniment can, and should, be made exactly as the Pharmacopœia directs. You are not justified in adding more water.

Medicine Licence (E. A.—244/37).—Unless the licence be in the name of the company, liability will be incurred if dutiable medicines are sold on behalf of the company.

Sale of Strychnine (F. W. G.—100/11).—If in doubt, the simplest plan is to refuse to supply the articles unless the person requiring them is introduced to you by someone whom you know.

Troches (C. W. M.—247/8).—The question is whether the name of the troches renders them liable, apart from the special exemption. You should address an inquiry to Somerset House on that point.

Label (T. S.—100/5).—The Board insists that the formula must be given in such a case, and we take that to mean the complete formula, which you do not give. It can be printed on a separate slip label.

Teething Powders, etc. (A. D. P.—99/25).—Your wrappers appear to comply with the requirements of the Board (see *P.J.*, October 24, page 573), and you will doubtless be permitted to sell the powders unstamped.

Sale of Drugs (O. E.—247/46).—The sale of the articles you mention will not be interfered with, except in the case of antibilious pills and cough mixture, unless the articles are held out or recommended for ailments.

Cough and Cold Mixture (P. C. B.—244/33).—We cannot publish your formula without quantities. The simplest plan will be to name the ingredients upon the label, or upon a separate slip label without giving quantities.

Labels (J. T. R.—246/22).—The label for "Infants' Carminative" will not be considered liable, but the other will. The letters "P. J. R." should not be used without a number. The contractions "P. J. F." or "P. J. Form." will suffice.

Labels (W. J.—238/14).—The label for "Toothache Tincture ' will incur liability unless you disclose the formula, and that for "Bilious Pills" will also doubtless be considered "liable," but the other labels do not in themselves incur liability.

Compendium (F. R.—100/7).—The 'Compendium of Medicines' to which you refer is to be published by authority of the Council, and will differ entirely from the 'P. J. Formulary,' but we are not in a position to give particulars regarding it at present.

Labels (A. K.—99/32).—The labels for "Nursery Ointment" and "Mouth-wash" will be held to incur liability, unless you print the formula on the label, or on a separate slip label. The label for "Mouth Lotion" does not in itself render the preparation liable.

Unqualified Sellers (J. O.—247/33).—Unqualified persons will not be entitled to sell such things as cough mixtures, antibilious pills, etc., unstamped, but they may sell non-dutiable medicines under their proper names, provided they are not held out or recommended for any ailment.

Numbers on Labels (E. B. V.—99/28).—(1 & 2) You cannot have read the article in the *P. J.* of October 17, page 545, wherein it is stated distinctly that no number need be quoted. (3) No. We only undertake to supply one copy to each member at the special subscription price.

Onus of Proof (T. F. W.—100/1).—Entire drugs are exempt as you imagine, and the onus of proof rests with the seller. It is not for us to say how the seller is to prove that an antibilious pill has been made in accordance with the 'P. J. Formulary,' but we do not imagine that any fair-dealing person will experience trouble in that respect. The simplest plan will obviously be to produce a copy of the book for inspection by the Inland Revenue officials.

Condition Powders for Persian Kitten Six Weeks Old (J. S.—99/16).—Condition at that age should mean fat derived from abundant food perfectly digested, and not from drugs. Fanciers endeavour to promote the process by eliminants, such as the following:—Potass. tart. acid, 1 part; antim. nig., 1 part; dose, 1/8th of a grain in the chief meal. Also by the administration of santonin, ¼ gr., to each pound weight of the kitten, once a week fasting.

Milk Fever in Cows (F. C. H.—99/22).—No injection is used to prevent it, but to neutralise the toxic agent in the milk glands, iodide of potassium is injected in half-ounces, dissolved in a quart of water, and divided equally between the four quarters of the udder. The syringe or enema has a milk syphon attached to the end, and this is introduced up the teat while the apparatus is only half-filled, and air is thereby sent up in addition to the fluid. Iodine is better liberated by such conditions. Chinosol is more generally used now, in the proportion of 2 drachms to a quart, and in the manner above described. Fuller notes on this subject will shortly be published among "Veterinary Formulæ and Notes."

Information Wanted.

Behagia Insufflatio (99/26).—Formula for this snuff.

Iodinol (99/27).—Detailed instructions for the preparation of this substance for hypodermic use.

Calendar for the Week (November 8—14, 1903).

Days of		Events of the Week.	Sun	
M	W		Rises	Sets.
8	S	**Twenty-second Sunday after Trinity.**	7.6	4.22
9	M.	Dewsbury and District Chemists' Association, at 8.30 p.m.	7.8	4.20
10	Tu	Pharmaceutical Soc. G.B., 17, Bloomsbury Square, W.C., at 8 p.m.—Evening Meeting. Bradford and District Chemists' Association, at 9 p.m. Edinburgh Chemists', Assistants', and Apprentices' Association, at 8.30 p.m.—Visit to Sulphuric Acid Works. Huddersfield and District Chemists' Association, at 8.45 p.m.—Adjourned Annual Meeting.	7.9	4.19
11	W	Bristol Pharmaceutical Association, at 8.30 p.m. Manchester Pharmaceutical Association.—Lecture on Old Manchester Pharmacies by W. Kirkby. Newcastle-on-Tyne and District Chemists' Association, at 8.30 p.m. Tunbridge Wells and District Chemists' Association, at 8 p.m.—Annual Dinner.	7.11	4.17
12	Th	☾ Last Quarter, 2.46 a.m. Chemists' Assistants' Association, at 8.15 p.m.—Annual Reunion. Hartlepools and District Chemists' Association, at 7 p.m.—Smoking Concert. North Staffordshire Chemists' Association, at 6.30 p.m.—General Meeting. West Ham and District Chemists' Association, at 8 p.m.—Concert.	7.13	4.15
13	F	Cambridge Pharmaceutical Association, at 9.15 p.m.	7.14	4.14
14	S	Midland Pharmaceutical Association, at 8 p.m.—Inaugural Meeting.	7.16	4.12

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Abbie, Abbott, Alcock, Allan, Allen, Allenby, Allison, Anderson, Andrew, Andrews, Armitage, Aspinall, Astill, Atkinson, Averill, Babtie, Bailes, Bailey, Baker, Barker, Barron, Bathurst, Batting, Beall, Beatton, Bedford, Bentley, Betty, Bird, Blinkhorn, Blockley, Botham, Boulton, Bowman, Brodribb, Brown, Brunt, Buckley, Burden, Burnett, Butler, Calvert, Charles, Cherrett, Clarke, Clayton, Clowes, Cochrane, Cocker, Cossey, Cowley, Cox, Crombie, Dallworth, Davis, De Carle, Deighton, Denoual, Denton, Destorer, Dici, Dietzsch, Dobson, Doe, Doughty, Downing, Dunlop, Dwyer, Eldred, Elliott, Ellis, Evans, Farquhar, Flint, Ford, Forster, Fosse, Fox, Francis, Freeland, Freeman, Gaddes, Gardner, Gee, Gibb, Gilkes, Glaister, Golightly, Gott, Gower, Green, Gresty, Griffin, Griffiths, Grimble, Gristock, Gwatkin, Hadfield, Hall, Hallaway, Hant, Hardman, Harker, Hatrick, Hawksworth, Hedges, Hendry, Hey, Hildyard, Hill, Hoare, Hocken, Hodgson, Hogg, Holford, Holmes, Hopps, Hornsby, Horton, Houfe, Howard, Hudson, Hughes, Hulme, Hutchin, Inglis, Innes, Jacks, Jackson, Jenkins, Jenner, Jesper, Johnson, Jones, Kaberry, Kelf, Keller, Knight, Knowles, Lance, Lavereck, Lees, Lincoln, Lloyd, Lockwood, Long, Lucas, Mackenzie, Mackie, McMillman, McNay, McVitie, Maitland, Mark, Marsden, Marsh, Marshall, Marsie, Martin, Mason, Mather, Matthews, Meggeson, Mesbach, Morgan, Morrison, Neave, Newey, Nicol, Norman, Onion, Orrell, Parker, Parlby, Parse, Pator, Pattison, Peacock, Peake, Perry, Pescod, Pettigrew, Philp, Pickering, Piggott, Plenderleith, Porteous, Potter, Powell, Pratt, Priestley, Prince, Pryke, Radford, Raffan, Ramsay, Rayson, Readman, Rees, Reid, Reynolds, Richards, Richardson, Rigby, Righton, Riley, Roberts, Robertson, Rogers, Roper, Rose, Round, Row, Rowe, Saint, Sandiland, Sanguinetti, Savory, Scott, Selleck, Severs, Shields, Simpson, Sinclair, Siviter, Smalley, Smith, Spence, Stanley, Stephenson, Stokes, Stooke, Sturton, Sumners, Taylor, Thomas, Thursfield, Tildesley, Timmins, Tollitt, Tooney, Town, Townley, Tree, Tunbridge, Tupholme, Turner, Tyrer, Upton, Vawser, Vizer, Wain, Walker, Wall, Wallis, Walmsley, Watts, Weddall, Wellwood, White, Wiggins, Wilcock, Wilkins, Williamson, Wilson, Wing Wolstenholme, Woodman, Woodward, Wootton, Wright, Wrigley, Wynn Young

Telegrams: "PHARMACEUTICAL JOURNAL LONDON"
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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, November 12, 1903.

Several Prosecutions under Section 15 of the Pharmacy Act were heard by the Glasgow Sheriff to-day.

A Method by which an Admixture of as little as 1 per cent. of yeast extract can be detected as an adulterant of meat extract is described in this issue.

The General Meeting to appoint a committee for the Chemists' Ball is announced for Monday next at 16, Bloomsbury Square.

Mr. Harold Wilson, B.Sc. (Lond.), pharmacist to University College Hospital, has been appointed pharmaceutist to St. Thomas's Hospital, in succession to Mr. White.

The President of the Pharmaceutical Society attended the annual dinner of the Tunbridge Wells and District Chemists' Association on Wednesday, November 11.

The Exhibits Displayed in the Examination Hall at 17 Bloomsbury Square were a source of great interest to those who attended the evening meeting of the Pharmaceutical Society on Tuesday.

For Selling Potash Water practically destitute of potash a Leamington tradesman has been fined. The summons against the manufacturers who had supplied the water to the retailer was dismissed.

In the Students' Columns this week appears the second article on Botany. Student-associates are reminded that the series of articles on which the first competition will be based is drawing to a close.

The Cash on Delivery Postal System did not find favour at Monday's meeting of the Dewsbury and District Chemists' Association, the members of which unanimously passed a resolution condemning the scheme.

In Consequence of the Demise of Mr. I. C. Thompson, whose death is regretfully recorded this week, the case of Burroughs Wellcome and Co. against Thompson and Capper has been placed further down the list.

The Manchester Pharmaceutical Association held an interesting meeting on Wednesday, when Mr. William Kirkby gave an address, illustrated by lantern-slides, on some old Manchester pharmacies and pharmacists.

The Mayoral Elections have resulted in a number of chemists being chosen to fill the seat of honour in their respective boroughs. Particulars of these and other honours which have fallen to chemists are given at page 725.

The Wakefield Magistrates have dismissed a summons against a tradesman who, it was alleged, had sold deficient sweet spirit of nitre, on the ground that only thirteen days had elapsed between the day of service and the day of hearing.

Members and Student-Associates of the Pharmaceutical Society can still subscribe for the 'P.J. Formulary,' as stated in this week's supplement. Only a few more "recipes" will be printed in the Journal, but the published work will comprise about 10,000 formulæ.

A Paper on Resinous Tinctures has been read before the School of Pharmacy Students' Association by Mr. Harold Wilson, who contributed some useful hints on the dispensing of those galenicals in watery mixtures. In many instances it is preferable to use tragacanth as a suspending agent.

In a Paper Read at Tuesday's evening meeting of the Pharmaceutical Society, Mr. Edmund White gave the results of his continued investigations of kino; in his first paper it will be remembered the author stated that the gelatinisation of tincture of kino was due to an enzyme.

By Determining the Quantities of truxilline and cinnamyl-cocaine in crude cocaine, Mr. Garsed showed, in a communication read at the evening meeting on Tuesday, that he could determine the amount of pure cocaine by difference. The paper will appear in the Journal in due course.

Municipal Chemistry was the subject of an address delivered by Mr. J. Carter Bell at a meeting of the Manchester Section of the Society of Chemical Industry on Friday, November 6. He advocates the establishment of a good technical laboratory specially devoted to the teaching of the practical chemistry necessary for the efficient discharge of the duties of a "corporation chemist."

The Price of Codeine is again lower. At to-day's auctions, the demand generally was slow.

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THE PRIVILEGES ATTACHING TO A PROFESSIONAL QUALIFICATION.

The pharmaceutical body is slowly acquiring perception of the fact that the duly qualified and registered chemist is not without statutory advantages. If he is called upon to pass stringent examinations and conform to poison and other regulations from which the ordinary tradesman is free, he has at least the compensatory consolation of being privileged by Act of Parliament to sell certain preparations without Stamp Duty, whilst the unexamined and unapprenticed purveyor of universal requisites is taxed three-halfpence in the shilling for a similar sale. Then there is the acknowledgment of professional status implied in the exemption of pharmacists from service on juries, and the statutory exemption which permits chemists and the various practitioners of the healing art (physicians, surgeons and apothecaries) to make up or sell spirituous medicines. A correspondent writes concerning this latter privilege, and having in his mind the knowledge that unqualified persons *do* sell spirituous preparations, asks "on what grounds can a grocer supply sp. ether. nit., or any tincture?" The answer is that if the grocer does not possess a spirit licence he would be committing an offence against the Spirits Act by selling the articles referred to. The fact

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that the legal differentiation of professional and non-professional individuals has hitherto not been made so effective as it might be is largely due to the traditional lines upon which the Board of Inland Revenue has done its work, but grocers and their fellow tradesmen who sell spirituous medicines (and their name is legion) would be unwise—most unwise—to assume that precedent will continue to govern the doings of Somerset House. As the law stands, chemists and druggists may, without restriction, supply medicines compounded with spirit if the preparations are intended for the use of "sick, lame, or distempered persons only," but the ordinary tradesman (whether trading as an individual or as a corporation) who desires to sell any liquid containing more than 2 per cent. of proof spirit must take out an Excise licence or run the risk of heavy penalty. This is not a new law or a new reading of an old law, and reference is only made to it here on account of the prominence it seems to give to the position of chemists and druggists as the legitimate and specially recognised compounders and retailers of medicinal preparations. It is the duty of every registered man to act in conformity with his high obligations and privileges, and it is the business of the Pharmaceutical Society to ensure that the exemptions accorded by Parliament to the pharmaceutical calling on the basis of apprenticeship, examination, and registration are not overlooked by departments of the State or by the general public.

THE MAJOR EXAMINATION.

As will have been noticed by most readers of the Journal, important alterations in the Major Examination have been proposed by the Boards of Examiners, and are now under consideration by the Council of the Pharmaceutical Society. It is scarcely necessary to remind the pharmacist of to-day that the Major qualification was originally intended to be the universal qualification for practice, and that until 1898 certain privileges of full membership of the Pharmaceutical Society were, broadly speaking, confined to those who had become duly registered as pharmaceutical chemists. Equally well known is the fact that at the present time the only material advantages of the holder of the higher qualification, apart from such greater distinction and knowledge as he may possess, are the right to use and exhibit the title of "pharmaceutical chemist," and, in England and Wales, of exemption from jury service while actually practising. It is not unnatural that, in the course of a half-century which has seen enormous changes in all the conditions affecting the calling, the Major Examination has changed with the times. Whether or not the changes have always been in the right direction, or of a sufficiently drastic nature, is a question on which an official opinion may be expected shortly. Without turning back to the earliest days of the Major Examination, reference to the syllabus printed in the *Pharmaceutical Journal* of March 1, 1861, shows that in that year pharmacy, prescription-reading and dispensing, as well as some chemistry, theoretical botany and materia medica, formed the subjects in which it was deemed desirable to examine aspirants for the diploma. In 1903, the candidate is assumed to have learnt for the Minor Examination all that there is to know of prescription-reading and dispensing, and for the Major to have an advanced and practical knowledge of chemistry and botany, together with something more than an acquaintance with the application of the microscope to the valuation and identification of powdered drugs, and with the main principles of that branch of natural philosophy which, for want of a better name, is usually spoken of as physics.

The paper read last week before the Chemists' Assistants' Association, and printed in part at page 704 of this issue, demonstrates that of late years there has been an unmistakable decrease in the number of candidates for the examination. Opinions differ whether this falling off is to be ascribed mainly to faults in the present syllabus of the examination, or to the feeling that something more substantial than at present should result from the time and trouble and money devoted to the acquirement of the higher qualification. Be that as it may, the falling-off in the numbers of pharmaceutical chemists demands, as it is indeed receiving, something more than abstract lamentation. The debate at the Chemists' Assistants' Association showed that it is the question of commercial prospects which weighs paramountly with the younger generation. The correspondence columns of the Journal, on the other hand, during the last few months, afford evidence of a general feeling that the syllabus might be improved. It seems to be agreed that if the Council, with the united assistance of the two Boards of Examiners, is able to devise improvements in the examination syllabus which will at the same time render brighter the material prospects of the pharmaceutical chemist, pharmacy as a whole will proportionately benefit. With regard to the proposals to revise the syllabus, several speakers in the debate last week expressed doubts whether it would be practicable to examine either in chemistry or materia medica, instead of, as now, in both subjects. There seems to be a fear—based, probably, on insufficient knowledge of the proposals of the Boards—that it will not be possible for a student whose knowledge of chemistry is no greater than that required for the "Minor" to acquire an intelligent knowledge of the methods of testing drugs and determining their constituents.

A EUCALYPTUS INCIDENT.

The absolute necessity for the most exact carefulness on the part of chemists and their assistants has rarely been more forcibly exemplified than in the case which came before Mr. Justice Phillimore in the King's Bench Division, on Thursday, November 5. A short report was published in last week's issue (see page 685) and a fuller summary of the evidence is given in another column this week. It is rarely that damages to the extent of £100 are awarded on account of the sale by mistake of so innocuous a drug as eucalyptus oil. The mistake was caused by the facts (1) that the bottle taken to the shop of Messrs. Bruces, Limited, had contained eucalyptus, and smelt strongly of that oil, and (2) that the assistant neglected to read the paper handed to him on which was a recipe for a cough mixture of ipecacuanha, squills, and tolu. A remarkable feature of the case was the lack of definite medical knowledge, both as to the effect of eucalyptus oil—in an excessive dose—on a young child, and as to the methods by which it could be ascertained that such a dose had been taken. There seemed to be a perfectly genuine difference of opinion as to whether a teaspoonful of eucalyptus oil could bring on a long-continued attack of incontinence of urine. At a previous hearing the jury disagreed, but on this occasion the new jury preferred the evidence for the prosecution, with the result that the defence became responsible for £100 damages and the costs of two High Court actions.

MEDICAL SYMPATHY.

Reference was made last week to the objectionable methods of advertising adopted by a limited company trading in drugs at Bournemouth. The attention of the *British Medical Journal* has been called to the same incident, and the company in question receives the well-merited censure of that journal. It is with particular pleasure that pharmacists will learn that our contemporary has noticed the anomalous state of things by which a limited company of unqualified persons is able, by the assumption and improper use of the title and functions of a chemist and druggist, to bring discredit on the calling. The *British Medical Journal* recalls that "the Legislature enacted in the Pharmacy Acts that for the protection of the public certain things which it falls to the duty of the pharmacist or chemist to do shall only be done by persons who have undergone a certain training, and passed certain test examinations, and even these trained persons in performing certain of these acts must keep a record in a manner prescribed by the statutes. The Acts speak throughout of a person, and in 1880 the House of Lords decided on appeal that a company was not a person within the meaning of the Acts; consequently it is held that none of the provisions inserted in the Act for the protection of the public apply to a company. It is rather extraordinary that such an anomalous state of things should have been permitted to continue for nearly a quarter of a century. The Pharmaceutical Society, which is the statutory body mentioned in the Acts, has suggested to Parliament that it should enact that the provisions which apply to persons should be made also to apply to companies, but, so far, the House of Commons has not found leisure to deal with the matter. The decision in the House of Lords has still a further effect because the Medical Acts also refer to persons. The incorporation of medical and dental companies formed with the effect, and presumably with the purpose, of evading the provisions of the Medical Acts still goes on, and indeed a circular largely and continuously issued by a firm of company agents avows that object in set terms. We are informed, in response to an inquiry, that the efforts to interest the Government in the subject have not been relaxed, and that an endeavour made last session met with encouragement, and it is believed to have fallen through on account of the pressure of other business."

ARMY MEDICAL REFORM.

The Director-General of the Royal Army Medical Corps recently paid a public tribute to the success of Mr. Brodrick in having accomplished, during his term at the War Office, great improvements in the army medical service. It is unfortunately, not yet possible to congratulate the Director-General or anyone else on having placed the system of army dispensing on a satisfactory basis. "Unqualified men preferred," would seem to be still the motto of some of the magnates in Pall Mall. Almost everywhere else, except in the prisons of the Emerald Isle, it has been recognised that the dispensing of medicine should be in the hands of those who have shown their fitness for the work, The reform of this branch of the subject may be commended to the serious consideration of Mr. Arnold-Forster.

THE HANBURY MEDAL.

In the following letter, which has been addressed to the President of the Pharmaceutical Society, M. Collin, Hanbury Medallist, expresses his thanks for the award, and his regret that he was unable to come to London and receive the medal personally:—

> 41 bis, Rue de Paris,
> Colombes, le 4 Novembre, 1903.
>
> Monsieur le President,—Rentré à Colombes le 31 Octobre, j'ai reçu le lendemain par l'intemédiare de M. le Maire de la localité, la Médaille Hanbury, qui devait m'être décernée par le Société des Pharmaciens de la Grande Bretagne, dans le séance du 1 Octobre dernier. En vous accusant reception de cette magnifique médaille, qui est la plus belle récompense de mes travaux, j'ai l'honneur de vous exprimer tous les regrets que j'ai eprouvés de n'avoir pu, en raison de l'état de ma santé, me rendre à Londres pour y recevoir personellement cette récompense et redire devant tous mes collègues de la Société de Pharmacie de Londres, toute l'importance que j'attache à cette haute distinction.—Veuillez agréer, Monsieur le Président, l'assurance de ma haute consideration.
>
> (Signed) Eug. Collin.

MALARIA IN INDIA AND THE COLONIES.

The address delivered on Tuesday, the 10th inst., by Major Ronald Ross to the Royal Colonial Institute presented several features of the first importance. Not only have many industries in the tropics been ruined by malaria, but the progress of whole countries, some of which possess the greatest natural resources, has been retarded in consequence of the same pernicious malady. Major Ross is of opinion that the use of quinine is of much less value as a personal safeguard than the mosquito-net. Quinine cannot really be said to be a preventive against malaria, because, as a matter of fact, it does not exclude the parasites, but only destroys them after they have effected an entry into the body. To be of real benefit, it must be consumed constantly, and in considerable doses, and this is apt to impair the digestion and have other unpleasant effects to which the individual is always loth to expose himself. But, and this is a point on which Major Ross lays special emphasis, it is a great mistake to suppose that the whole subject of the prevention of malaria is contained within any formulæ of personal prophylaxis. For immediate results it is necessary to look chiefly to State action. Major Ross asks that a fully qualified medical officer of health should be appointed to each of the principal West African towns, that this officer should be supervised by a Sanitary Commissioner working on the Indian model of organisation, and that an annual sanitary report regarding the West African Colonies should be regularly published. Local authorities should be compelled to show a regular record of their sanitary works by exposing that work to periodical scrutiny by experts. Malaria can be dealt with more easily and effectually than any other great disease—than tuberculosis, cholera, or plague, for example. And in Major Ross's opinion, there is no reason why the disease should not be reduced in every tropical town as it has been reduced in Havana, Lagos, and Ismailia.

THE 'P.J.F.'

This volume, as has already been stated, is in active preparation. The response to the special offer of the 'P.J. Formulary' to members and student-associates of the Pharmaceutical Society has been even larger than was anticipated. In fact, the whole work in connection with the collection of these recipes has been a series of surprises. Instead of a collection of recipes numbering one or two thousand, as was at first expected, communications have continued to arrive, until now the formulæ submitted total up to nearly five figures, and it is anticipated that the finished work will comprise little short of ten thousand recipes. The labour involved in the preparation of this publication is, as will be readily understood, very great indeed, and, although it is desired to meet the wishes of contributors, it is equally desirable to push forward with the work with all speed. It was stated some weeks ago that the Editor could not undertake to include recipes received after October 31. In spite of this notice belated contributions have continued to arrive in inordinate quantities. Nevertheless, an endeavour will be made to include all these late arrivals, at the special request of those who have so long delayed in submitting them; but inclusion can no longer be guaranteed in the first edition. The contents of this volume have been contributed by considerably over a thousand individual chemists and druggists, as well as by numerous associations and wholesale firms. It will be the largest work of this kind ever published, and it is anticipated that its circulation will be very great. Those who have not yet sent up their contributions would greatly facilitate the work of the Journal by paying attention to one or two minor details. For instance, payment should be made by means of postal orders for five shillings and sixpence each, and all orders should be addressed to the "Manager" of the *Pharmaceutical Journal.* Subscribers are also requested to send the form and the postal order in a separate cover and not to include other matter.

THE EVENING MEETING.

The first evening meeting of the session, which was held at 17, Bloomsbury Square, London, on Tuesday, the 10th inst., presented several features of importance, chief among which was the exceptionally good attendance. The number of members and students present must have exceeded one hundred and twenty. The papers by Mr. White and Mr. Garsed were of more than usual value from a pharmaceutical point of view, two difficult problems—the gelatinisation of tincture of kino, and the assay of crude cocaine—having been satisfactorily solved. The Committee which is responsible for the arrangements is to be congratulated on the signal success which attended the small exhibition which was held in the Examination Hall after the meeting, while the great improvements in the catering arrangements were the subject of universal praise. No little interest, too, was shown in the recent additions to the Library and Museum, which had been placed on view. All these things combined to secure the success of the gathering, and to form the best of introductions to the session. Thanks are due to those members of the Society who contributed to the exhibition. There is every reason to expect that articles of equal interest with those shown on Tuesday will be exhibited at future meetings, and members of the Society who may be able to do so are asked to assist in making the exhibition a permanent feature of the evening meetings.

NON-DUTIABLE TITLES FOR MEDICINES.

In the Journal of October 24, lists were published (see p. 574) of titles of compounded medicines, which do not incur liability to Medicine Stamp Duty, and the Board of Inland Revenue has now further intimated that the following titles for compounded medicines, among others, will not be regarded as incurring liability to duty, so far as the question of liability is determined merely by the title in each case:—

Anodyne Mixture
Anodyne Pills
Antiseptic Throat Pastilles
Blood Lozenges
Blood Purifier
Blood Purifying Pills
Blood Mixture
Bronchial Mixture
Cardiac Tonic
Cathartic and Liver Pills
Chest and Lung Embrocation
Emmenagogue Pills
Head and Stomach Pills
Liver and Blood Purifying Pills
Liver and Kidney Pills
Liver Tonic
Lung Tonic
Pectoral Lozenges
Pectoral Mixture
Purifying Blood Pills
Purifying Stomach and Head Pills
Stomachic Mixture
Tasteless Liver Pills
Tonic Throat Mixture

If, however, words expressing or implying a recommendation of any preparation in the foregoing list—for the prevention, cure, or relief of a human ailment—appear on labels or showcards, or in handbills, advertisements, etc., a claim to Medicine Stamp Duty will arise, and it will be necessary to affix duty stamps to the packages unless the composition of the medicine is disclosed, either by stating the names of all the active medicinal ingredients on the label, or by indicating that the formula is published in the 'P.J. Formulary' or other well-known book of reference.

THE ROYAL SOCIETY'S MEDALS.

Medals of the Royal Society have been awarded as follows:—A Royal medal to Mr. Horace T. Brown for his work on the Chemistry of the Carbohydrates and on the assimilation of Carbonic Acid by green plants; the Davy medal to M. Pierre and Madame Curie for their researches on Radium; the Hughes medal to Professor Wilhelm Hittorf for his long-continued experimental researches on the Electric Discharge in Liquids and Gases. All who have followed the published work of these scientists will join in congratulating them on a well-deserved honour.

THE CHEMISTS' BALL, 1904.

A General Meeting of those interested in the Chemists Ball, will be held, by permission, at 16, Bloomsbury Square, London, on Monday next, November 16, at 2.30 p.m., when the Secretary and Committee for the Ball will be elected. All who take an active interest in the fortunes of the Ball are invited to attend the meeting.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Arsenic in Sea-water, Rock-salt, Common Salt, and Mineral Waters.

By means of the ferric sulphate reagent previously described A. Gautier has been able to demonstrate the presence and determine the amount of the minute quantity of arsenic present in the substances above-named. Sea-water from the Atlantic 30 Km. from the Brittany coast was found to contain 0·009 Mgm. of inorganic arsenic, and about 0·0008 Mgm. of organic arsenic per litre. Another determination gave 0·010 Mgm. of total arsenic per litre. From deep-water soundings off the Azores a sample taken at a depth of 10 M. contained 0·025 Mgm. of arsenic per litre; at a depth of 1,335 M. 0·010 Mgm. per litre, and at a greater depth of 5,943 M., or 6 or 8 M. from the bottom of the ocean, 0·080 Mgm. of arsenic per litre. It is apparent, therefore, that arsenic abounds in the water at great depths in volcanic regions. The water of a salt spring at Misserey, near Besançon gave 0·010 Mgm. of arsenic per litre. Fine sea-salt from Brittany gave 0·003 Mgm. of arsenic per 100 Gm., the same from Olonne, 0·001 Mgm; grey sea-salt from Olonne 0·045 Mgm; English table-salt 0·015 Mgm. Rock-salt from Stassfurth contained 0·0025 Mgm. of arsenic per 100 Gm. of salt; from near Nancy 0·005 Mgm.; mountain salt from Djebel-Amour, South Oranais, 0·005 Mgm.; fused sodium chloride of unknown origin 0·030 Mgm.; salt from a volcanic fissure on Vesuvius 0·175 Mgm. Arsenic is, therefore, invariably present in salt. Vichy water from various wells was found to contain from 0·12 to 0·31 Mgm. of arsenic per litre.—*Comp. rend.*, **137**, 229.

Separation and Determination of Barium, Strontium, and Calcium.

Robin recommends the following method for the separation and determination of the alkaline earths. The substance to be examined is treated so as to afford a solution of chlorides or nitrates of these metals. If it be acid it is rendered slightly ammoniacal. About 2 per cent. of pure ammonium chloride, free from sulphate, is then added, and the mixture acidified with acetic acid, boiled, and the boiling liquid treated with excess of potassium bichromate, as shown by the production of a reddish tint in the solution, which is then again boiled for five minutes. After cooling, this is filtered to separate the barium chromate. The precipitate is washed first with a 0·5 per cent. tepid solution of ammonium acetate rendered faintly alkaline with ammonia, then with sufficient water, containing 10 per cent. of alcohol, to remove the soluble salts. When thoroughly washed the filter is dried at 100°-110° C. for two hours and weighed as barium chromate. The filtrate is made alkaline with ammonia and boiled, then treated with 3 to 4 per cent. of crystalline ammonium sulphate. After boiling for fifteen minutes, taking care to maintain the alkalinity with more ammonia, it is allowed to cool, and the precipitated strontium sulphate is collected on a filter, washed first with water, containing 0·5 to 1 per cent. of ammonium sulphate, rendered alkaline with ammonia, and then with a solution of 10 per cent. of alcohol in water; the precipitate is then dried, incinerated, and weighed as strontium sulphate. The filtrate is heated to 80° C., treated with ammonium oxalate, and allowed to stand for half an hour. The calcium oxalate is then collected, washed with slightly ammoniacal water, dried, incinerated and weighed as carbonate, or converted into sulphate, and weighed as calcium sulphate.—*Comp. rend.*, **137**, 258.

Valerian.

Professor P. Carles, of Bordeaux, who has made a careful study of valerian, finds that the essential oil exists in similar proportions in the root and rhizome, but very little in the rootlets. That of mature roots has an agreeable odour, that o the rhizome strong and camphoraceous, but that of the rootlets very little odour, He recommends, after removal o adherent soil, of which about 9 per cent. is usually present, that the rootlets, which amount to about 3 per cent., should b cut off. An ethereal tincture contains the whole of the essential oil and resin present, but hardly any valerianic acid, the acid taken up being propionic. He considers the best preparation to be a fluid extract with 20 per cent. of alcohol, and 5 per cent. of ammonia, prepared by successive macerations. Percolation appears to break up the equilibrium between the active principles, and causes a precipitation of those which are removed in undue proportion. The resin appears to be intimately connected with the camphor and propionic acid. The camphor is a camphol or borneol, not an aldehyde. It is combined under the form of an ether, not only with the resin, but also with propionic, acetic, and formic acids.

Fermentative Hydrolysis of Fats.

W. Connstein, E. Hoyer, and H. Wartenberg controvert the statement of Green and of Sigmund, that the presence of free acid has a retarding effect on the formation of fatty acids by the specific ferment of castor oil seeds. They find, on the contrary, that rapid conversion of glycerides into fatty acids does not take place until the amount of acid has reached a certain point, when it suddenly becomes greatly increased. Thus an emulsion of castor oil seeds, protected by means of 1 per cent. of chloral hydrate, showed at first 1 per cent. of free ricinoleic acid; in two days, 3 per cent.; in four days 52 per cent.; in six days 57 per cent.; and in eight days, 59 per cent. This experiment was conducted at 16° C. When a similar experiment was performed at 35° C., the amount of free ricinoleic acid was, at first, 3 per cent.; in one day, 5 per cent.; in two days, 52 per cent.; in three days, 85 per cent.; and in four days, 95 per cent. of the total glycerides. It was further found that the addition of acetic acid, acid sulphate of sodium, and free sulphuric acid in all cases greatly accelerated the formation of free fatty acid, not only with castor oil, but with other animal and vegetable fats. Castor oil cake, freed from oil, was found to be the best source of the active ferment. Some fats, such as that of the coco-nut, and particularly butter, are not so readily hydrolysed by the ferment as others, such as cotton seed oil. With synthetic esters of the fatty acids as with the natural glycerides, the sudden increase of free fatty acids only occurs when the amount of free acid reaches a certain point. The presence of a certain amount of water is absolutely necessary for the success of the reaction, and the oil operated on should be well emulsified. When solid fats are treated, the liberated fatty acids, being crystalline, may be at once separated by expression. When the glycerides of stearic and oleic acids are employed the "stearine" is obtained perfectly white without requiring any subsequent purification, and the "olein" is much lighter in colour and clearer than that resulting from chemical reactions. Any esters which have escaped hydrolysis will be fluid, and will therefore be removed by filtration and pressure, leaving the "stearine" pure enough for immediate commercial use. C. K. Braun and E. Behrendt find that, although the ferment of *Ricinus* is more active in the presence of free acid, such is not the case with abrin, the ferment of *Abrus precatorius*, which gives the best results in a neutral medium, and further that emulsin and arbutin are without any fermentative action on fats.—*Berichte*, **35**, 3,988 and **36**, 1,142.

THE GELATINISATION OF TINCTURE OF KINO.*

BY EDMUND WHITE, B.SC. (LOND.), F.I.C.

In May of the present year I published an account† of an investigation into the cause of the gelatinisation of tincture of kino, from which it appeared that this phenomenon was due to the presence of an enzyme belonging to the oxydases, whose distribution in the animal and vegetable kingdoms has been shown, in recent years, to be much wider than was formerly suspected.

Shortly after the publication referred to above, Mr. David Hooper, who had facilities for obtaining kino in a freshly collected condition in India, confirmed my results and carried the matter a step further by separating from the fresh juice of *Myristica gibbosa*, an unofficial variety of kino, an amorphous substance free from tannic acid, which exhibited very clearly the properties of an oxydase—viz., the formation of a blue colour on the addition of a freshly prepared tincture of guaiacum.‡

In the 'Agricultural Ledger,' 1900 (No. 11, page 381), reference is made to a method of collection adopted by Mr. J. G. F. Marshall, which is as follows:—"A longitudinal cut is made with an axe or knife, called *macha katti*, through the bark of the trees, down to the cambium, about 1½ ft. long, and side cuts are made to lead into this. A bamboo tube is then fixed at the bottom of the main incision in order to catch the juice. In the course of about twenty-four hours the flow of the gum ceases, and the bamboo is taken down. When several of these bamboo cups are nearly full they are taken to headquarters and emptied into a large cauldron, and the juice is boiled. During the boiling, the impurities, consisting of pieces of bark, wood, and leaves, rise to the surface and are skimmed off. When sufficiently concentrated to the consistence of a thick extract, it is exposed to the sun, in thin layers, in shallow vessels until it is dry enough to crumble to pieces. The kino is then weighed and packed away in wooden cases." The above quotation is made in full as the original source is not readily accessible to everyone. Sufficient time has not elapsed to enable one to state that this method of preparation will yield a kino which tincture will not gelatinise; but in all probability this will be found to be the case. Meanwhile, the following formula for the tincture is suggested, and will enable kinos, not prepared in the manner described above, to be utilised for this preparation:—

Kino	2 ounces
Boiling Water	10 fluid ounces

Add the kino to the water in a suitable vessel, and maintain the whole at or near the temperature of 100° C. for fifteen minutes, agitating frequently. Allow to cool, replace the water lost by evaporation; add

Alcohol (90 per cent.)	10 fluid ounces

and set aside for twelve hours; then strain.

If the kino be fresh and of good quality it will almost entirely dissolve. In old samples more or less change, due to the action of the enzyme, will have occurred, and a corresponding amount of insoluble matter will have been formed. If Mr. Marshall's method of collection fulfils the expectations which I have formed of it, and the whole of the kino in commerce be collected in accordance with the directions quoted above, then the necessity for any special method of preparing the tincture will disappear, and a stable preparation will be obtained by simple solution in alcohol of the desired strength.

The problem presented by the gelatinisation of kino tincture would therefore appear to be solved, and we may look forward to a very considerable increase in the use of the various kinds of kinos both in medicine and the arts—in tanning, *e.g.*; for as Mr. David Hooper has remarked*:—"An unlimited supply is now obtainable through the Forest Department, and at a price that will preclude all competition with other articles of a similar nature." In fresh kino, which has been prepared by heat so as to preclude the action of the enzyme, the solid matter is almost entirely soluble in weak alcohol, and absorbable by hide-powder.

KINO: AN INVESTIGATION OF ITS CONSTITUENTS.†

BY EDMUND WHITE, B.SC. (LOND.), F.I.C.

PART II.

The Constitution of Kino-Tannic Acid.

In Part I. of the present investigation‡ I showed that kinoin did not exist in Malabar kino, and that the constitution of kino-tannic acid could not be that of an anhydride of methoxy-pyrocatechin and gallic acid. The composition of the tannins is in hardly any case satisfactory known, and the configuration of the molecule to which the astringent and other properties are due is also unknown. By hydrolysis by boiling with acids and by fusion with alkalies they are decomposed, and among the decomposition products various phenols, such as pyrocatechin and phloroglucin, and hydroxy acids, such as gallic and proto-catechuic acids, are obtained. My efforts up to the present have been directed to the attempt to obtain the tannic acid, or some derivative thereof, in crystalline form, so as to be able to proceed with more certainty than if the analysis of amorphous products were attempted. All attempts to prepare the various tannic acids in crystalline form have hitherto proved unsuccessful, and the formulæ attributed to them have been based upon the analysis of more or less purified products produced by fractional precipitation or from metallic compounds such as those of lead and copper. Thus Etti analysed the precipitates produced by adding water to an alcoholic solution of kino red, while Bergholtz submitted to combustion the products obtained by precipitating solutions of kino-tannic acid by the addition of salt. The precipitates so produced were dialysed to remove adherent salt, but in addition to the objection that prolonged exposure of tannic acid solutions to the air is liable to produce alterations therein, Bergholtz found the total removal of salt impossible, and allowances had to be made for the ash left after the combustion.

My first experiments were based upon the observation that kino-tannic acid is soluble in alcohol and insoluble in chloroform or ether. A 10 per cent. solution in absolute alcohol was fractionally precipitated by the addition of ether (purified by treatment with caustic potash and redistillation), eight fractions being so obtained. None of these fractions differed in appearance from the original substance, being amorphous and dark red. They were each again fractionated in the same way with a like result, no trace of crystalline structure being visible even under the microscope.

Another method was then tried. Kino-tannic acid is soluble in water, but precipitated therefrom by saturating the aqueous solution with various salts or by the addition of mineral acids. Saline precipitates have, however, the drawback that it is impossible to entirely remove the adherent salt. I tried, therefore, precipitation with hydrochloric acid, this substance being

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[*] Communicated to the Pharmaceutical Society of Great Britain, at an evening meeting, in London, November 10, 1903.

[†] *P. J.* [4], **16**, 644.

[‡] *P. J.* [4], **16**, 840.

[*] 'Agricultural Ledger,' 1901, No. 11, p. 377.

[†] Communicated to the Pharmaceutical Society of Great Britain, at an evening meeting, in London, November 10, 1903.

[‡] *P.J.* [4], **16**, 676.

volatile, and, therefore, entirely removable under appropriate conditions. 100 Gm. of kino was dissolved in 1,000 C.c. of water by the aid of a gentle heat, and the clear liquid decanted from the insoluble matter which was deposited on setting the liquid aside for twelve hours. 10 C.c. of hydrochloric acid, sp. gr. 1·16, was then added, and the liquid set aside. A copious red amorphous mass (fraction A) was deposited, from which the supernatant liquid could be decanted almost clear. This deposit was collected and fractionated again in the same manner, but only slimy amorphous fractions could be obtained therefrom. The original filtrate was then separated into five fractions by treatment with hydrochloric acid gas. The method of precipitation by the gas in place of addition of strong hydrochloric acid solution was adopted in order to avoid undue dilution of the liquid, and also because the concentration of the acid could be more gradually increased and its addition discontinued when a sufficiently large fraction of the dissolved material had been precipitated. Operating thus, the fractions B, C, D, E, and F were obtained, and after removal of F the liquid was found to be nearly saturated with hydrochloric acid, and left only a small residue on evaporation.

Fraction B was in the form of an amorphous mass, but not so slimy as fraction A, while C, D, E, and F came down as fine sandy precipitates, which were filtered out with suction, washed with hydrochloric acid solution of about the same concentration as the liquid from which they were produced, pressed strongly between filter paper, and dried *in vacuo* over solid caustic potash until they ceased to lose weight, and the adherent acid was entirely removed. These last four fractions were in the form of a dark red powder, and under the microscope appeared as spherical transparent particles, without, however, any clear indication of crystallisation. As they all presented such a similar appearance, I submitted them to elementary analysis in order to see whether they exhibited a constancy in their composition as well as appearance. The following results were obtained from the various fractions, after drying to a constant weight in the water-oven :—

Fraction C.

(1) 0·1731 Gm. gave 0·3821 Gm. CO_2, and 0·0673 Gm. H_2O
C = 60·20 per cent.; H = 4·32 per cent.
(2) 0·1898 Gm. gave 0·4131 Gm. CO_2, and 0·0730 Gm. H_2O.
C = 59·4 per cent. ; H = 4·26 per cent.

Fraction D.

(1) 0·2126 Gm. gave 0·4622 Gm. CO_2, and 0·0834 Gm. H_2O
C = 59·29 per cent.; H = 4·36 per cent.
(2) 0·2034 Gm. gave 0·4456 Gm. CO_2, and 0·0824 Gm. H_2O
C = 59·73 per cent.; H = 4·49 per cent.

Fraction E.

(1) 0·1603 Gm. gave 0·3390 Gm. CO_2, and 0·0627 Gm. H_2O
C = 57·67 per cent. ; H = 4·35 per cent.
(2) 0·2095 Gm. gave 0·4419 Gm. CO_2, and 0·0838 Gm. H_2O
C = 57·52 per cent. ; H = 4·44 per cent.

Fraction F.

(1) 0·1957 Gm. gave 0·4071 Gm. CO_2, and 0·0790 Gm. H_2O
C = 56·73 per cent.; H = 4·49 per cent.
(2) 0·1672 Gm. gave 0·3460 Gm. CO_2, and 0·0676 Gm. H_2O
C = 56·43 per cent.; H = 4·49 per cent.

It was evident that the fractions were not of uniform composition, but it may prove, on further examination, that they approximate more nearly than the above figures indicate, owing to a variation in the state of hydration, produced by variations in the concentration of the acid liquid from which they were precipitated, this variable proportion of water not being expelled at the temperature of the water-oven. Thus it may happen that if dried at a higher temperature before combustion, the water-free residues may be nearly uniform, so far as their percentage composition is concerned, but it is not safe to trust such deductions too far, as the tannins lose water at various temperatures, forming so-called first, second, or, in some cases, third anhydrides by the loss of water in so many stages as the temperature is increased. The formation of these anhydrides of tannin is, however, never so sharp and definite as is the case, for example, with crystalline salts, which lose their water of crystallisation in several stages.

The failure to produce crystalline tannins may be connected in some way with their liability to oxidation, which results in the formation of so many products that it becomes impossible to separate any one of them in a state of parity. This tendency to oxidation is due, probably, to the hydroxyl groups, and I, therefore, endeavoured to prepare crystalline derivatives by substituting the hydroxylic hydrogen with acid and alkyl radicles.

Acetyl Derivative.

Kino-tannic acid does not react readily with acetic anhydride or with acetyl chloride, but, on heating, it dissolves, particularly if a minute trace of sulphuric acid be added. Sodium acetate did not appear to facilitate acetylation. The dark red product poured into water deposited pale reddish brown flocks, which, after washing, dissolved easily in acetic ether. This solution, set aside to evaporate slowly, deposited only amorphous matter, nor could better results be obtained by fractional precipitation on the addition of ether or alcohol to the acetic ether solution, the acetyl derivative being sparingly soluble in both the fluids mentioned. Since no definite crystalline product was obtained, it appeared useless to determine the amount of acetyl in the amorphous product.

Benzoyl Derivative.

Kino-tannic acid benzoylates freely by the Schotten-Baumann method. The reaction was carried out in a current of hydrogen, in order to minimise the rapid oxidation which occurs in alkaline tannate solution. 5 Gm. tannic acid in 200 C.c. 10 per cent. sodium hydroxide solution was benzoylated by the addition of 30 Gm. benzoyl chloride. The benzoyl compound came out as a pasty flesh-coloured solid, which gradually hardened to a crust on the sides of the flask, leaving the liquid only pale red. The precipitate was removed, rubbed down with 1 per cent. solution of sodium bicarbonate, then, with water, finally with alcohol, and then dried. It weighed 11 Gm., and formed a very fine salmon pink powder, soluble in chloroform and acetic ether, but only sparingly in alcohol, ether, or petroleum-ether. By means of these solvents no crystalline product could be obtained, and the chloroform solution boiled with animal charcoal, filtered, and set aside to evaporate slowly was no more productive. The benzoyl compound dissolves in melted phenol, but the product allowed to cool, and the phenol removed by alcohol, yielded only an amorphous residue.

Benzoylation by means of benzoic anhydride was also tried, the two substances being heated together to 100° C., rising gradually to 200° C. The melt, however, only yielded amorphous dark red products, and this method is evidently not as satisfactory as benzoylation in alkaline solution.

Methyl Compound.

2 Gm. of fraction F were dissolved in 100 C.c. methyl alcohol. 1 Gm. of sodium was then dissolved in 20 C.c. of methyl alcohol and the product added to the acid solution. A deep red magma was produced, owing, probably to the formation of the sodium compound of the tannic acid. 6 C.c. of methyl iodide were then added, and the reaction mixture, which became limpid again, was heated in a flask with a long reflex condenser tube to 70-75° C. A drop of the fluid, removed from time to time, gave increasing turbidity

when added to water, and after twenty hours' heating the product was poured into water. A thick, clotty precipitate formed, which, after washing, was dried *in vacuo*, and weighed 2·2 Gm. It was first extracted with chloroform, and the chloroform solution allowed to evaporate. The chloroform residue was then exhausted with alcohol, a part remaining undissolved, and the alcoholic solution, on cooling, threw down a deposit which was not crystalline, but, under the microscope, exhibited a striking resemblance in form to the spherical particles of the original kino-tannic acid, only much darker in colour. Repeated solution and deposition from alcohol yielded only a product in microscopic granules.

By Zeisel's method:—

0·0424 Gm. of the methylated compound gave 0·0938 Gm. silver iodide = 29·25 per cent. methoxyl (OCH_3).

The reaction mixture in the hydriodic acid flask consisted of dark red clots in a red fluid, so that the product could not be regarded as the unaltered regenerated tannic acid, and could not be utilised in deducing the formula of the methylated compound.

From the foregoing results it would appear that little success may be expected from an examination of kino, as it occurs in commerce at present, owing to the progressive changes which occur in it after issuing from the tree. These changes, which probably take place at first with great rapidity, under the influence of the oxydase, result in the formation of dark red oxidation products, which finally terminate in the production of phlobaphenes insoluble in alcohol, devoid of astringency, and constituting the gelatinous mass which forms in tinctures of kino. I am hoping shortly to receive a supply of liquid kino which has been heated to 100° C. immediately after issuing from the incisions in the tree; in which, therefore, the activity of the oxydase has been destroyed. It is well known that the fresh exudation is only pale red in colour, and an examination of this may be expected to lead to some definite conclusions as to the composition of the kino-tannic acid, since it will then be almost free from oxidation products. In view of the results already obtained, it was deemed useless to study the products produced by heating the kino with acids and alkalies, since no substance in a state of purity, and representing the unaltered tannic acid, could be isolated.

FURTHER NOTES ON THE DETECTION OF YEAST EXTRACT.

BY A. SEARL, F.C.S.

While the test published in the *Pharmaceutical Journal* of October 10 (page 516) gives satisfactory results in cases of substitution of yeast extract for meat extract, or gross adulteration of one with the other, it is not so suitable for the detection of small admixtures of the former.

I have now worked out a method by which one is enabled to detect an admixture of as little as 1 per cent., and this may act as an efficient corrective to the temptation which dealers will feel to work off by degrees stocks of yeast extract, masquerading as genuine meat extract, which are known to have been hurriedly withdrawn from the market since the test was published.

If the sample gives doubtful or negative results by that test, but is still open to suspicion, take from 50 to 100 grains and dissolve in 1 or 2 drachms water (according to quantity taken); add to this sufficient spirit (methylated will answer the purpose) to throw down all that is insoluble in alcohol. After vigorous shaking, separate the insoluble residue by decanting or filtering; dissolve this residue in 1½ oz. water, filter if necessary, and proceed as before. If yeast extract is present the characteristic bluish-white precipitate will be thrown down on boiling with the modified Fehling's solution, and may be collected and weighed.

For the information of those who wish to make experiments with this method, "Marmite" may be regarded as a typical yeast extract, and this is not sold as a meat preparation.

THE MAJOR EXAMINATION: ITS PAST AND ITS FUTURE.*

BY RICHARD A. ROBINSON, JUN.

"*Paullo Majora Canamus.*"

As most of you are probably aware, changes in the system of conducting the Major Examination of the Pharmaceutical Society are under consideration at Bloomsbury Square. I am sanguine enough to think that it would not be entirely valueless or uncongenial for members of this Association to have the opportunity of expressing their opinions as to what might or should now be done for the Major Examination and for the Major man. To consider the subject in all its bearings, it is necessary to know something of the causes which have led to the somewhat unsatisfactory state of affairs which now exists. I therefore make no apology for introducing my subject with a brief

Historical Outline

of the Major Examination itself.

In 1841, the first year of its existence, the Council of the Pharmaceutical Society adopted regulations for the examinations. These included a Minor Examination to qualify for associateship, and a Major Examination for membership. The examiners were to consist of the President and Vice-President of the Society, with eight dispensing chemists. The examinations were to come into being on July 1, 1842, but there were no candidates for the Major then, nor did any pass until February 20, 1844, when Mr. John Sparks was granted the first diploma. Jacob Bell's idea of what the Major Examination should be is shown by the following extract from one of his articles in the *Pharmaceutical Journal* of August 1, 1842:—

> When the Associate has sufficiently qualified himself, and wishes to change his condition by commencing business on his own account, his next step is to obtain the diploma of the Pharmaceutical Society by passing the Major Examination. This comprises the Pharmacopœia of the London College of Physicians; chemistry, materia medica, botany, and pharmacy as embodied in the Pharmacopœia; prescriptions and the antidotes for common poisons. The difference between this examination and the former (the Minor) consists in the degree of proficiency required on all the subjects, and the addition of the science of chemistry, botany, and the rudiments of toxicology, to those enumerated as applicable to Associates.

The article proceeds to state, definitely and in terms, that it was the intention of the Council to increase the stringency of the examination from time to time as the progress of education allowed. That intention has ever since been consistently carried out in practice.

Originally certain members of the Council were appointed as examiners, but by January 1, 1848, we find that the Board of Examiners consisted of eight members of the Society, four of whom at least were to be members of the Council. The Board met in London each month. It is at this date, too, that the first mention occurs of a written examination, attention being called in the Journal (**7**, 297) to the fact that the Major differed from the Minor in respect that it included written questions. Bell then said that the reason for having two examinations was that, if there were one only for Members and Associates, either it would be unnecessarily stringent for an assistants' qualification, or it would not be sufficiently complete to sustain the character of the Society.

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* Read before the Chemists' Assistants' Association, London, on Thursday, November 5, 1903.

The next change in the Major Examination was brought about by the

Pharmacy Act of 1852.

It had been the intention of the Council to provide that candidates for the diploma of a pharmaceutical chemist were to be examined "in the Latin language and classical knowledge, in botany, in materia medica, and in pharmaceutical and general chemistry, and toxicology." Objection was taken, however, by the Society of Apothecaries—then, as so often since, jealous of that inferior being, the druggist—to the legal recognition of toxicology as a subject with which the pharmaceutical chemist ought to be familiar; consequently the word was struck out before the introduction of the Bill in 1852. To satisfy objectors in Edinburgh and Glasgow, a clause was introduced providing for the appointment of a separate Board of Examiners for Scotland. As soon as the Bill had received the Royal Assent, the Scottish Board was duly appointed, and it was arranged that it should meet in Edinburgh four times a year, or as often as should be considered necessary.

At this period in its history no very definite syllabus of the examination was issued. I find, in the year 1857, the statement that the Major embraced all the subjects of the Minor, as well as a more minute acquaintance with the tests and antidotes for ordinary poisons. The knowledge of botany required was also in excess of that necessary in the earlier examination. In March, 1861, new regulations came into force, and

The First Full Syllabus

was published. This syllabus bears a striking resemblance in many respects to that now issued for the Minor, with the notable exception that the practical chemistry was much easier in those days. Eleven years later it was decided once more to raise the standard, and fresh regulations, to come into force in October, 1874, were adopted by the Council. (It will be remembered that in the meantime the Pharmacy Act of 1868 had been passed, and the Minor had become the qualifying examination for practice.) Dispensing, posology, and pharmacy were now removed from the subjects of the Major but a practical knowledge of materia medica and an elementary knowledge of light, heat, electricity and magnetism, were added to the requirements, together with the qualitative and volumetric analysis of those preparations for which the Pharmacopœia fixed a standard. The next change in the examination itself was made in 1876, when it was decided to abandon the practice of publishing the names of successful candidates in order of merit, and of singling out for "honours" those who had especially distinguished themselves in the examination. Once again, in October, 1891, the Council of the Pharmaceutical Society, consistently acting on the principle laid down nearly fifty years previously (*vide supra*), came to the conclusion that the progress of education permitted of a still further widening of the scope of the Major Examination, and adopted new regulations, which came into force in January, 1892. Candidates were now informed that they would have to undergo a written examination in chemistry and physics, botany, and materia medica; then, on a subsequent day,

A Practical Examination,

on the basis of the new Schedule. It was stated, when the above regulations were proposed for adoption, that the Examiners were "decidedly of opinion that, since the Major Examination is a voluntary honours examination, it is not desirable to continue to insist upon the full standard of proficiency in all four of the subjects. It is thought that candidates acquitting themselves extremely well in two of the subjects, biological or chemical, should be allowed to pass on that basis." The Bye-laws adopted at the same time as the new schedule included an important clause (Section X., cap. 13), which permitted of effect being given to that recommendation. The new Bye-law runs thus :—

> Persons desiring certificates of competent skill and qualification to exercise the business, or calling, of pharmaceutical chemists shall produce to the Registrar evidence of having been previously registered as chemists and druggists, and shall be examined in more extended knowledge of botany, materia medica, chemistry, and physics, *or any two of them*, which examination shall be called the Major Examination.

In June, 1894, it was decided to elect to the Boards of Examiners teachers of chemistry and botany, who, "in association with one or two other examiners appointed by the Boards," should conduct the Major Examination. It is in no way a reflection on the distinguished men of science who have held office as examiners, in pursuance of the above resolution, since 1894, to say, as has recently been freely stated, that the Major Examination has of late years lost touch with practical pharmacopedics. Perhaps this is because the association with "one or two other examiners" has not been quite so close as was then contemplated, but, apart from that, such a development is not unnatural. The thin end of the wedge had been driven in by the Act of 1868, which really necessitated a more stringent Minor Examination in pharmacy, dispensing, and the like; and most of the changes subsequently introduced into the Major have undoubtedly tended in the same direction.

I do not wish to trouble you unduly with dates, but I must, for the sake of completeness, make mention of the additional requirements which came into force in October, 1899. Interference of light was added to the syllabus in physics; the practical use of the nitrometer, and the detection of methyl alcohol in tinctures, etc., to the schedule in practical chemistry; while both in materia medica and botany more practical work was included, principally in the mounting of microscopical preparations and the application of micro-chemical tests. As a matter of fact, the examiners have not taken full advantage of the powers which at this time were conferred upon them. Certain items in the practical chemistry syllabus, for example, have never formed the basis of questions in the examination.

The Privileges of the Major Man.

To discuss the past and present privileges of the man who has passed the examination, I must ask you to bear with me while I go back to the point from which I started—the foundation of the Pharmaceutical Society. And first it is necessary to inquire into the original qualification for membership. After the granting of the Royal Charter of Incorporation in 1843, a bye-law was passed, by which the privilege of membership was open to three classes. These were—(1) Founders and original members, (2) persons in business before the date of the Charter, (3) other persons who should have passed the Major Examination. Those rules continued until the passing of the Pharmacy Act, 1852. When that Bill was introduced, it contained a clause restricting the business and title of pharmaceutical chemist or pharmacist to those who should have been registered as pharmaceutical chemists. The words which protected the business were struck out, but the

Protection of Title

was granted. By Section XII. of the 1852 Act, it was enacted that no person not duly registered as a pharmaceutical chemist should use or exhibit the title. It should be noted particularly that—unlike Section XV. of the Act. of 1868—the protection still holds good against all and sundry unregistered persons or incorporate entities. As in Section XVII. of the later Act—the section which makes the regulations under which poisons may be sold—in Section XII. of the Act of 1852, there is a distinct prohibition :—"It shall not be lawful" to assume or use the title of pharmaceutical chemist or pharmaceutist unless duly registered as such. By the same Act of 1852, all persons who were previously members of the Society were declared to be entitled to registration as pharmaceutical chemists. In December, 1852, however, byelaws were adopted which widened the area from which members of the Society could be drawn. It was resolved that those who had commenced business between the granting of the Charter in 1843 and June 30, 1852, should, on application within a specified period, be entitled to registration as chemists and druggists, and *also* to membership of the Pharmaceutical Society. Membership was also placed within the reach of those persons who had been admitted as associates of the Society before July, 1842. The remainder of the history of membership and its limits will be familiar to most of you. The Act of 1868 brought within the barrier those who, though not pharmaceutical chemists, were in business on their own account before the passing of the Act, and a clause in the Act of 1898 made all persons who passed the Minor Examination eligible for membership. The proposal which led to the introduction of that clause into the Act of 1898 met from within with the hostility which experienced politicians have learnt to expect whenever any pharmaceutical legislation is proposed. Several pharmaceutical chemists tried hard to preserve the last remnant of their once-exclusive privilege of membership; but the claims of the associates were too strong to be resisted.

To summarise the effect of the changes introduced between 1844 and 1903, I think you will have seen that the general tendency has been to make the Major Examination more difficult, to introduce more practical work, to displace pharmacy by what is sometimes called pure science, and to take from the Major man, little by little, the privileges which were once exclusively his.

JURY SERVICE.

But I come now to a highly-prized privilege which the pharmaceutical chemist in England and Wales has been allowed to retain. I refer to the right of exemption from the distinction of serving with eleven other honest men on a jury. The privilege has been enjoyed for over forty years, the Juries Act containing the exempting clause having been passed in 1862. The reason for the exemption of pharmaceutical chemists only was that there was no means of defining at that date who or what was a chemist and druggist. If all who assumed that title had been exempted, too many persons would have claimed the right. Moreover, it must be remembered that, in 1862, pharmaceutical chemists registered under the Act of 1852 were the only legally recognised practitioners of pharmacy. As will be seen from the wording of the exemption—"pharmaceutical chemists actually in practice"— it was upon professional grounds only that the concession was granted. As it was, the exemption for pharmaceutical chemists was only secured by the persistence of the House of Lords, after the Lower House had twice refused to grant pharmacists any exemption at all. Every pharmacist who has any conception of the possible horrors of jury-service should be eternally grateful to the House of Lords. Looking back, one cannot help regretting that exemption from jury service was not secured for members of the Pharmaceutical Society; for I see no reason to suppose that this would have been a matter of greater difficulty than exemption for pharmaceutical chemists. It would have tended to increase enormously the membership of the Society, and thereby the unity and Parliamentary strength of the whole calling.

OTHER ADVANTAGES.

With the protection of title and exemption from jury service, I have mentioned the most prominent advantages of passing the Major which now remain. The advantage of greater knowledge, for its own sake, is obvious, but is not a point which I desire to press. I would rather remind you of certain concrete and practical advantages which are apt to be overlooked. It is still the fact that the Major man is preferred for all the better posts in pharmacy. In hospital dispensaries, in the manufacturing laboratories of wholesale houses, on the teaching staff of the schools where pharmacy is taught, in most of these you will find Major men preferred. Pharmaceutical chemists are almost invariably chosen to fill the pharmaceutical seats on the boards of examiners, and I believe there are still some few retail pharmacies where the Major man commands a better salary than the chemist and druggist. However that may be, there is an unmistakable decrease in the numbers who enter for the examination.

(*To be concluded.*)

THE DISPENSING OF RESINOUS TINCTURES.[*]

BY HAROLD WILSON, B.SC. (LOND.),
Pharmacist to University College Hospital.

A class of preparations, generally called "resinous tinctures" for the sake of brevity, present certain difficulties when dispensed in an aqueous vehicle. In my experience every dispenser has a panacea which he employs indiscriminately to overcome these difficulties; but doubts have long been in my mind as to the utility of following the same method of treatment for each of these tinctures. I, therefore, carried out a few experiments, which were afterwards supplemented, to clear up speculations. Before proceeding to describe these it will be just as well to make quite clear what the difficulties are which have to be overcome. Compound tincture of benzoin is a solution of resinous matter in strong alcohol; when this tincture is poured into water the weak alcohol produced is no longer capable of dissolving the resin, which is therefore precipitated. The precipitate is at first in a fine state of division, but it rapidly agglutinates to form lumps, which adhere to the sides of the bottle and render accurate dosage impossible. This aggregation of fine particles to produce larger ones is brought about by surface tension which exists on the boundary surfaces between solids and liquids. The enlargement of the particles has the effect of reducing the area of the surface in contact with the liquid, and is an example of the universal law which causes matter to place itself in the position of least resistance. In some cases, however, we obtain a colloidal solution instead of precipitation, and, under certain conditions, such solutions deposit resin very slowly, if at all. Picton and Linder,[1] in most interesting papers, have shown that in such cases, although the substance appears to be in true solution, it is really separated in particles which can be detected by the aid of a powerful microscope. These particles are seen to undergo a regular series of movements (Brownian movement), so that there is no tendency towards deposition. They concluded from the results of their experiments that there was no sharp line of demarcation between so-called true solutions and pseudo or colloidal solutions; but to further discuss this question would take me beyond the bounds of the present paper.

These colloidal solutions are very sensitive to the presence of salts, acids, and bases, all of which cause precipitation of the dissolved matter unless some chemical combination takes place. They can only be prepared in anything approaching a stable condition by using pure distilled water. When resinous tinctures are dispensed with distilled water, it is probable that in all cases some part of the resin remains in solution (colloidal), though the greater proportion may be precipitated; in some cases the whole remains in solution, and no precipitation takes place, at least for a time. Although colloids are said to have an indeterminate solubility, it appears, from my experiments, that weak solutions are more stable than strong ones. As just mentioned, colloidal bodies are easily precipitated from their aqueous solution by salts, acids, and bases when no chemical action takes place between the colloid and the substance added. It will be seen, therefore, that any resinous tinctures which are compatible with distilled water may give trouble when prescribed with either salts or acids. With alkalies or salts which yield strongly alkaline solutions by hydrolysis (such as borax) they may, however, yield clear solutions owing to combination of the acid resins with alkali to form soluble compounds.

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[*] Address to the School of Pharmacy Students' Association, November 6, 1903.

[1] *Journ. Chem. Soc.*, February, 1892.

The object of my experiments was to answer the questions:—

(1) Is any suspending agent required when a resinous tincture is dispensed in an aqueous vehicle?

(2) If so, what are the relative values of acacia and tragacanth under varying conditions?

The Use of Suspending Agents.

The first question was answered by observing the results obtained by dispensing each tincture (*a*) with distilled water, and (*b*) with a solution of a neutral salt.

With Distilled Water Only.

Mixtures were made as follows:—

℞ R. T. .... ʒi.
Aquam .... ad ℥i.

The following tinctures yielded colloidal solutions or easily-diffusible precipitates or a mixture of the two:—Tincturæ cimicifugæ, hydrastis, lupuli, podophylli, benzoini simplicis, and myrrhæ. The two latter only remained as satisfactory mixtures for a few days when the above formula was employed, but with a smaller quantity of tincture they were much more permanent.

Separation of resin or other matter not readily diffusible was more or less rapid with the following:—Tincturæ asafetidæ, benzoini compositæ, cannabis indicæ, cubebæ, guaiaci ammoniatæ, jalapæ, quininæ ammoniatæ,* sumbul, tolutanæ, benzoini simplicis, and myrrhæ (the two last only when present in quantity).

With Solutions of Salts.

Since the precipitation of colloids from solution is practically independent of the nature of the salt used, sodium chloride has alone been employed in these experiments.

Mixtures were made as follows:—

℞ R. T. .... ʒi.
Sodii chloridi .... gr. x.
Aquam .... ad ℥i.

Of the foregoing tinctures which form satisfactory mixtures with distilled water, all require the addition of some suspending agent except the two following:—Tincturæ cimicifugæ and lupuli. As the addition of salts always increases separation, all those tinctures incompatible with water alone become still more so on the addition of salts; to these must be added the following:—Tincturæ myrrhæ and benzoini simplicis (in all proportions), hydrastis, and podophylli.

Acacia Compared With Tragacanth.

In order to determine the relative value of acacia and tragacanth as suspending agents, mixtures were made with and without the addition of salts.

Without Salts.

Mixtures were made as follows:—

℞ R. T. .... ʒi.
Muc. acaciæ .... ʒi.
Aquam .... ad ℥i.

and

℞ R. T. .... ʒi.
Muc. tragacanthæ .... ʒi.
Aquam .... ad ℥i.

In the first few cases different methods of mixing were tried. Thus, in the case of acacia (*a*) the mucilage was diluted with twice its volume of water, the tincture then added, and afterwards the remainder of the water. (*b*) The mucilage was diluted with as much water as possible, and the tincture then added. As anticipated, it was found that (*b*) yielded the better results, the precipitate being in a finer state of division and more easily diffusible. This method was therefore exclusively used for further experiments.

In the case of tragacanth the following methods of mixing were tried:—(*a*) The tincture was mixed with the calculated quantity of powdered tragacanth, twice its volume of water added and the mixture agitated, and then the remainder of the water added. (*b*) The mucilage was diluted with twice its volume of water, the tincture then added, and afterwards the remainder of the water. (*c*) The mucilage was diluted with as much water as possible, and the tincture then added.

(*a*) Was found unsatisfactory in some cases; there is not much difference in the results yielded by (*b*) and (*c*), but the latter possesses slight advantages. This method was therefore exclusively used for further experiments.

The results of the experiments went to show that in each case acacia yielded a more elegant mixture than tragacanth; but where the quantity of precipitated matter was considerable it was unsuitable, owing to the fact that the separated matter adhered to the base of the bottle, and could only be diffused with difficulty. This was the case with the following:—Tincturæ benz. co., jalap., myrrh., and tolut.

On the other hand, acacia yields the better results with tinct. asafetidæ, benz. simp. (when necessary), cannab. ind., cubebæ, guaiac. ammon., quin. ammon., and sumbul.

Tragacanth is useless for tinct. benz. co., quin. ammon., and tolut. It answers well for tinct. jalap. and for tinct. myrrh. when the quantity of the latter tincture is so large as to necessitate some addition. In other cases, it possesses no advantages over acacia, and does not form such elegant mixtures.

It will be seen that neither alone is suitable for tinct. benz. co. or tolut. The two combined, however, answer admirably, and make a perfect mixture. The following formula can be used:—

℞ R. T. .... ʒi.
Muc. acac. .... ʒi.
Muc. trag. .... ʒi.
Aquam .... ad ℥i.

Dilute the mucilage of acacia with as much water as possible; add the tincture, and, lastly, the mucilage of tragacanth. This method of procedure is the best possible.

With Salts.

Mixtures were prepared from formulæ similar to those described, but with the addition of 10 grains of sodium chloride to each ounce. The presence of salts does not affect the value of acacia where its use has been previously recommended, except in the case of tinct. cannab. ind., which is now better dispensed with tragacanth. Tinct. podoph., which, in the absence of salts requires no addition, is, in their presence, better dispensed with acacia. Tragacanth still answers for tinct. jalap. and myrrh., and must now be used for tinct. hydrastis, which in the absence of salts requires no addition. A mixture of acacia and tragacanth makes a good mixture with tinct. benz. co. and tolut. as in the absence of salts. Glycerin, syrups, etc., were tried in some cases, but though they have some "suspending" effect, their use is, as a rule, insufficient; obviously they can only be used when ordered in the prescription.

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* This is conveniently grouped with the resinous tinctures, as it requires similar treatment.

The following list, arranged alphabetically, may be useful for reference:—

Asafetidæ.—Acacia to be used in all cases, because more elegant than tragacanth, which in other respects is equally good.

Benz. Co.—Acacia and tragacanth must both be used in all cases.

Benz. Simp.—No addition necessary in absence of salts if quantity be small. Acacia good in all cases. Tragacanth good in absence of salts, but useless in their presence.

Cannab. Ind.—Use acacia in absence of salts and tragacanth in presence of salts.

Cimicifugæ.—No addition necessary in any case.

Cubebæ and Guaiac. Ammon.—Use acacia in all cases.

Hydrastis.—No addition necessary in absence of salts. Use tragacanth in presence of salts.

Jalap.—Use tragacanth in all cases.

Lupuli.—Same as cimicifugæ.

Myrrh.—No addition necessary in absence of salts if quantity be small. If quantity be large, tragacanth should be used in all cases.

Podoph.—No addition absolutely necessary in any case, but the addition of acacia makes a more elegant mixture in the presence of salts.

Quin. Ammon.—Use acacia in all cases, but such mixtures become unpresentable after about fourteen days.

Sumbul.—Same as cubebæ.

Tolut.—Same as benz. co.

It may be emphasised that these recommendations are the result of observations on the keeping properties of all the mixtures made. None has been kept less than a month, and it has been found that what yields the most elegant product when freshly prepared may become anything but satisfactory on keeping.

THE STUDENTS' COLUMNS.

BOTANY.—2.

Plant Growth.

Surely everybody has at one time or another asked himself the question, "How does a plant grow?" What makes the plants we see on every hand get larger?" It is such an everyday thing to see this growth daily and hourly going on around us that perhaps some thoughtless persons have never quite realised what a wonderful thing it is. The gardener puts a handful of seeds into the ground, he waters them, and expects in due course to see the young stems and leaves appearing; the young plant increases in size, it eventually flowers, and yet, maybe, there are many who have scarcely given a thought to this triumph of Nature's handiwork. To understand our subject quite thoroughly, some knowledge of chemistry and vegetable anatomy is necessary, but we will try to deal with the question in a simple and intelligible way, and will strive to get a clear idea of the great functions which plants fulfil, and how they do it.

The growth of animals is perhaps more easily accounted for; we see them eat, we know that their food is chemically acted upon in the stomach, and is turned into blood, flesh, etc., but what is there in the vegetable kingdom that we can compare to this process. What does the plant possess that can serve for a mouth? First, let us consider what the plant has to live on. It is obvious that earth, air, and water are the only things a plant can get at. It follows, then, that it must depend upon these for its existence; therefore, it must have some wonderful power of taking in some part of its surroundings, and turning this into stem and leaves. The only other way in which its growth would be possible would be to suppose it endowed with the power of creating itself out of nothing which is manifestly absurd. For the time we will put the earth out of the question, and we will consider the air and the water, and ask ourselves how they can possibly nourish the plant. Now we all know that perfectly pure air consists of a mixture of two gases, viz., oxygen and nitrogen; but besides these there exists to a very slight extent in the atmosphere the gas carbon dioxide. Only about four parts in every ten thousand parts of air are normally present, but, nevertheless, as we shall see presently, it is upon this gas that all plant life is dependent. With regard to water, it seems scarcely necessary to remind the reader that it is composed of the two gases, hydrogen and oxygen, both of which play a very important part in the building up of plant substance. Next let us turn to the plants themselves, and let us see what constituents we can trace. Take any plant and burn it; presently we shall have nothing left but a small quantity of ash. The amount of ash yielded by different plants varies within very wide limits, but let us assume that we have left earthy matter to the extent of about 3 per cent. of the original weight of the plant when dry. But we must consider also the gaseous products of the combustion, the 97 per cent. of the original weight that passed away as gas during the burning. Had we collected these gaseous products we should have found them to have consisted nearly entirely of three elements, viz., carbon, hydrogen, and oxygen; here, then, surely we have direct evidence that our plant is made up very largely indeed of the elements composing water and carbon-dioxide gas.

Root Absorption.

Having learnt the importance of water and carbon-dioxide for plant life, let us now pass on to the consideration of how and by what part of the plant the water is absorbed. It is by the roots lodged in the damp soil that most of the moisture which plants feed upon is taken in. The soil may be regarded as an aggregation of particles of inorganic matter derived originally by the breaking down of rocks and of decaying animal and vegetable matter. Each particle is surrounded by a delicate film of moisture, and this water, generally spoken of as hygroscopic water, is the source of the plant's supply, but it is so firmly adherent to the soil particles that it escapes ordinary observation. Now in all the youngest roots and rootlets there are developed a short distance behind their apices a number of delicate hairs; these hairs act as absorbing organs, they make their way into the interstices of the soil, and thus come into the closest relationship with the tiny particles of which it is composed. The hygroscopic film of water is thus only separated from the interior of the root hair by an extremely delicate cell wall. This hygroscopic moisture will not be pure water, but it will contain in solution very minute quantities of various inorganic salts which it has dissolved from the soil, while inside the root hair we have the cell sap, which contains a certain amount of acid in solution. By virtue of this a process known as "osmosis" is set up; this depends upon the well-known physical law that all liquids of unequal density separated by a porous partition have a tendency to mix. This can be readily proved by the student by means of a very simple experiment. Take a small bladder and fasten it to the end of a long, moderately narrow, tube; fill the bladder and part of the tube with treacle and water; and immerse it in a vessel of water, and note carefully the height at which the mixture stands in the tube. After a few hours the water round the bladder will have become discoloured, showing that the treacle is passing out, while it will be evident that water is running in, for the treacle and water will have risen in the tube, probably far above the level of the water outside, and if left long enough, perhaps will have flown out of the neck at the top.

But to return to our plant. The acid cell sap in the root hair corresponds to the treacle and water in the bladder. It will now be readily understood how, by the law of osmose, the water from the outside finds its way into the plant. Now the roots, leaves, and, indeed, all parts of the plant are seen under the microscope to be made up of millions of separate little cavities, each cut off from the surrounding ones by closed partitions of membrane. All that plants take into their system has to pass through these partitions, and this fluid alone can do. Now all that the root hairs imbibe has to be carried up to the leaves to be digested there, so while these root hairs are absorbing, the stem is conveying the crude sap to the leaves. There is no set of open tubes or pipes for this sap to rise through in an unbroken stream, although the fibres and the vessels of the wood are tubes, most of them several times longer than wide, yet their ends do not open into each other; a closed partition divides each cavity from the next, which the sap has to get through some way or other. Our experiment with the treacle and water in the bladder has taught us that some of the contents of a root hair will ooze out through its porous walls, but that this will be replaced by a greater quantity of outside water. The contents, then, of this cell will be a mixture of its original contents and water; clearly this will be thinner than the liquid in the cell directly above it, therefore the same thing will take place again, and some of the mixture will mount into this second cell. This process will be repeated again and again, until some portion of the water from the soil has passed into the larger roots, and through them up into the stem. The reader may now, perhaps, think that as the mixture gets thicker and thicker with every cell it passes through, by the time it has gone through a few thousands, there will be no perceptible difference between the density of its contents and that of the cell immediately above it. This is true; but this difficulty is removed by the fact that the cells of every part of the plant which are exposed to the heat of the sun, are being partially emptied by evaporation, and the space thus made is speedily filled up by the contents of the cells in their neighbourhood. Thus it is that the water from the earth is enticed into the leaves, as they, having the greatest surface exposed to the air, are most exposed to evaporation.

Root Pressure.

Another very important factor influencing the transport of water up the stem, in addition to these slow currents we have considered, must now be mentioned. The root hairs, which we have seen are constantly absorbing water by reason of the quantity of osmotic substance present in them, get so full that a certain stretching force is exerted on the cell wall which bounds them. Cells in such a condition are called "turgid," and the condition itself is known as "turgescence." The tension set up by the elastic recoil of the cell wall is sufficient to force the water by a process of filtration under pressure through the cell walls, and thus the water is forced up the woody axis of the plant by a kind of pumping action. So great, indeed, is this pressure, that the water may escape in drops, and it is a common experience to find a large drop of water on the edge or apex of young blades of grass in the early morning.

It was mentioned above that the liquid which the root hairs absorbed was not pure water, but that it contained a minute quantity of inorganic matter in solution. It was found, too, when burning our plant, that we had left a certain quantity of mineral ash. Were we to analyse it we should find it to consist certainly of the four metals, potassium, magnesium, calcium, and iron, combined as nitrates, chlorides, phosphates, or carbonates. Many plants contain other elements variously combined; indeed, the composition of the soil in which the plant grows determines to a great extent what minerals enter it, although these various substances are not taken up indiscriminately, in fact, every plant possesses a "selective power"; that is to say, it is able to remove from the soil just those substances which are especially necessary for its life. Many of the substances found in the soil are readily soluble in the water present; such can enter the plant without difficulty. Other substances insoluble in pure water are soluble in water containing carbon dioxide, which is always present in the soil, while the solution of many others depends upon the acid sap which moistens the tips of the root hairs.

PRACTICAL NOTES AND FORMULÆ.

Hydrogen Peroxide Tooth-Paste.

H. Kuehl gives the following formula for a tooth-paste containing hydrogen peroxide. It is not only a useful antiseptic, but imparts a brilliant whiteness to the teeth, and dissolves the products of decomposition which cause discoloration. Calcium carbonate, 25; powdered soap, 5; glycerin and hydrogen peroxide, of each sufficient to form a paste. Perfume with peppermint and lavender oils.—*Apoth. Zeit.*, **22**, 705.

Hydrogen Peroxide in Skin Cosmetics.

H. Kuehl states that glycerin and rose water used in the treatment of chapped hands is improved by the addition of hydrogen peroxide, thus:—Glycerin, 2; rose water, 2; hydrogen peroxide, 1. Mix. It may also be mixed with ointments for the treatment of skin affections. Intimately mixed with lanoline, it produces a smooth, soft, white cream, which may be used to bleach the skin. A mixture of equal parts of lanoline and zinc ointment, combined with hydrogen peroxide also forms a useful ointment for the same purpose.—*Apoth. Zeit.*, **22**, 705.

Incompatibility of Chloral Hydrate and Borax.

Having to dispense a gargle in which chloral hydrate and borax were prescribed, Meurin found that the salt decomposed the chloral, liberating chloroform. The action takes place rapidly on warming, but proceeds slowly at ordinary temperatures. It may be obviated by the addition of a little glycerin. —*L'Union Pharm.*, through *Répertoire* [3], **15**, 105.

Silvering Powder for Metals.

Copper, brass, and some other metals may be silvered by rubbing well with the following powder:—Potassium cyanide, 12; silver nitrate, 6; calcium carbonate, 30. Mix and keep in a well-closed bottle. It must be applied with hard rubbing, the bright surface being afterwards rinsed with water, dried and polished. Great care must be exercised in the use of the powder on account of its poisonous nature. It should not be allowed to come in contact with the hands.—*Annales de Pharm.*, **8**, 555.

Bridal Bouquet.

Sandal oil, 30 minims; rose extract, 4 fl. oz.; jasmin extract, 4 fl. oz.; orange flower extract, 16 fl. oz.; essence of vanilla, 1 fl. oz.; essence of musk, 2 fl. oz.; tincture of storax, 2 fl. oz. (The tincture of storax is prepared with liquid storax and alcohol (90 per cent.), 1 : 20, by macerating for seven days.) —*Spatula*, **9**, 410.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

EVENING MEETING IN LONDON.

TUESDAY, November 10, 1903, at 17, Bloomsbury Square, London, the Vice-President (Mr. C. B. Allen) in the chair.

The Chairman apologised for the absence of the President, who was representing the Society that evening at the dinner of the Society of Apothecaries. Introducing Mr. Edmund White, the Vice-President said that Mr. White was exceedingly well known in the pharmaceutical world, and he was sure that all present would give him their best attention.

Mr. Edmund White, B.Sc. (Lond.), F.I.C., read two papers on

Kino.

The papers are printed in full at page 702 *et seq.*

The Chairman said that, as far as he was able to judge, the results so far arrived at were more or less negative. But if Mr. White's investigations resulted in the pharmacist being able to produce a tincture which would not gelatinise, that, at any rate, would be a gain to pharmacists. And, although kino was not used much in pharmacy, it was a valuable substance, and it was possible that there would be a considerable revival in its use if the difficulty were surmounted in the way which Mr. White had suggested. He invited discussion from the members present.

Mr. E. M. Holmes said that the gelatinisation of tincture of kino presented one of the most difficult problems to be found in pharmacy, and Mr. White was to be congratulated on taking in hand and attempting to solve the problem. He had had the privilege of assisting Mr. White by forwarding specimens of gelatinised tincture of kino which had been submitted to him. Some years ago Mr. J. Bosisto had shown at the Colonial Exhibition a variety of kino obtained from eucalyptus; that was the most soluble kind that had come on the market, and was obtained as follows:—The trees were scarified, the juice collected, strained, and boiled, and the product was known commercially as red gum. Mr. Bosisto had thus anticipated Mr. White's process, but he had not found that the gelatinisation was due to an enzyme. He (Mr. Holmes) would mention that enzymes had been found still active in certain leaves which were apparently dry.

Mr. J. C. Umney said he would like to thank Mr. White for his excellent paper. Mr. White had referred to kino as possibly the cheapest tanning material of the future. He (Mr. Umney) had noticed that kino had shown almost the greatest fluctuations of any drug in the market in the last fifteen years. It had been 5d. per lb., and it had been 16s. per lb. Presumably, Mr. White's statement was based on the present value—*i.e.*, about 5d. per lb.—and if there were again a scarcity it would not be available for tanning purposes. He hoped the paper would result in all so-called kinos being collected in such a way as to retain their properties uniformly. Mr. White had elucidated the pharmaceutical mystery of the gelatinisation of tincture of kino, and their thanks were due to him for that.

Mr. E. J. Millard thought that the gelatinisation of tincture of kino was somewhat of a bugbear. He had personally made very large quantities of the tincture, and often kept them some months, but in only one case had he found gelatinisation. In that case he thought that evaporation of alcohol had something to do with it. He would ask whether Mr. White's sample of tincture contained the full and proper percentage of alcohol. He had found that glycerin greatly improved the preparation, and that if it were properly kept there was little chance of gelatinisation. He (Mr. Millard) was accustomed to dissolve kino by heat in diluted alcohol, guarding against evaporation, and samples so made had kept perfectly for many months. But he thought Mr. White's paper important, because there were so many kinos on the market which would not bear investigation in their origin.

Mr. Harold Wilson, in expressing his appreciation of Mr. White's contribution, said that the value of research could not always be gauged by positive results; as a matter of fact, the results of the most valuable investigations were sometimes negative. Mr. White's paper proved the truth of this latter assertion, and he was to be congratulated on making to the literature of chemical research such a valuable addition. Referring to the results which certain chemists claimed they had obtained, whilst the experiments of others in the same direction had been unsuccessful, he very appropriately suggested that it was better to admit that no result could be obtained than to imagine one could see something which was not there.

Professor Greenish said that he wished to add his appreciation of Mr. White's research, and of the service which he had rendered to pharmacy. The occurrence of these enzymes directed their attention to the possibility of enzymes being also present in other preparations which they were apt to consider perfect. Very likely in other tinctures, also, changes of a similar nature took place which were not so evident, but altered the nature of the preparation given to the patient. It was a question whether there might not be at least one enzyme in nearly every drug they handled. Many years ago ipecacuanha wine gave trouble by depositing. At that time he had been reading the results of some of Pasteur's work, and he examined the deposit in the ipecacuanha wine microscopically. He found no organism, but, after boiling, a gelatinous precipitate formed, and the wine remained bright for some time. He applied the knowledge which he then obtained to the making of ipecacuanha wine and the sale of it in his business. He used the method of heating with other drugs, and, in some cases, was successful in improving the preparation. In such he had now no doubt that he had destroyed an enzyme. The lesson for pharmacists was that they should examine all such preparations from time to time. Whether or not it was always desirable to prevent the change from taking place was another question. Mons. Léger, President of the Paris Society of Pharmacy, was opposed to the sterilisation of tinctures, because he thought that they might be altering the therapeutic value of the preparations. He thought that the thanks of pharmacists were due to Mr. White for bringing the subject forward, and for showing how such tinctures as tincture of kino might be made more permanent.

Mr. F. C. J. Bird said that the assertion that the gelatinisation was due to a biological reason was quite a new fact, and had never occurred before to anyone. He asked the author of the paper if he could explain why in some cases the addition of glycerin prevented gelatinisation, whilst at other times it failed. Personally, he would be inclined to think that the use of glycerin did much to improve the tincture.

Mr. White, replying to the points raised in the discussion, said he gathered from what had been said by Mr. David Hooper that there would be no difficulty with regard to a sufficient supply of kino if the difficulties in the use of the drug were surmounted. The great advantage of kino as a source of tannic acid was that there was practically no process of extraction necessary; the tannin was there very nearly ready for use. He was afraid that Mr. Millard was in outer darkness. If that gentleman had read his (Mr. White's) first paper he would have seen that all his objections were answered there. Some kinos, of course, gave better tinctures than others, but they never knew what was the source of the kino on the market. He did not think that the addition of glycerin had much effect. Certainly it was not so in all cases. A sample which he showed, and was perfectly solid, had been made with glycerin. He entirely traversed Mr. Millard's remarks, as he himself had made many samples and kept them some years. He recalled his previous remarks that samples of tincture of kino might be heated to 90° C., or, in some cases, to 95°, without losing activity. Of course, most enzymes were destroyed at a temperature between 60° and 70° C. He wished to thank Mr. Holmes for his kindness in obtaining specimens; it was his intention to tax Mr. Holmes's goodness still further.

The Chairman said he had not meant to say anything disparaging when he spoke of Mr. White's results as "negative," especially as Mr. White had promised that there was more work to come. He himself had been engaged in pharmacy all his life, but since he was a boy he had never seen a sample of tincture of kino which did not gelatinise. He would now call on Mr. William Garsed, who had held an honourable position in the Research Laboratory for many years, to read his paper on the

Assay of Crude Cocaine.

The paper, which was read in abstract by Mr. Garsed, will be published in the Journal later. Mr. Garsed has been able to determine, with considerable accuracy, by hydrolysis, oxidation, and bromination experiments, the quantities of cinnamylcocaine and truxilline in the crude alkaloid, and calculates the amount of cocaine present by difference.

The Chairman said it was hardly necessary for him to tell Mr. Garsed how much his work on cocaine had been appreciated. In the time at his disposal, it had been impossible for the author to give more than a rough outline of the investigations he had been carrying on. This research into the chemistry of cocaine had originated in a desire on the part of Mr. Garsed to find out the amount of the alkaloid contained in preparations which had been placed on the market. Since then it had become to him his great work. He felt proud to say that Mr. Garsed was fast becoming the greatest living authority on that interesting alkaloid.

Mr. Walter Hills endorsed the testimony of Mr. Allen in a few graceful sentences; he felt they were getting nearer to solving a problem which would prove invaluable to the General Medical Council, who wanted to be furnished with a means of standardising the pharmacopœial and other preparations of coca leaves.

Mr. H. Wippell Gadd said he had listened to Mr. Garsed's paper with respect, mingled with awe. He had noticed a great variety in the "density" of commercial samples of cocaine hydrochloride, and recently he had been obliged to complain to a celebrated firm of alkaloid manufacturers, who replied with the stereotyped phrase that the alkaloid was obtained from the best possible source. Perhaps Mr. Garsed could explain the variation in density to which he had alluded.

Professor Wynne wished to endorse Mr. Hills' remarks concerning Mr. Garsed's perseverance. He had been much struck with the way in which Mr. Garsed had attacked a very difficult problem. He would like to say that in his opinion a very definite point had been reached in the assay of crude cocaine. If they admitted that the crude alkaloid consisted almost entirely of truxilline, cinnamyl-cocaine and cocaine, and if they had a method of determining the two former within 5 per cent.—which was a higher limit of error than Mr. Garsed's—then they had approached very near to Mr. Hills' ideal of a definite process for the assay of cocaine, and he did not think that anything nearer was likely to be achieved. The School of Pharmacy and the Pharmaceutical Society were much indebted to the Salters' Company for providing funds, which alone enabled such work as that to be carried on in the Research Laboratory for three years. The thanks of all were due to Mr. Garsed for the grit and perseverance with which he had solved a most difficult problem.

Mr. Garsed, replying to the discussion, said that the variation of density to which Mr. Gadd had referred was probably due to the crystals being very minute and closely aggregated. He wished to thank Professors Collie and Wynne for the great assistance which they had given him, and he would thank the Chairman and other speakers for their kind remarks concerning himself.

The Chairman again expressed their indebtedness of the meeting to Mr. White and Mr. Garsed, and announced that there was a small exhibition of apparatus in the Examination Hall. The Council hoped that this, together with improvements in the catering arrangements, would add to the appreciation of the evening meetings. It was distinctly encouraging to see the greatly increased attendance that evening. He hoped that those who found themselves unable to arrive at the beginning of the meeting would make a point of coming to the "conversazione" in the Examination Hall afterwards.

The meeting then terminated, and the company proceeded to the Examination Hall.

THE EXHIBITION.

In the Examination Hall were displayed several interesting pieces of pharmaceutical apparatus. The

Cachet Machine

supplied by Mr. Johann Schmidt, of Nürnberg, and designed for the preparation of cachets without damping the wafers, attracted no little attention. The two halves of the cachet fit together like a pill-box and its lid. The wafers are all practically of the same size to start with, but in the machine one side is somewhat stretched, and thus fits quite tightly over the other. The same firm had also sent a novelty in the shape of flat oblong envelopes of rice, about 1½ in. by 1 in. in size, and of practically no depth. The envelope may be filled with powder, sealed by a flap projecting at one end, and swallowed whole.

Mr. W. H. Martindale, Ph.D., had several exhibits on view. The most interesting of these related to the subject of the moment,

Radio-Activity.

In addition to a tube of radium bromide, Mr. Martindale exhibited Sir William Crookes's spinthariscope, an instrument designed to show the bombardment of γ Rays on a zinc sulphide screen. Discs of bismuth and copper respectively were shown, covered with a deposit of polonium. Some 4 milligrammes of polonium is obtained from 2,000 kilogrammes of pitch-blende. The polonium also gives off γ rays.

Mr. Martindale's other exhibits included flat tubes containing a paste of carbolised double cyanide, and intended for the pockets of soldiers in the field. Cyanide paste (Cheatle) is the short description of the substance. Bottles and tubes for eye-drops and hypodermic solutions were also shown. One tube, in which the solution may also be heated, is fitted with a bent arm terminating in a fine point, and may be used by the patient for dropping a solution into his own eye. Another interesting exhibit of Mr. Martindale's was the complete outfit of apparatus and reagents for the examination of stomach contents, as suggested by Dr. George Herschel.

Mr. F. C. J. Bird's

Still for the Recovery of Alcohol

is by now well known to most pharmacists in London and elsewhere. Mr. Edmund White suggested to Mr. Bird certain modifications of the original design, and these have been adopted in the still shown at the meeting, which is circular in shape. That fact tends to make the still stronger, and possibly more suited to the needs of those who make tinctures on a comparatively small scale.

Two machines were shown for use in the preparation of

Suppositories by Cold Pressure.

Of these, one was lent for the occasion by Mr. J. A. Jennings, Chief Dispenser at the London Hospital, and was of Colton's make. The material is placed in a tube and pressed through a finely-perforated plate into the mould. The pressure is applied by turning a wheel, which acts on a screw bearing a piston. The other machine, of more novel design, had been sent by Mr. Hans Jenny, St. Gallen. This was shown in working order by Professor Greenish. The material, previously prepared in the form of a coarse powder, is fed by means of a small funnel into the conical moulds, of which there are ten in the little machine exhibited. Ten pistons, hanging from a bar, are then pressed down by means of a screw, and perfect suppositories are thus formed.

Additions to the Library and Museum.

The Curator showed the recent additions to the Society's Museums, which are described at page 713 *et seq.*, and on other tables Mr. Knapman had arranged the books recently added to the Society's library in London. This arrangement should tend to increase the interest taken in the borrowing department of the Library, as, although mention is made every month in the *Pharmaceutical Journal* of additions to the Library, it is not always possible to realise the nature of the books from that brief notice.

LIBRARY, MUSEUM, SCHOOL, AND HOUSE COMMITTEE.

At a meeting of this Committee, held on Wednesday, November 11, 1903, the following reports were presented :—

Attendance in Library.

	Total.	Highest.	Lowest.	Average.
London, October	394	35	1	15

Circulation of Books.

	Total.	Town.	Country.	Carriage Paid.
London, October	221	117	104	£1 4s. 6d.
Edinburgh, October...	365	216	149	6s. 10d.

Donations to the Library (London).

University of Birmingham :—Calendar, 1903.

University College, London :—Calendar, 1903.

University College, Reading :—Calendar, 1903.

Owens College, Manchester :—Calendar, 1903.

Royal College of Surgeons of England :—Calendar, 1903.

Royal College of Physicians of London :—Catalogue of Accessions to the Library, 1903.

Royal Philosophical Society of Glasgow : — Proceedings, Vol. 34, 1903.

Royal Medical and Chirurgical Society, London :—Medico-Chirurgical Transactions, Vol. 86.

H. M. Secretary of State for India :—Flora of the Upper Gangetic Plain, by J. F. Duthie, Vol. 1, Part 1, 1903.

Mr. J. Medley Wood, F.L.S., Natal Botanic Garden :—Natal Plants, Vol. 2, Part 3 ; Vol. 4, Part 1.

Mr. H. Antcliffe, Sheffield Union Dispensary :—Pharmacopœia of the Sheffield Union, 1903.

Prof. E. Schaer, Strassburg :—Geschichte der Pharmakologie und Toxikologie in der neueren Zeit, 1903 ; Oxydationswirkungen, 1903 ; Über die Verwendung des Chloral-hydrates, 1903.

Donation to the Library (Edinburgh).

School of Medicine of the Royal Colleges, Edinburgh :—Calendar, 1903 4. Three copies.

Attendance in the Museum.

	Total.	Highest.	Lowest.	Average.
London, October	503	39	4	18

Donations to the Museum (London).

Mr. A. Wilson, Ilkley :—Fresh Roots of *Œnanthe crocata.*

Mr. E. W. Pollard, Ryde : —Fresh Root of *Œnanthe crocata.*

Mr. H. P. Hearder, Plymouth :—Fresh Root of *Œnanthe crocata.*

Mr. A. W. Hudson, Cranbrook :—Fresh Root of *Œnanthe crocata.*

Mr. T. Ough, Lostwithiel :—Fresh Root of *Œnanthe crocata.*

Mr. H. Finnemore, London :—Specimen of Yellow Quassia Wood.

Messrs. Bowyer and Bartlett, London :—Specimen of the Fruits of a Species of *Myristica.*

To the Herbarium.

Mr. R. Wilson, Bassingham :—Three Specimens of *Salix*, cultivated as Osiers.

The Rev. E. F. Linton :—Specimens of *Salix basfordiana* and *S. decipiens.*

Mr. W. H. Hammond, Canterbury :—Specimens of *Obione pedunculata* and *Polygala austriaca.*

Mr. J. Medley Wood, Durban :—'Natal Plants,' Vol. II., Part 3, and Vol. IV., part 1.

During the past month specimens have been sent to the Museum for classification as follows :—19 drugs, 12 flowering plants, 7 algæ, and 20 fungi.

Purchase of Books.

The Committee authorised the purchase of the undermentioned works :—

For the Library (London).

The New Phytologist, 1902, and continuation.

Pusey-Caldwell, The Röntgen Rays in Therapeutics and Diagnosis.

Schimper, Plant-Geography on a Physiological Basis, 1903.

For the Library (Edinburgh).

Bloxam, Chemistry, 1903.

Muter, Analytical Chemistry, 1903.

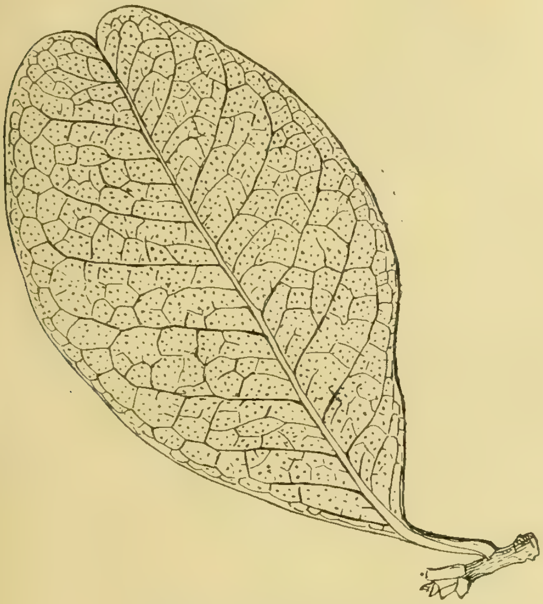
RECENT ADDITIONS TO THE MUSEUMS.

BY E. M. HOLMES, F.L.S.

Curator of the Museums of the Pharmaceutical Society.

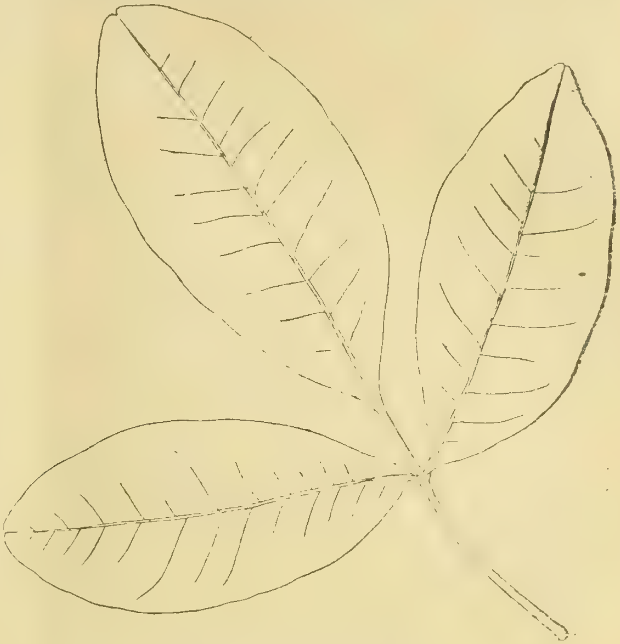
Guadeloupe Jaborandi.

A new variety of jaborandi has recently appeared on the London market. In size the leaves are broader in proportion than those of Pernambuco jaborandi, and have the lateral veins similarly prominent on the upper surface, but they are as a rule more obovate in outline, and when they approach in shape those of the official drug, they are always larger and broader. The colour is a purer green without the brownish tint so frequent in the leaflets of *P. jaborandi*. The leaflets are evidently those of *Pilocarpus racemosus*, the only species, except *P. heterophyllus*, which has simple as well as trifoliate leaves, *i.e.*, leaves in which the usually trifoliate leaves are reduced to a single leaflet near the top of the shoots; but in the latter species the leaves are much smaller and different in shape, being narrowly elliptical.

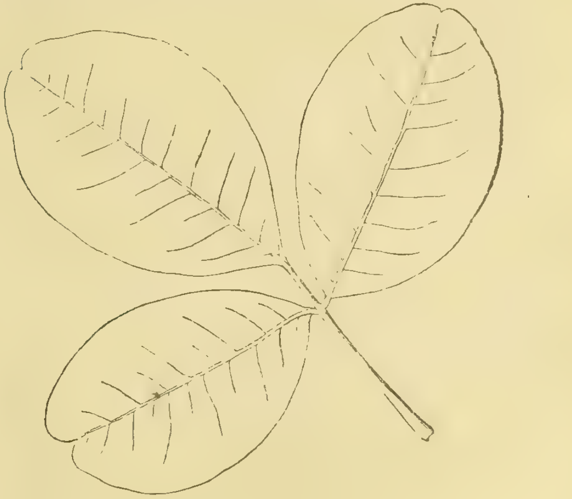


Guadeloupe Jaborandi.
Simple leaf (natural size).

P. racemosus is a native of the Antilles, growing in dry rocky places in Martinque and Guadeloupe, and forms a bushy shrub 3 to 3½ metres high. It flowers from November to January, and sometimes from June to September. The flowers are of a saffron-yellow colour. They have rather long pedicels, and are arranged in the form of a long raceme. It is described fully in the 'Flore Phanerog. des Antilles Françaises' (p. 138), and in the 'Annales de l'Institut Coloniale de Marseille,' III. (1896). It formed the subject of a thesis for the doctorate in medicine by Mons. G. Rocher, of Toulouse, in 1893-9. Dr. Rocher makes the following observations concerning the drug. The leaves have the midrib prominent on the upper surface, and their width is often half their length or more. The leaves are not furnished with hairs but have sunken glands, as in *P. jaborandi*. The palisade cells occupy about one-sixth of the thickness of the leaf. Both upper and lower epidermis possess a striated cuticle, but the striæ are much less marked on the lower surface, on which alone stomata occur. The leaves afford the same alkaloids as those of the official kind, viz., pilocarpine, jaborine, and pilocarpidine, the total yield being 1·0 per cent., of which three-fifths are pilocarpine, which is rather more than that contained in the leaves of *P. pennatifolius*. The essential oil it contains differs from that of *P. pennatifolius* by its solid consistence and agreeable odour. An infusion of 2 Gm. of the leaves produces an abundant salivation.



Guadeloupe Jaborandi.
Pilocarpus racemosus (half size).



Guadeloupe Jaborandi.
Pilocarpus racemosus (half size).

The leaves imported into the London market were examined in the laboratory of Messrs. Wright, Layman, and Umney, Limited, who found only 0·34 per cent. of total alkaloids.

Ochoco Nuts.

These fruits are stated by Dr. Voigt to be exported from West Africa, and have been described under the name of *Ochocoa gabonensis*, Pierre, and by Warburg as *Scyphocephalium* *ochocoa.* The fruits are about 1-1½ in. in width, and ½ to ⅝ in. in thickness, with a hard, thin, brittle shell. They have a circular basal scar, and internally resemble an areca nut, but are of softer substance and are more nearly allied to the nutmeg. These fruits belong to the N.O. Myristicaceæ, and were imported into France as an oil seed. According to a note in the *Pharm. Journ.* [4], **3**, 380, the fruits are variously referred to *Scyphocephalium kombo*, Warb., and those from the Cameroons to *S. chrysothrix*, Warb. Ochoco nuts are stated to yield 61 per cent. of a fat, melting at 70°. J. Möeller identified an ochoco seed as a species of *Dryobalanops*, 'Dingl. Polytechn.," June, 1880, 432. It would appear, therefore, that the name is given to the produce of several distinct trees, the ochoco fruits of the Gaboon being derived from *Ochocoa gabonensis*, Pierre.

Orites excelsa, R.Br.

Aluminium has not been found in phanerogams, except in traces, although it has been met with in cryptogams. In *Orites excelsa,* N.O. Proteaceæ, Mr. H. G. Smith has found it to occur in greater abundance than in any of the cryptogams, and has read a paper on the subject before the Royal Society of New South Wales. The aluminium appears to be used by this plant almost to the exclusion of all other elements, the excess being deposited in cavities and natural fissures of the wood and bark as a basic aluminium succinate. If the ash of the burnt bark be tested with nitrate of cobalt, the characteristic blue colour for alumina will be visible, the other salts present not being in sufficient quantity to interfere with the reaction. The *Grevillea* genus does not appear to use aluminium as a food.—*Journ. and Proc. Roy. Soc. N.S. Wales,* **37**, 107.

Zarishk.

The specimens of zarishk consist of the fruits of one or more species of *Berberis*, probably *B. vulgaris* and *B. lycium,* used in Northern India in bilious complaints and as a febrifuge. It is described by Dr. Dymock in the 'Materia Medica of West India,' p. 26-28, and by Dr. G. Watt in 'Dict. Econ. Prod. India,' I., pp. 442-446. Shirkisht is a white saccharin substance, classed as a manna, and is believed to be the produce of *Cotoneaster nummularia*, Fisch et Mey. It is of rare occurrence in commerce. These drugs were exported from Kurrachee to London as trial samples only. An account of Shirkisht is given in 'Pharmacographia,' II. Ed., p. 415.

Asclepias Curassavica, Linn.

Dr. Dathan St. Cyr, of Hayti, who presented specimens of this plant, states he has obtained remarkable results from its use in the treatment of phthisis, and has recently visited Paris with the view of having the properties of the plant investigated in physiological and bacteriological laboratories. It is met with in this country as an ornamental greenhouse plant, and in the West Indies is known as bastard ipecacuanha, and sometimes being exported to this country under the name of ipecacuanha' In Central America the plant is called "Cancerilla." It was examined chemically by Gram, 'Archiv. für Exp. Path.,' XIX., 389. See also the 'National Dispensatory,' 1894, 298; Lunan' 'Hort. Jamaicensis,' 63-68; *Pharm. Journ.* [3], **16**, 186.

Codonopsis Tangshen.

This is a Chinese plant belonging to the N.O. Campanulaceæ, with twisting stem and greenish flowers, bearing an external resemblance to those of *Cobœa scandens*, but much smaller. It has recently been cultivated, with other rare Chinese plants, by Messrs. Veitch and Son, and is the source of one of the varieties of the Chinese drug known as "Tangshen." In the Museum collection of the Chinese drugs there are two kinds of tangshen, and a specimen of the nutang root. According to Dr. A. Henry there is no question of *Codonopsis tangshen* yielding large quantities of tangshen. In the note in 'Icones Plantarum' reference is made to different kinds of the drug as follows:—Tangshen is a very important Chinese drug, which is used by the poor as a substitute for the costly ginseng. The name signifies ginseng from the district of Shang Tang in Shansi, but the drug is now produced in the different provinces of Hupeh, Szechuan, Shensi, and Shansi. Ichang and Hankow are the other ports from which the drug is exported to the amount of 500 tons annually, the province of exportation being Hupeh, Szechuan and Shensi. In the Tang district of Hupeh large quantities of the wild growing plant are dug up everywhere in the mountain. *C. tangshen* is the principal source of the drug. The root of *C. lanceolata*, B. and H., is also said to be collected, but it is much inferior in quality, having a disagreeable odour and commanding a very low price, and it bears a different name. Another kind in the market is known as Lutang, *i.e.*, tangshen from the Luan prefecture of Shansi. This is perhaps the root of *Campanumœa pilosula*, from which Père David collected near Pekin ('Pl. Davidianæ,' I., 193). This plant is given as the source of the drug from Tientsin by Anton in his 'Alphabetical List of Chinese Drugs,' Nos. 853 and 1,251. Another variety of the drug, known as Ming Tan, is produced in the province of Anhwei, of which the annual export of Wuhu amounts to sixty tons annually. The plant yielding Ming Tan has not yet been identified, but Dr. A. Henry thinks it will prove to be an *Adenophora*. In the Chi-wu-ming, according to Dr. A. Henry, a picture is given of what is called local tangshen as distinguished from the official drug, and the picture in folio 23, sheet 54, looks like *Campanumœa javanica,* Bl.

Ocimum viride, Willd.

A good deal of discussion took place a few months ago in the *Times* and other papers concerning the statement that this plant drives away mosquitoes. The plant has been proved not to possess the properties attributed to it.—*Pharm. Journ.* [4], **16**, 659; **17**, 230.

Polygala amarella, Crantz.

This plant was only recently discovered by Mr. J. Cryer to be a native of Britain, occurring in a limited district of the mountain limestone, near Shipton, in Yorkshire. It bears much resemblance to *P. calcarea*, but the flowers are smaller, the lateral sepals are narrower than the capsule, which is rounded at the base, not middenly narrowed, as in *P. calcarea*. The plant is illustrated and described in the *Journal of Botany*, X. 41, 113, tab. 450.

PHARMACEUTICAL SOCIETY OF IRELAND.

MEETING OF THE COUNCIL.

Wednesday, November 4, 1903, at 67, Lower Mount Street, Dublin, the President, Mr. Johnston Montgomery, in the chair.

Mr. Kelly raised a personal question with regard to some remarks made by Mr. Wells at the last meeting of the Council, and a somewhat lengthy discussion ensued, which was not of great importance or interest except to the individuals concerned.

The Late Sir George Duffey.

The President moved that a record be made on the minutes of the Council's regret at the death of Sir Geo. Duffey, and that a copy of it be sent to Lady Duffey, with an expression of the Council's sincere regret at her bereavement.

Dr. Walsh seconded the motion, which passed unanimously.

Correspondence.

A letter from the Privy Council transmitted a copy of the report to the Lord-Lieutenant of the newly-appointed Visitor, Sir John W. Moore, M.D.

A letter from the Petty Sessions Clerk of Ballinasloe, enclosed £13 6s. 8d., being two-thirds of the fines imposed on Messrs. L. Curry and T. Hibbett.

A letter from the Curator of Trinity College Botanical Garden, Dublin, conveyed the permission of the Board to Mr. Laird, the Society's lecturer in botany, to give demonstrations to his class in the Garden.

On the motion of the President, seconded by the Vice-President, thanks were voted to the Board and the Curator.

Educational.

A report from a special committee, which had been appointed to consider a letter from the Department of Science and Art, stating the terms on which the Department would recognise the Society's courses in chemistry, recommended the Council to take no further steps in the matter, as they could not advise a recognition of the Society's chemistry course as an elementary stage of the subject.

Mr. Smith said the recommendation of the Committee settled the matter. The Department could only see their way to recognising an elementary stage of chemistry, and the stage under which the Council thought they could get their students in was no longer adopted by the Department in Ireland. The total grant that they could earn from the Department would be about £2 per student.

Committees.

The President said it was time that each of the committees should adopt the practice usual in public and corporate bodies of appointing a chairman. It would greatly facilitate the transaction of the business of each committee, and bring the committees more into touch with the Council, as each chairman would have a full grasp of the business of his committee, and be able to put the details before the Council in the best way.

The Vice-President said it was what was being done in the Pharmaceutical Council in England.

Other Business.

On the motion of Mr. Smith, seconded by Mr. Kelly, it was ordered that a sum of £200 should be transferred from the Society's current bank account to 2½ per Cent. Government Stock.

Three resolutions passed at the recent annual meeting of the Society were reported, the first proposing the acceptance of a two years' certificate in practical pharmacy from assistants; the second calling for absolute secrecy in voting at the elections; and the third, asking that the Local Government Board should empower boards of guardians and other public bodies to give a preference to Irish manufactured drugs when the prices were nearly the same as those of English contractors.

Mr. Brown moved, and Dr. Walsh seconded, the adoption of the first resolution.

After a short discussion, in which Mr. Smith, Mr. Vincent Johnston, Mr. Kelly, and the Vice-President and President took part, it was decided to refer all the three resolutions to Committee.

On the motion of Mr. Johnston, seconded by Mr. Brown, Messrs J. Henry, LL.D., and D. O'Sullivan, M.P.S.I., were re-elected Preliminary examiners; and Mr. J. Guiler, M.P.S.I., was re-elected Examiner for the Botany and Materia Medica Division of the Licence Examination.

CHEMISTS' ASSISTANTS' ASSOCIATION.

ORDINARY MEETING.

Thursday, November 5, 1903, at 73, Newman Street, W., the President, Mr. A. B. Britton, in the chair. There was a fairly good attendance, and after the reading of the minutes and the election of five new members, Mr. R. A. Robinson, Jun., communicated a paper on

The Major Examination.

Mr. Robinson sketched the history of the Major Examination, showing the various changes which have been made in the syllabus from time to time, and pointed out that during the past five or six years there has been a considerable decrease in the number of candidates. The text of the paper is printed in part at page 704 *et seq.*

The President said that he had not previously been aware that the division of the examination had been almost optional for the past ten years. It was not surprising, when one considered all the subjects it covered, that the syllabus had not been utilised to its full extent. He thoroughly agreed with the author of the paper that the Major Examination was not sufficiently recognised; but as things were at present there was no material advantage in passing the examination except the personal satisfaction of holding a higher diploma. He thought that Fellowship of the Society for Major men would be a distinct advantage. With regard to the point as to whether employers preferred Major men, he certainly had not found it so, nor had he found that the pharmaceutical chemist was able to command a higher salary than the chemist and druggist. In regard to the subjects of examination, he thought the advanced chemistry, as at present taken, was a great mistake, and that it should be made more practical. He did not agree with the suggestion that such subjects as photography should be included in the Major syllabus, neither did he think that botany should occupy such an important place as it does; he should, however, like to see histological botany carried a little further, and practical applied chemistry might very well take the place of theoretical chemistry.

Mr. Wallis said that the pharmaceutical chemist should be able to understand all the work of the British Pharmacopœia. He ventured to say that there was not one Minor man who could carry out the tests and processes of the B.P. and at the same time understand the why and the wherefore of what he was doing. In fact, there were very few Major men who thoroughly understood the Pharmacopœia. With reference to chemistry, there was a suggestion that candidates should take either chemistry or materia medica, and one other subject. He did not think a candidate could study the materia medica of the Major syllabus without knowing more chemistry than was included in the Minor syllabus. Also, there were the numerous tests for essential oils, in which refraction and optical rotation played an important part. These necessitated a knowledge of physics as well as chemistry. What he wished to point out, however, was that it was practically impossible to separate chemistry and materia medica. He did not think it was necessary or desirable that the syllabus should teach optics, that might very well be left to the optician.

Mr. Paterson agreed that it was not desirable to separate chemistry and materia medica. He thought the Major syllabus should aim at producing men who would be able to standardise their own galenicals. He did not agree with a suggestion recently made by Mr. Wootton that the Major examination should be divided.

Mr. Finnemore was inclined to think that the decrease in the number of Major candidates was partly a matter of supply and demand, and that if larger salaries were offered to pharmaceutical chemists than to chemists and druggists, there would be more candidates for the higher qualification. With regard to the syllabus, he certainly thought more attention might be given to the histology of drugs, and that chemistry and materia medica should be included. If anything was excluded he thought physics and advanced botany might very well be left out, because the candidate who wished to pass an examination in either of those subjects could go in for the B.Sc. degree of the London University.

Mr. Town thought employers preferred Minor men rather than pharmaceutical chemists, hence the decrease in the number of candidates.

Mr. Strother was of opinion that one of the reasons why more men did not go in for the Major Examination was because the bulk of the employers were Minor men, or chemists and druggists, and were apt to be somewhat jealous of those holding a higher qualification than themselves.

Other members having spoken, Mr. Robinson replied, and a vote of thanks to him for his paper terminated the proceedings.

SCHOOL OF PHARMACY STUDENTS' ASSOCIATION.

INAUGURAL MEETING.

Friday, November 6, 1903, at 17, Bloomsbury Square, London, Professor Greenish in the chair.

Mr. Harold Wilson, B.Sc., a former Secretary of the Association, read a paper on "The Dispensing of Resinous Tinctures." The paper is printed in full at page 706.

The Chairman complimented Mr. Wilson on his paper. He emphasised the fact that the students were acquiring scientific knowledge in order to apply it to the solution of the every-day difficulties of the pharmacist. Mr. Wilson's experience of the superiority of tragacanth over acacia in so many instances was in some respects a surprise. He was to some extent prepared for this, as he had found some years ago that tragacanth made a better mixture with tincture of guaiacum.

Mr. Robinson said that Mr. Wilson's admirable paper illustrated two important general principles: first, that the best way to dispense a mixture might vary according to the time the mixture was to be kept; and, secondly, that when two different methods of solving a dispensing difficulty were unsuccessful, a combination of the two methods might prove satisfactory.

Mr. Paterson asked how Mr. Wilson's results were affected by the acidity of mucilage of acacia.

Mr. Finnemore said that his experience confirmed what had been said of the value of tragacanth, and asked for information as to the effect of using compound tragacanth powder and heating the mixture so as to disintegrate the starch.

Mr. Wallis suggested that the acidity of mucilage of acacia would account for the greater precipitate in mixtures containing tincture of podophyllum and some other resinous tinctures. Acid was often used to aid the precipitation of resins. He complimented Mr. Wilson on his excellent paper.

Mr. Perrédès referred to the use of simple tincture of benzoin, mixed with water, as a lotion for the complexion.

Mr. Wilson, replying to the points that had been raised, said it must be remembered throughout that tragacanth was a better suspending agent, though not so good an emulsifying agent, as acacia. He saw no advantage in compound powder of tragacanth: the starch and sugar were of no value. He did not think that acacia should be used with tinctures of jalap, myrrh, and tolu, however short a time the mixture was to be kept. He concluded by expressing his great interest in the progress of the Students' Association.

Mr. Hills proposed, and Mr. Hewlett seconded, a vote of thanks to Mr. Wilson. The vote was carried by acclamation, and the meeting terminated with a vote of thanks to the Chairman.

BRADFORD CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Tuesday, November 10, 1903, Mr. J. A. Mitchell in the chair.

Mr. Arthur Hanson read a paper on

The British Pharmaceutical Conference.

Mr. Hanson, who has, for several years past, taken an interest in the Conference, briefly sketched the circumstances of its formation and the objects as defined in its constitution. He alluded to its value in fostering investigation and research, and spoke of the great usefulness of the 'Year-Book on Pharmacy,' and the sets of text-books provided out of the Bell and Hills Fund, the valuable services of the Formulary Committee, and so forth. He then gave a detailed report of the visit of the Bradford delegates to the last conference at Bristol. Alluding to the reference by Mr. Idris to the question of doctors dispensing, he agreed that both the doctor and the chemist often went over the line, and expressed the hope that at some future date it would be possible for the representatives of the medical profession and the Council of the Pharmaceutical Society to come to some definite understanding on the question. Describing the various arrangements of the Bristol programme, whilst he expressed his appreciation of the pleasures of the Conference, he gave voice to the hope that more time would be found in future years for a thorough discussion of the important matters raised at these meetings. It was the duty of the pharmacist, by integrity, legitimate enterprise, and earnest scientific work, to raise the standard of his calling and thus facilitate the acceptance by the medical profession of a state of things in which he will reap the reward of his labours, and both professions will be accorded an enhanced amount of confidence and respect by the public. To such an ideal as this the Pharmaceutical Conference had rendered such services that it should command the gratitude, sympathy, and membership of the whole craft.

Mr. Newboult proposed a vote of thanks to Mr. Hanson for his paper. He could testify most heartily to the educational value of the Conference.

Mr. Dutton seconded, and said that he felt quite tempted to go to Sheffield next year.

The resolution was supported by Mr. Silson and Mr. Marshall, and was carried unanimously.

Mr. Hanson, in reply, said that attendance at the Conference was of great value, if only for the fact that it made it so much more interesting to follow the movements of the leaders of pharmaceutical movements when one had met them face to face.

Charity Shopping Day.

The meeting discussed a circular from the Bradford Chamber of Trades, advising the tradesmen of Bradford to meet with a firm refusal any suggestion which might be made in favour of a charity shopping day, and it was decided to comply with the request, a general opinion being expressed that such an institution would be distinctly against the interests of tradesmen.

Suggested Buying Section.

Mr. Beecock, of Leeds, who was asked to give some information as to the Leeds Association, said that they were making a new effort to infuse fresh life into the Association. The buying section was a separate association, and had a membership of fifty. It had been in existence about eight months.

Mr. Waddington said he had some doubts whether it was not better to have the buying section as a part of the general Association. In Bradford it had certainly been found that the institution of the buying section in connection with the general Association had strengthened the latter.

The meeting then ended.

MIDLAND CHEMIST-DISPENSERS' ASSOCIATION.

ANNUAL GENERAL MEETING.

Wednesday, November 4, 1903, at the Great Western Hotel, Birmingham.

The report for the year showed a balance on the right side, and also that the list of members included the majority of the qualified dispensers in the neighbourhood of Birmingham. Moreover, members have come from distant places, such as Bradford, Cheltenham, and Sheffield. The members present considered they had cause for congratulation on the work of the past year, and looked forward hopefully to the future. The following officers were re-elected :—Mr. T. Whitmore Peck, President; Mr. F. J. Richards, Treasurer; Mr. F. Foster, 84, Burlington Road, Birmingham, Secretary.

DEWSBURY AND DISTRICT CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Monday, November 9, 1903, The President, Mr. R. Gledhill, in the chair.

Some discussion took place on the new

Medicine Stamp Regulations.

The President stated that fresh concessions had been made during the past week. Any patent medicines, labelled "for organs of the body," such as kidney pills and other similar medicines, could be sold without liability to duty by outsiders.

Mr. W. Stead said he was of opinion little good would result from a discussion of the subject. He moved that further consideration of the question be adjourned until January.

The motion was seconded by Mr. A. B. Barker and carried.

The Secretary (Mr. G. Walker) gave a report of the proceedings at the

West Riding Federation

meeting at Bradford, stating that the business done was of very little interest.

Mr. Gledhill also spoke.

Mr. Stead brought forward the question of the proposed

Cash on Delivery

parcel system. This question had received the attention of the *Pharmaceutical Journal*, which asked for the opinions of subscribers. On the face of it the prime movers in the matter were the proprietors of large departmental stores in provincial towns. If the system came into force small traders would suffer. He moved

> That this Association expresses its strong disapproval of the cash on delivery scheme now under the consideration of the Postal authorities, being of opinion that its operation would be detrimental to the majority of small traders, and would at the same time afford facilities for fraud and imposition on the general public by unscrupulous advertisers.

Mr. R. Broadhead said the proposal would be to the detriment of small traders.

Mr. S. N. Pickard seconded the motion, remarking that the scheme would be a great means of encouraging fraud.

The resolution was unanimously adopted.

It was agreed to hold the annual dinner in February next.

STOCKPORT CHEMISTS' ASSOCIATION.

MONTHLY MEETING.

Wednesday, November 4, 1903, at the Albert Hall, Stockport, Mr. Wm. Dodge in the chair.

Mr. Orrell opened a discussion upon the protection of prices of poisonous medicines (patent and proprietary).

Mr. Wilson, Mr. Dodge, Mr. Arnfield and others spoke in favour of protection, and it was unanimously decided to leave the matter over for individual consideration until the next meeting, when they will try to come to an unanimous agreement on the prices of those medicines (proprietary) which only chemists can sell.

SOCIETY OF CHEMICAL INDUSTRY.
(MANCHESTER SECTION.)

OPENING MEETING OF THE SESSION.

Friday, November 6, 1903, at the Midland Hotel, Manchester.

The Chairman, Mr. J. Carter Bell, Public Analyst for the Borough of Salford and the County of Cheshire, delivered an address on

Municipal Chemistry.

That was, he said, all those things in chemistry which were connected with the life of a corporation, and upon which the chemist to the corporation had to advise. It should include all analyses of food and drugs; all those chemicals which a corporation, as a body, was in the habit of using, such as kinds of disinfectants, oils, paints, and cements; analyses of waters, sewages, and effluents, gas, and air. He would offer a few suggestions whereby improvements might be effected. Take the Sale of Food and Drugs Acts. When an inspector bought an article of food or drug he had to divide the sample into three parts—one for the vendor, one for the analyst, and the third for himself. There was a treble expense, and often the very object was defeated, for, as a rule, the inspector was well known, and special articles were kept for him, which, naturally enough, would be perfectly pure. That was strikingly shown by the Local Government Board report. Samples obtained by the inspectors showed only 10 per cent. of adulteration, whereas samples bought by private persons showed over 30 per cent. of adulteration. With regard to disinfecting powders submitted to corporations, many of them were almost worthless. In his younger days a pink powder was submitted to him for analysis. It was said to contain 15 per cent. of pure carbolic acid. The price was £10 per ton. Practically, it contained no carbolic acid at all, but was simply a mixture of lime and heavy tar oils. Young chemists, fresh from college, wanted special training for analytical work. They could determine copper in a salt, but hopelessly failed in attempting to determine the copper in a sample of pickles. How was this defect to be remedied? By having a good technical laboratory specially devoted to municipal chemistry. As much accuracy and care was required in municipal chemistry as in ordinary research work. It would try the skill of the student and make him none the worse chemist if he were to determine accurately and quickly the following: Tannin in tea, boracic acid in milk, alumina in bread and flour, copper in pickles, tin in sugar, fatty acids in butter, fusel oil in whisky, olive stones in pepper, arsenic in beer, benzoic acid in wine, and glucose in jam. Besides the fallacy of "digestive tea," there was an equally fallacious "ferruginous wine." Practically, this wine frequently did not contain iron, for the quantity found was a mere trace—being one part in 150,000. He considered this a cruel deception.

HUDDERSFIELD CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Tuesday, November 10, 1903, at the Queen's Hotel, Mr. Walshaw in the chair.

Vote of Condolence.

Before the ordinary business of the meeting was entered upon the Hon. Secretary proposed a vote of condolence with the President on the death of his wife.

The motion was seconded by Mr. Broadbent and silently adopted, all the members rising to their feet.

The President acknowledged the vote.

The West Riding Federation.

The Chairman and Mr. Broadbent were the delegates to the recent annual meeting of the West Riding Federation of Chemists' Associations, and Mr. Walshaw made a brief statement in that connection.

Election of Officers.

Mr. Stephens moved that Mr. Walshaw should be re-elected President.

Mr. Buckley interposed with a motion that a vote of thanks should be accorded jointly to the retiring President and Hon. Secretary.

Mr. Sykes seconded this motion, and it was unanimously adopted.

As regards the proposed re-election of the President, Mr. Walshaw said that he would accept the office for another twelve months on the condition that at the end of that term someone else would succeed to the position. The office should go round.

Mr. Buckley seconded the motion, which was unanimously adopted.

Messrs. Broadbent and Buckley were elected Vice-Presidents, Mr. Wood was appointed Hon. Secretary, and Messrs. Johnson and Stephens were also elected on the executive.

Messrs. Walshaw, Wood, and Stephens were appointed delegates to the Council of the West Riding Federation, and Messrs. Hadfield and Jackson were deputed to represent the Association at the general meeting of that body.

Co-operative Buying.

Mr. Buckley suggested that they at Huddersfield should establish a scheme such as that which was in existence on the part of the Blackpool chemists. At Blackpool, each of the associated chemists undertook to buy one or two articles which had a good sale in the town, and each distributed the article or articles for which he was responsible among the other chemists.

The Chairman cited one article. He asked if each of the Huddersfield chemists was prepared to send £11 18s. 6d. cash and distribute the article at 23s. 6d. per dozen.

Mr. Buckley said that in such a case the responsibility might be allocated to a couple of members. They could take up eight or nine leading lines.

The Hon. Secretary stated that there were three classes of schemes. In Leeds the chemists who were in the trading section took up £5 shares, and they had a central warehouse from which they distributed the articles. In Halifax, year by year, in rotation, all subscribing £5 shares, each member took up the work, and it was the member's duty to receive and distribute—either at cost price or at a charge of 1d. per dozen extra to cover the cost of repacking. The general scheme seemed to be that which Mr. Buckley had spoken of as being in use at Blackpool.

Mr. Sykes considered it would be better for each town to have its own scheme. He proposed that there should be an adjournment of this discussion to a special meeting called for the purpose.

Mr. Johnson gave particulars in detail as to the terms on which the proprietors of seven leading articles would supply quantities of their commodities in bulk.

The question was adjourned for a more detailed discussion at the next monthly meeting.

A discussion then took place on the Medicine Stamp question, and the Chairman said that he intended to wind up his limited company and carry on business as an individual, in order to take advantage of the new regulations.

CHEMICAL SOCIETY.

FIRST MEETING OF THE SESSION.

Thursday, November 5, 1903, at Burlington House, London, W.

A large number of papers were communicated. Mr. W. T. Cooke dealt with the reduction of hydrazoic acid. Preliminary notes were submitted on the "Vapour Pressure of Sulphuric Acid Solutions," by Mr. B. C. Burt, and on the "Viscosity of Liquid Mixtures," by Messrs. A. E. Dunstan and W. H. C. Jammatt. Fuller details of these and other papers will be published later. The next meeting of the Society will be held on Wednesday, November 18, at 5.30 p.m. Mr. W. T. Cooke will discuss the action of water and dilute solutions of caustic soda on crystalline and amorphous arsenic.

GLASGOW CHEMISTS' ASSISTANTS' ASSOCIATION.

WINDING-UP.

A meeting of the above Association was held on Wednesday, the 14th inst., at which it was moved by the Treasurer, Mr. Sturgeon, seconded by the Secretary, Mr. Gilmour, and unanimously agreed, to wind up the Association, and, after the payment of all debts, to hand over the balance (about 10s.) to the Glasgow Lifeboat Saturday Fund. This decision was due to the meagre support. A cordial vote of thanks was given to the President and Treasurer.

GLASGOW GROCERS' AND PROVISION MERCHANTS' ASSOCIATION.

MEETING OF EXECUTIVE.

Tuesday, November 10, 1903, at Glasgow, Mr. Flint in the chair.

Medicine Stamp Duty.

The members discussed the effect of the action of the Inland Revenue Authorities with regard to medicine stamps, and a committee was appointed to confer with the Glasgow and West of Scotland Chemists' Association on the matter.

MANCHESTER PHARMACEUTICAL ASSOCIATION.

MONTHLY MEETING.

Wednesday, November 11, 1903, at the Victoria Hotel, Manchester, Mr. G. S. Woolley in the chair.

After an alteration of Bye-law No. 4, relating to the admission of members, which places the election in the hands of the Council,

Mr. W. Kirkby delivered a lecture on

Old Manchester and Some Old Manchester Pharmacists.

He said the most interesting period in the history of Manchester was the end of the eighteenth and the beginning of the nineteenth centuries. This period of the history of the city was memorable for the formation of societies for the advancement of knowledge, about a dozen of which were mentioned. In 1826 a book was published containing "Rules respecting the closing of shops of the apothecaries, chemists, and druggists of Manchester and Salford." Rule 1. was as follows:—"That our shops be closed throughout the year at 9 o'clock in the evening, Saturdays excepted, when they shall be closed at 11 o'clock; and that not more than a quarter of an hour be allowed for shutting up, under any consideration whatever. (2) That our shops be closed on Sundays during divine service, and open for the rest of the day for the sale of medicines also." The book proceeded: "The adoption of the preceding regulations for the closing of our shops having led to the consideration of the advantages that would result from a uniformity in the retail price of drugs, we are of opinion that whatever tends to give respectability to a trade so intimately connected with health as that of a druggist is of no less importance to the public than to ourselves; that in medicines, when the quality is prescribed according to the price, it would materially conduce to uniformity in doses to have some standard of reference by which we might be guided as to the prices of such articles; and that a general agreement in prices would lead to a greater certainty of quality." There were thirteen rules as to prices, etc., from which they learnt that infraction of the rules involved a penalty of 5s. The Committee consisted of a president, secretary, and ten others. Members paid an entrance fee of 2 guineas.

The lecturer then quoted a list of druggists from the Manchester Directory of 1829, six of whom were in Market Street. A list of the founders of the Manchester Pharmaceutical Association, published on January 1, 1842, was read. John Dalton was an hon. member. The members were:—Robert Barker, Geo. Dawson (Treasurer), Wm. Darling, Thos. Jackson, Francis Mayhom, John Mottershead (President), John Pickup, Thos. Roberts, and Jas. Woolley (Secretary). The Society had been formed in the previous year. Pithy biographical sketches, with portraits, were given of John Mottershead, Thos. Standring, Henry Richard Smith Jewsbury, George Dawson, James Woolley, Josiah Thos. Slugg, Wm. Scott Brown, Thos. Ransome, Wm. Wilkinson, John Pickup, James Hart, F. B. Benger, Robert Hampson and Geo. S. Woolley, the President now in office.

Jas. Woolley

was born at Dukinfield in 1811. At sixteen years of age he was apprenticed to Samuel Dean, of 4, Piccadilly. After his apprenticeship he entered the University of Edinburgh. In September, 1833, he opened a chemist's shop in King Street, and in 1844 bought the business at 34, Market Street, which had previously been carried on by R. H. Hargreaves. For six years he was a member of the Town Council. His interest in professional pharmacy was intense. He was a founder of the Pharmaceutical Society, and was Local Secretary for years. With Dawson and Standring he was associated (as a sub-committee of the branch) in securing the establishment of a school of pharmacy in connection with the medical school. In that school, in 1843, there were between forty and fifty students. In 1854 he was a lecturer, with Calvert, to pharmacy students, and in the following year was elected President of the newly-formed Manchester Pharmaceutical Association. It was worthy of remark that at the meeting, at which James Woolley gave the inaugural address, his son, Geo. Woolley, received the botanical prize, at the hands of Mr. Leo Grindon. Mr. Jas. Woolley, before the Manchester Chemists' Conversational Society, in 1854, made certain remarks which revealed him as a man greatly in advance of his time; for instance, he mentioned that concentrated infusions "are not yet incorporated with the national formulæ." He argued in favour of a percentage arrangement of formulæ. "In short," he said, "let the components be given so as to form the 100 parts of the compounds, the figures opposite each ingredient representing the percentage, and how simple the constitution of our Pharmacopœia becomes." At that meeting, also, "the decimal scale was generally approved."

The following extract from the *Pharmaceutical Journal* of 1842 was read:—"Last April a conversazione was held at the Royal Victoria Gallery, Manchester, which was numerously attended by medical and other scientific men, on which occasion Mr. Woolley read a paper 'On the Present State of Pharmacy in Great Britain.' Prefacing his remarks by an allusion to the late attempts which have been made in Parliament to reform the medical profession, the author proceeded to notice those circumstances relating to pharmacy in particular which appeared to demand public attention and improvement. He dwelt at some length on the defective education, the necessity of an amended system on grounds of public utility, and the manner in which such improvement should be undertaken. He demonstrated, by the exhibition of a variety of specimens, the extent to which inferior and adulterated drugs were circulated in the market, and advocated the reform of the abuse by means of information as to the best methods of detecting frauds of this description. In conclusion, he advocated the establishment of chairs or professorships of practical pharmacy and pharmaceutical chemistry to schools of medicine. He also advocated museums of pharmacy, and apparatus and utensils then in use, with models of the apparatus used in chemical manufactories in every country, collections of furnaces, etc., and the placing of pharmacy in its true position as an important and inseparable branch of the medical profession."

Mr. Geo. Woolley said he had never listened to an address with greater pleasure. It called back many memories. He moved the thanks of the meeting to the lecturer, which was at once carried with acclamation.

Besides some references to past pharmaceutical worthies by the President, other recollections were given by Mr. R. Bardsley, of the firm of Jewsbury and Brown, and by Mr. C. A. Johnstone, a member of the firm of Messrs. Woolley and Co.

BRISTOL PHARMACEUTICAL ASSOCIATION.

ORDINARY MEETING.

Wednesday, November 11, 1903, at the University College. Mr. J. W. White, President, in the chair.

Vote of Condolence.

Mr. H. E. Matthews called attention to the serious loss of the Association by the death of Mr. John Stroud. He was a valued member and Hon. Treasurer during a number of years.

Mr. Matthews proposed that a letter of condolence should be forwarded by the Hon. Secretary to the bereaved relatives.

Mr. G. T. Turner seconded the motion, which was carried unanimously.

Mr. H. E. Matthews then read a paper on the

Medicine Stamp Regulations.

He brought before the meeting several knotty points, which afterwards provoked considerable discussion. He traced the history of previous Medicine Stamp Acts from about the year 1783 up to the present time, and then went on to explain the various points of difference that would shortly come into force. He had many sample labels to illustrate his remarks, and

Mr. H. E. Boorne also brought to the meeting books of specimen labels specially designed to meet the new requirements.

At the close of a lengthy discussion a very hearty vote of thanks was accorded to Mr. Matthews, on the proposition of Mr. Turner, seconded by Mr. Plumley.

TUNBRIDGE WELLS AND DISTRICT CHEMISTS' ASSOCIATION.

ANNUAL DINNER.

Wednesday, November 11, 1903, at the Clarendon Hotel, Tunbridge Wells, Mr. H. S. Pearmund, President, in the chair. There were also present the President of the Pharmaceutical Society (Mr. S. R. Atkins), Mr. R. A. Robinson, Mr. T. D. Vint (President of the East Sussex Pharmaceutical Association), Mr. A. Stooke (President of the North Kent Chemists' Association), Mr. A. E. Hobbs, and Mr. J. Humphrey (Editor of the *Pharmaceutical Journal*).

A report of the speeches will appear in next week's issue of the Journal.

LEGAL INTELLIGENCE.

High Court of Justice, King's Bench Division.

Eucalyptus Oil for Ipecacuanha Mixture.

As briefly reported last week (see page 685), the jury in the action of Hall *v.* Bruces, Limited, which was heard on Thursday, November 5, 1903, returned a verdict for the plaintiff, with £100 damages.

We are now able to give a somewhat fuller report of counsel's arguments and the evidence.

Mr. Tindal Atkinson, K.C., in opening plaintiff's case, said it was the second time the case had been tried, the jury having disagreed on the first occasion. The child of plaintiff, which was a little over two years of age, was attacked early one morning by croup, and the father immediately instructed a servant to go to the nearest chemist's shop to procure medicine composed of ipecacuanha wine and syrup of squills and tolu. He gave her the particulars written on a piece of paper together with a bottle, which had at one time contained eucalyptus oil, but which was washed, and 3d. for the medicine. The girl gave the bottle and paper to the assistant, and said, "I want three-pennyworth of what is written on that paper." Whether the assistant first looked at the paper or not before filling the bottle he (counsel) could not say, but the case for the defence was that the assistant smelt the bottle, and that the paper was never given to him. He asked the girl if she wanted eucalyptus oil, and she replied that she wanted three-pennyworth, and he gave her that quantity. The child resisted taking the oil, but the father and mother, by their joint efforts, succeeded in administering a teaspoonful. Instantly the infant become alarmingly ill. The bottle and prescription were sent back to the chemist's, who kept the bottle. Later in the day, when the father called at the shop, they said the bottle had been broken in washing, but a portion was produced on which was still part of the word "eucalyptus." The fact that the assistant said he was sorry for what had occurred was, counsel submitted, an admission that a mistake had been made. The father saw Mr. Strickland, managing-director of the firm, who said he had been informed by the assistant that the servant had asked for eucalyptus oil. The servant, however, on being sent for, said she had given both the bottle and paper to the assistant, and had asked for what was on the paper. Counsel added that the child still suffered from irritation of the bladder, and that if negligence was proved plaintiff was entitled to compensation for its sufferings and for expenses to which he had been put.

Mr. Theodore Hall, father of the child, gave evidence which confirmed the foregoing statement, affirming that the assistant had said that he was very sorry the mistake had occurred. His child, he added, had been attended ever since the incident for weakness of the bladder and incontinence of urine.

In cross-examination by Mr. Rawlinson, the witness admitted that the bottle had undoubtedly contained eucalyptus oil, though he could not say that it was what it had last contained. Witness washed it out before he sent it to the chemist's shop. There was no label of eucalyptus oil upon it when he gave it to the servant. From July to November he had made no further complaint or claim against the defendants, because he had put it off to the last moment. Witness believed his child would have to undergo an operation before it could be cured.

Mrs. Hall, wife of the previous witness, gave similar evidence.

Alice Victoria Capon, their servant, gave corroborative evidence as to having been sent for the medicine, and as to having said to the assistant, "I want three-pennyworth of what is on the paper," giving him both the bottle and paper. He filled the bottle and gave it to her. She did not think any fresh label was put on the bottle. Witness was sent back by her master to ask what the assistant had given her. The latter said: "It was eucalyptus you wanted," and she replied that it was not. Witness was then supplied with a bottle of the medicine required, the assistant saying he was sorry he had made a mistake, and hoping that the baby had not taken any of the oil. In cross-examination, witness said she knew what was written on the paper, because she had read it on her way to the shop. Witness admitted that at the last trial she could not spell what was on the paper.

Dr. R. F. Dixon, of Ealing, spoke to attending the child, which he said was still suffering from incontinence of urine, an affection which might continue for some time. Eucalyptus produced great irritation.

Dr. J. O'Donnell gave evidence as to the effects of eucalyptus when administered to a child.

Mr. Rawlinson, for the defence, described the case as one of an extraordinary character, and said if the jury should have to deal at all with the question of damages it could only be in a moderate way. It was for the plaintiff, however, to satisfy the jury that the defendants, or their assistant, had acted negligently, and, if they succeeded in that, it would have to be further shown that the eucalyptus oil was the cause of the child's sufferings. The evidence which he should adduce was to the effect that the servant handed the assistant a bottle without any paper. The assistant smelled the bottle and said "Eucalyptus?" to which she replied, "Yes; three-pennyworth." He filled the bottle, and that was really the end of the story so far as the defendants were concerned. It afterwards appeared that the prescription was found among some bottles behind the counter, to which spot it had fluttered. When the girl returned it was found, and the medicine was supplied.

Mr. J. Field, assistant in the employ of the defendants, said the servant handed him a bottle, saying, "I want three-pennyworth of this." The bottle was labelled eucalyptus, and he gave her that. She never handed to him any paper.

Mr. F. C. Smith, also an assistant with the defendants, spoke to the fact of the paper having been found behind the counter when the girl returned.

Medical evidence was given to the effect that a dose of eucalyptus oil would not have the effects which had been alleged. Throughout the proceedings the medical witnesses were subjected to severe cross-examination as to whether a drachm dose of eucalyptus oil would cause irritation of the bladder or kidneys, and also as to the possibility of the incontinence of urine having been caused by shock due to the dose. From the contradictory evidence of the medical witnesses, it would seem that not much is clearly known by the medical profession of the effect on the system of an unusually large dose of eucalyptus oil.

Court of Appeal.

Fels Naphtha Soap.

On Monday, November 9, 1903, before Lords Justices Vaughan Williams, Romer, and Stirling, there came on for hearing the appeal of the plaintiffs in the action Fels and another against Christopher Thomas and Bros., Limited, Bristol, from an order of Mr. Justice Kekewich.

Mr. Neville, K.C., Mr. Moulton, K.C., M.P., Mr. John Cutler, K.C., and Mr. Waggett appeared for the appellants.

Mr. Warmington, K.C., Mr. Warrington, K.C., and Mr. Sebastian were retained for the respondents.

Mr Neville, in opening the appellant's case, said that action was brought by Samuel Simeon Fels and Joseph Fels, trading as Fels and Co., against the defendants, who carried on business at Bristol. The nature of the action was one seeking an injunction to restrain the defendants from passing off their soap as the soap of the plaintiffs.

The appeal was dismissed with costs.

High Court of Justice—Chancery Division.

The "Tabloid" Case.

On Saturday, November 7, 1903, before Mr. Justice Byrne, Mr. Walter applied to his Lordship that the case of Burroughs, Wellcome and Co., against Thompson and Capper, which, with the matter of the Trade Mark No. 36,154, 36,155, 42,378, 42,379, 255,812, '13, '14, '15, '16, and the Patent Design and Trade Marks Acts, 1883 to 1888, was fixed for hearing on Monday, 9th inst., might stand over to next sittings.

His Lordship suggested that it should stand till next sittings with liberty to apply to fix an earlier date.

Ultimately, after a short discussion, in which Mr. Levett, K.C., also engaged in the case, took part, it was ordered that the case should be in the list on Monday week to allow time for the advisers of the parties to confer.

The Composition of Elliman's Embrocation.

On Friday, November 6, 1903, before Mr. Justice Farwell, Mr. Austin Cartmell, for Messrs. Elliman and Co., moved for an injunction to restrain the defendants, "Madame and Father Sequah," who travel about the country vending medicines, from professing to give away the recipe for manufacturing Elliman's Embrocation. The defendants, he said, sold various articles, among others, "Prairie Flower Powder," and with each packet they professed to give away the recipe for the manufacture of Elliman's Embrocation, so that it might be made for about 4½d. a bottle, instead of two shillings a bottle. Mr. Austin Cartmell added that it was needless to say that the recipe was not the true one, and that the stuff made from it did not in any way resemble Elliman's Embrocation. The plaintiffs' process of manufacture was a secret one, and had been carried on by them for over fifty years, and had acquired a world-wide reputation.

The defendants did not appear, and his Lordship granted the injunction asked for.

Chancery Division, Ireland.

Alleged Infringement of Patent.

On Wednesday, November 4, 1903, before the Master of the Rolls, the hearing was commenced of an action in which Mr. Thomas Henry Walker, chemist, of Radan House, Dalkey, sought damages and an injunction for the alleged infringement by the Sunlight Gas Company, Limited, of 18 and 19, Wellington Quay, of an improved process and apparatus, patented by him for the simultaneous production of acetylene and carbonic acid gases. The particular breach of the patent complained of was that the defendants had used the plaintiff's dry acid process in the manufacture of carbonic and acetylene gases, and had erected plant and machinery in various parts of the country for that purpose.

In their defence the defendants traversed all the allegations of the plaintiff, and denied that they ever, on the application of the plaintiff, promised to desist from the alleged infringement. They pleaded that the plaintiff's patent was invalid on the ground that it was not new, having been anticipated by Goodwin's patent in 1896 for a gas plant and system to make and produce acetylene gas or acetylene and carbonic acid gas combined, of which patent the defendants were the assignees.

On Thursday the Master of the Rolls delivered judgment in favour of the defendants, expressing his clear opinion that there had been no infringement of the plaintiff's patent. The action was accordingly dismissed with costs.

Manchester Assizes.

Alleged Careless Nursing.

On Tuesday, November 10, 1903, before Mr. Justice Jelf, and a special jury, an action was brought by Mrs. Mary Sophia Hall, of Oldham, against Lees and others, forming the Committee of the Oldham Nurses' Association, for damages for injuries caused by their negligence after an operation for the removal of a kidney. Two nurses were engaged from the Association, and it was alleged they applied hot water bottles, which inflicted dreadful injuries upon her limbs. Plaintiff suffered for some months from the effects of her injuries. She believed the vessel causing the injuries was made of copper. The nurses took no notice of the patient's first cries as to the burning, but attributed it to the effects of the chloroform. When they did remove the bottles, Mrs. Hall's limbs were dreadfully burnt.

Dr. Robertson said he did not order hot water bottles, nor were any required.

The defence was a denial of liability on the part of the Association, which only existed to supply aid to people requiring nurses, and did not carry on the nursing for profit. When the nurses were engaged with a patient they were under the control of the doctor and the people who engaged them.

The case was continued throughout Wednesday, the further contention of the defendants being that when nurses were in attendance on patients at operations they were under the control of the operating surgeon.

The jury gave a verdict for the plaintiff, damages £300.

Sale of Food and Drugs Acts.

Potash Water.

On Thursday, November 5, 1903, at Swindon, Walter J. Greenwood, licensed victualler, was summoned for selling three bottles of potash water not of the nature, quality, and substance demanded, and Messrs. Kinmond and Co., of Leamington, the manufacturers of the article, were proceeded against for applying a false trade description to potash water supplied to Greenwood.

Mr. S. Smith, the inspector, stated that soda water was supplied for potash water, and, in reply to the Bench, he added that there were about five grains of soda in each bottle. There was no definite standard of potash; in some cases there were five grains to a pint, and in others ten grains.

Mr. Greenwood said the bottles in question were labelled "potash" when he received them.

Dr. Bernard Dyer, the public analyst, deposed that the samples in question were practically destitute of potash.

For the defence, it was urged that the mistake was due to the labelling of the wrong bottles.

The case against Messrs. Kinmond and Co. was dismissed, and Greenwood was fined 10s. and 19s. 6d. costs.

Sweet Spirit of Nitre.

On Friday, November 6. 1903, at Wakefield, Josiah Walshaw, of Outwood, was summoned for selling sweet spirit of nitre which contained an excess of water.

For the defence it was urged that fourteen clear days had not elapsed between the day of service and the day of hearing. As only thirteen days had elapsed, the Bench upheld this objection and dismissed the case.

Lime Water.

On Thursday, November 12, 1903, at the Lambeth Police Court, Walter Hind, who trades at Hindman's Road, East Dulwich, as "Davies' Drug Stores," was summoned before Mr. Francis, at the instance of the Camberwell Borough Council, for selling lime water deficient in lime to the extent of 50 per cent. of the lime that it should have contained. Mr. G. W. Marsden, solicitor to the Council, appeared in support of the summons, and Mr. Langford represented the defendant. Mr. Kirby watched the case on behalf of a wholesale firm.

The sale was admitted, and Inspector Groom, the Council's officer, consequently only gave formal evidence of the result of the analysis.

Mr. Langford pointed out that the summons complained that the defendant sold to the prejudice of the purchaser a certain article of food—viz., lime water, and asked the inspector whether he represented to the magistrate that lime water was a food?

Inspector Groom replied that he would not be surprised if an expert would say so, because lime water was often given to infants in their food.

Replying to a question by the magistrate, Mr. Langford said his case would be that lime water was not a food, but a drug.

Mr. Francis: Assuming that you are right in your contention, they will take out another summons and describe the article as a drug, or this summons might be amended. Is it anything more than the merest technicality?

Mr. Langford: There is that technicality which one is entitled to take in this sort of case, but there are merits as well. Proceeding, the learned gentleman said his case was that this lime water (which was sold at the rate of half-a-pint for a penny) was sold by the defendant in exactly the same state as he received it from the wholesale house. Lime water, if there was the slightest exposure to the air, precipitated, the lime going to the bottom, and the result was that if a sample was taken from the top or the middle of the bottle there was a deficiency of lime. Unfortunately, the defendant broke the stopper of the bottle, and at the time the inspector came in had already ordered a fresh stopper for it. The lime had settled at the bottom in a thick sediment, and unquestionably there was a shortage of lime in the water supplied.

The defendant was examined in support of Mr. Langford's statement, and said he bought the lime water from a wholesale firm of repute. At the time he sold the article he did not notice that the lime had become precipitated.

Mr. Kirby, who represented the wholesale house, wished to address his worship, but the magistrate pointed out to him that he had no *locus standi*.

In giving his decision, Mr. Francis said it was not suggested that any serious offence had been committed. He thought it would be sufficient if the defendant paid a fine of half-a-crown and 17s. 6d. costs.

Pharmacy Act, 1868.

Proceedings at Glasgow under Section 15.

On Thursday, November 12, 1903, at Glasgow Sheriff Court, a number of cases were heard at the instance of the Registrar of the Pharmaceutical Society under Section 15 of the Pharmacy Act.

Margaret Hudson, an unqualified assistant in the employ of Dr. Fortune, charged with selling laudanum, pleaded not guilty, and the hearing of the action was fixed for December 9.

The other defendants pleaded guilty. The names of the defendants and the offences alleged were as follow:—

Joseph Boyle, trading as J. and R. Rodman, 285, Duke Street, Glasgow, for selling poison, for keeping open shop, and for use of the title chemist; George Robertson, unqualified manager of an open shop belonging to Drs. Craig and Glen, 466, Duke Street, Glasgow, for selling laudanum; David McNicol, unqualified manager of an open shop belonging to Dr. Thomas, 121, Main Street, Tollcross, Glasgow, for selling laudanum; John Tate, unqualified assistant, branch shop of E. Thomson, 9, Rokeby Terrace, Hillhead, Glasgow, for selling chloroform liniment; John Rae, for a similar offence; George Annan, unqualified assistant in charge of open shop of Dr. Rankin, for selling laudanum, 14, George Street, Glasgow; Margaret McBride, 132, Castle Street, Glasgow, unqualified assistant in charge of open shop of Dr. Joseph Green, for selling laudanum; Janet Montguire (or McGuire), 49, Alexandria Parade, Glasgow, unqualified assistant in the branch shop of J. McCowan, for selling laudanum; William Stoddart, 141, Garngade Road, Glasgow, unqualified assistant to J. McCowan, for selling laudanum; Hugh Thomson, 8, Partick Mansions, Glasgow, unqualified assistant, branch shop of W. Thomson, for selling chloroform liniment; William Seivright, of the same address, for a similar offence.

Of the above, Joseph Boyle was fined £3 and costs, and the other defendants 30s. and costs in each case.

POISONING CASES AND INQUESTS.

The number of deaths by poisoning reported during the seven days ended Wednesday, November 11, 1903, was ten:—

Poison.	Accident.	Suicide.
Belladonna Liniment	—	1
Carbolic Acid	—	3
Chloroform	—	1
Hydrocyanic Acid	—	1
Laudanum	1	—
Oxalic Acid	1	—
Salt of Lemon	—	1
Kind not stated	—	1
Total	2	8

Belladonna Liniment.—A nurse at Kensington committed suicide by taking this liniment.

Carbolic Acid.—Three suicides with carbolic acid are reported, the persons concerned being a domestic servant at South Shore, an army pensioner in Clerkenwell, and a labourer at Newcastle, Staffs.

Chloroform.—An artist in Kensington committed suicide by inhaling chloroform from an improvised mask.

Hydrocyanic Acid.—A young woman at Abertillery committed suicide by taking prussic acid.

Laudanum.—An elderly woman at Brentford, who had been in the habit of taking laudanum for many years, was said to have died from an overdose. The jury thought that chemists should require customers to sign a book when buying laudanum.

Oxalic Acid.—A child at Bradford died from an accidental dose of oxalic acid, which had been dissolved in some water contained in a ginger-beer bottle.

Salt of Lemon.—An Oldham woman took a quantity of salt of lemon with fatal effect.

Kind not stated.—A woman at Middlesbrough committed suicide by taking a poison which was stated to "resemble strychnine."

Attempted Suicides.—A number of these are reported, the poisons used being copper sulphate, laudanum (2), salt of lemon, and sugar of lead.

Deaths by Poisoning in Ireland.—From the report for 1902 of the Registrar-General of Births, Marriages, and Deaths in Ireland, it appears that fifty-seven deaths from poison were registered during that year. Of these forty-nine were accidental deaths, and only eight suicidal. Alcohol is the only "poison" certified as responsible for more than six deaths, the number of alcoholic poisonings being returned at eleven. In other respects the report presents no features of especial importance.

BANKRUPTCY INTELLIGENCE.

Re **J. Saunders**, Bexhill-on-Sea, Sussex.

This debtor's estate has yielded a first and final dividend of 3s. 1d. in the pound.

Re **F. Booth**, Ossett, described as a Druggist.

The Official Receiver of the Dewsbury Bankruptcy Court reports that, as a result of the realisation of this debtor's estate, a first and final dividend of 6s. in the pound will be paid on November 16.

PARIS NEWS.

A Physico-Therapic Institute Described.

The Physico-Therapic Institute of Dr. Rivière is in the Rue des Mathurins. Thither (writes our correspondent) I wended my way to renew a long-standing acquaintance with the doctor and to glean a few items of interest for the *Pharmaceutical Journal* concerning the mysterious and wonderful appliances therein contained. The doctor is a profound believer in the application of electrical treatment in all diseases, and, when one takes into account the many wonderful cures which he has the credit of having effected, he might be readily pardoned for his optimism when he says that he considers no case so bad that it cannot be ameliorated by judicious electrical treatment.

Having expressed a wish to be shown over the Institute, Dr. Rivière promptly acquiesced, and, summoning a charming young female operator, instructed her to act as my cicerone and to show and explain to me the working and object of all that wonderful apparatus. This she certainly did minutely, in a very interesting manner, sometimes casually employing me as a "subject" in order better to demonstrate the application of the instrument under discussion. We visited more than twenty rooms, each replete with every conceivable electrical appliance, of strange designs, for the relief or cure of one ailment or another.

The first we entered was the electro-therapic chamber; herein were grouped all the known apparatus of high frequency. Arsonval's solenoid, condensator couch, Oudin's resonator, bi-polar resonator. Continued Faradic, sinusoidal, undulatory, polyphasic, and Morton's currents are here applied, and scarce a day passes but what this room is in constant use. There are also electric baths and douches.

Near by are the hydrotherapy and mecanotherapy chambers, full of odd-looking appliances, which have in some instances been improved upon, and in others entirely invented by Dr. Rivière. One of his inventions in particular strikes the attention on entering the room; it is the auto-masseur, and consists of what look like cork roller-squeegees affixed to long cranks, and so disposed in tiers as to form a cylindrical cage. Within this the patient is placed, and undergoes a sort of pummelling operation, the squeegees lightly striking and rolling upon the part to be massaged. Next come the radiography and fluoroscopy chambers, in which, among other things, is a complete and new apparatus for the administration of the X-rays. Adjoining these is the kinésitherapy room, which is well stocked with complex appliances for the correction of spinal deformities. Then comes a series of rooms for electric, carbonic, and Nauheim baths, in the treatment of nervous ailments, heart disease, obesity, arthritism, and general debility. Further on, and near the end of the zigzag passage, we entered a room about which were placed what at first sight appeared to be octagonal-shaped pulpits, with steps leading up to them. They were in reality electric-light baths, the interiors being fitted up at the angles with electric globes, in groups of three, on revolving columns. Adjoining this room is one where electrical massage is given for the relief of pain by means of the mauve light. We next entered a dark room, wherein a patient was already undergoing treatment. Everything seemed weird and uncanny in the darkness, which was penetrated occasionally by electric sparks, emitted from a metallic, broom-like extremity of the machine, and kept up a hissing and crackling noise. Dr. Rivière employs a number of skilled operators of both sexes who speak several languages. The visit being terminated, I thanked Dr. Rivière for his kindness in affording me such an interesting and instructive hour in his institute.

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

Analyst's Report.—The only samples of drugs taken in Berkshire last quarter under the Sale of Food and Drugs Acts were cream of tartar and camphorated oil, all of which were genuine.

Liverpool Chemists' Association.—On Thursday, November 12, the fifth general meeting of the session was held at the Royal Institution. A report of the meeting will appear in next week's issue.

Theft of Syphons.—At Long Eaton, on November 24, Chas. Bertie Love and John Wheatley were each fined 10s. and costs, the former for stealing three syphons, value 6s., the property of Mr. H. G. Dagleish, of Nottingham.

Federation of Local Associations.—This Federation has issued a card containing the new rules adopted at the annual meeting held at Bristol, together with rules suggested by the Executive Committee for conducting committees and small associations.

Proposed New Factory for Cod-liver Oil.—A Hull firm proposes to establish a factory at Barton-on-Humber for the manufacture of cod-liver oil by a special process. The Urban District Council has decided to assist the firm in establishing the industry in the town.

An Increased Drug Bill.—Complaints were made at the quarterly meeting of the governors of Newcastle-on-Tyne Royal Infirmary on November 6 of the increase in the drug bill from £114 8s. 1d. to £249 17s., and it was stated that steps would be taken to reduce the drug bill if possible.

Women Pharmacists in Pennsylvania.—A new Society has been formed by the women pharmacists and chemists of Pennsylvania, and already has a good number of members. The secretary and treasurer is Miss Mabelle Haydock, P.D., B.P., Director of W. R. Warner's Chemical Laboratory.

Explosion at a Chemist's.—An explosion occurred on November 3 at the premises of Mr. A. R. Davies, chemist and druggist, of Presteigne. Some chemicals which were being heated ignited, and Mr. W. A. Davies, after carrying the receptacle into a yard, threw some water over it. An explosion followed, and Mr. Davies was injured. The windows at the back of the premises were shattered.

The New Cancer Treatment.—A quantity of pure radium has been placed at the disposal of a member of the staff of the Cancer Hospital, Fulham Road, London, and the staff is making arrangements for an extensive trial of this new method of treatment to be undertaken. With the number of inoperative cases at its disposal the staff will be able to give this new treatment a fair and exhaustive trial.

The Labelling of Disinfectants.—Arising out of comments at a recent inquest at Kingston-on-Thames, relative to the free distribution of disinfectants by New Malden Urban District Council, this body has decided that in future the bottles containing disinfectants shall be labelled poison. At the same time, the Council did not agree with the jury that the disinfecting fluid was distributed in a very loose manner.

Linnean Society of London.—At an evening meeting, on Thursday, November 19, 1903, the following papers will be read:—"A General View of the Genus Pinus," by Dr. Maxwell T. Masters, F.R.S., F.L.S.; and "Contributions to the Embryology of the Amentiferæ. Part II. *Carpinus betulus*, Linn." By Miss Margaret Benson, D.Sc., and Miss Elizabeth Sanday, B.Sc.

Royal Institution.—The annual course of Christmas lecture at the Royal Institution, specially adapted to young people, will be delivered by Professor Ray Lankester, M.A., LL.D., F.R.S., Director of the Natural History Department of the British Museum, whose subject is "Extinct Animals." The first lecture will take place on Tuesday, December 29, at three o'clock, and the remaining lectures will be delivered on Decemben 31, 1903, and January 2, 5, 7, and 9, 1904.

Junior Pharmacy Ball.—It has been decided to hold the twenty-third annual Junior Pharmacy Ball on Wednesday, February 24, 1904. Owing to the great success of the last ball, a large balance was carried forward, out of which a grant of ten guineas was voted to the Benevolent Fund. The same gentlemen as before are acting as members of the Committee, viz.:—Messrs. R. L. Cassie, C. W. Martin, A. H. Solomon, H. C. Wright, R. D. Dixon, and J. E. Southon, with Mr. Percival Trick, Salisbury House, London Wall, as Hon. Secretary.

A Herbalist's Prescription and Death Certificate.—At the Town Hall, Brighton, on Friday, the 6th inst., Mr. J. E. Bush, the borough coroner, held an inquest on the body of Minnie Silsby, aged six, who, having been taken to a herbalist named Stokes for an attack of whooping cough, had prescribed herbal medicines. The herbalist gave evidence, and stated that he had prescribed merely a few harmless herbs. He was aware that the certificate of death was valueless. Medical evidence showed that death was due to bronchitis developing into pneumonia. The jury, in returning a verdict to that effect, said that in their opinion the parents of the child had been very indiscreet in consulting the herbalist instead of a qualified medical man.

Post Office Regulations.—Complaints are not infrequently made by chemists and druggists against the regulations of the General Post Office in regard to the carriage of bottles of medicine. This week information has come to hand from a chemist in the West End of London of the fact that several parcels of medicine, securely packed, have lately been broken through the destructive carelessness of the postal servants at a particular post office, before the packages reached the mails. A limited company, which owns a proprietary medicine, has also written to the *Standard* complaining that without giving notice, the Post Office authorities stopped delivery of a number of bottles on the ground that the bottles were not packed according to the regulations of the office. The company complains that the Post Office authorities ought to have advised it of their intention to refuse delivery.

Vienna Doctors and Vivisection.—A Reuter telegram from Vienna of Saturday's date says:—As a result of a long conflict between the Anti-Semitic members of the Landtag and Count Kielmansegg, Governor of Lower Austria, on the one hand, and the general body of Vienna physicians and University professors on the other, the members of the Vienna Medical Chamber, which is entrusted with the professional control of the doctors in this city, resigned *en masse*. The conflict began ostensibly over the question of vivisection, several members of the Landtag accusing the doctors of performing experiments on animals in a manner contrary to the provisions of the Vivisection Law. The doctors allege that the whole agitation is fostered by the Anti-Semites, who are generally hostile to science, and that the fact that a large proportion of Vienna doctors are Jews tended greatly to increase the hostility of the Anti-Semites.

Inauguration of Liverpool University.—On Saturday, November 7, the civic inauguration of the University of Liverpool took the form of a demonstration in St. George's Hall. Graduates, professors, members of the council, representatives of Lancashire boroughs, and others took part in a procession, the central figure of which was the Lord Mayor, who was attended by the bearers of the municipal regalia. The Lord Mayor presented the charter of the University to the Chancellor, remarking that no one had done more than Lord Derby to further the movement for the establishment of a Liverpool University. Lord Derby, in accepting the charter, said it was a proud day for all associated with the University of Liverpool when he, as Chancellor, received from the Lord Mayor the charter of their existence. It marked a period which was anxiously expected and desired by all who had the welfare of Liverpool and of its University at heart.

Accidents in Chemical Works.—A circular, issued by the Home Office, states that the attention of the Department has been directed by the reports of the Inspectors of Factories, and by the occurrence of fatal accidents, to the serious risks incurred by persons employed in works in which is carried on the distillation of tar for the production of naphtha, light oil, creosote oil, and pitch. It is thought desirable, therefore, pending a revision of the existing special rules for chemical works, to urge upon the occupiers concerned certain recommendations, which are for the most part based upon the precautions actually in use in certain works. The recommendations specified in the following paragraph are held to be specially important:—"During the process of cleaning every tar still should be completely isolated from adjoining tar stills either by disconnecting the pipe leading from the swan neck to the condenser worm, or by disconnecting the waste gas pipe fixed to the worm-end or receiver. Blank flanges should be inserted between the disconnections. In addition, the pitch discharge pipe or cock at the bottom of the still should be disconnected."

Metric Weights.—The Executive Committee of the Decimal Association, in their annual report for the year ending October, 1903, state that since the issue of the report for the previous year, very decided progress has been made. Both the membership and income of the Association have during the past twelve months been more than doubled. As, however, more funds are required for carrying on a successful propaganda, the hope is expressed that each member will do his utmost to extend the membership, and so add to the strength of the movement. The feeling in the United States is said to be growing in favour of the metric weights and measures, a society for forwarding this object having lately been formed at Washington, while British Consuls residing in metric countries continue to urge the necessity for reform. Attention is called to the number of Chambers of Commerce now subscribing to the Association's funds, to the fact that the fifth Congress of the Chambers of Commerce of the Empire, held in Montreal in August last, passed a resolution in support of the metric system, and that various home and Colonial organisations have declared in its favour. The Association has now a membership of 800.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. T. Widgery has been elected to the Kensington Borough Council.

Mr. T. Bane, chemist and druggist, is the new Mayor of Marlborough.

Mr. B. John and **Mr. H. J. Thomas** have been elected as members of the Bath Town Council.

Mr. E. T. Norton, of Stow-on-the-Wold, has been elected to fill a casual vacancy on the Urban District Council.

Professor Le Neve Foster, of the Royal School of Mines, South Kensington, has received the honour of knighthood.

Alderman T. H. W. Idris, J.P., L.C.C., has been elected Mayor of the Borough of St. Pancras for the ensuing year.

Mr. Harold Wilson, B.Sc. (Lond.), pharmacist to University College Hospital, has been appointed pharmaceutist to St. Thomas's Hospital.

Mr. Henry P. Thompson, of 93, Aldersgate Street, E.C., sailed on Saturday, the 7th inst., for the United States, on the S.S. "Umbria," on business.

Mr. Rex Blanchford, of Richmond, has issued a local telephone guide, which should prove useful to the laity and beneficial to Mr. Blanchford's business.

Mr. H. J. Helm, Deputy Principal of the Government Laboratory, Inland Revenue Department, has been appointed as a companion of the Imperial Service Order.

Mr. John J. Bryant, of Davy Hill and Co.'s analytical department, has accepted the post of managing assistant of the laboratories of Phillip Harris and Co., Limited, of Birmingham.

Mr. R. C. Walshaw, M.P.S., of Huddersfield, intimates that, after January 1, 1904, he will carry on his business as King, Walshaw, and Co., a private firm, and not a limited company, as heretofore.

Mr. A. B. Barker, Divisional Secretary for Spen Valley, points out that his address was given as Cleckheaton, instead of Heckmondwike, in the list of Divisional Secretaries, published last week.

Alderman Seth Harry, chemist and druggist, who has for many years been a member of the Okehampton Town Council, has now severed his connection with municipal life, much to the regret of his fellow townsmen.

Bailie W. R. B. Dougall, chemist and druggist, Auchterader, has been elected Provost of that town. Provost Dougall has been in business at Auchterarder for some twelve years, and has been a member of the Town Council since 1897.

Mr. John Taylor, J.P., chemist and druggist, was on Monday re-elected Mayor of Torquay. A native of Liverpool, he came to Torquay in 1873. He is one of the original members of the Corporation, and a leading Liberal.

Mr. H. Gadd, J.P., of the firm of Messrs. Evans, Gadd and Co., wholesale druggists, of Exeter and Bristol, was on Monday last elected an Alderman of the Exeter City Council. Mr. Gadd had previously served the city for many years in that capacity.

Mr. A. E. Ekins, of St. Albans, has been appointed a Justice of the Peace for the city, after acting as Mayor for two years. On Mr. Ekins taking the oath on November 5, the Mayor (Mr. M. T. Hodding) congratulated him, and added that he deserved the honour conferred upon him.

Ald. Henry John Turnbull, chemist and druggist, was on Monday re-elected Mayor of Sunderland. He has sat on the Corporation since 1886, and was elevated to the Aldermanic Bench during his Mayoralty last year. He is a Justice of the Peace, a prominent Freemason, a Life Governor of Sunderland Infirmary, a past-President of the Sunderland Chemists' Association, and a leading member of the Liberal party.

Mr. F. Bascombe, F.I.C., was presented, on Tuesday, the 10th inst., at the Annual Dinner and Prize Distribution of the Lambeth Carlton Bowling Club, with a Gold English Keyless Watch, "in recognition of his valuable services as Hon. Treasurer from 1894 to 1903." The presentation was made by Sir Robert Mowbray, Bt., M.P., President of the club, who eulogised the great work that had been done by Mr. Bascombe during his tenure of office.

SCHOOL AND COLLEGE NEWS.

Leeds College of Pharmacy.—A smoking concert in connection with this school is to be held at the College, Clarendon Road, Leeds, on Wednesday, November 18, 1903. The chair will be taken at 7 p.m. by Mr. W. Maskew, of Clacton-on-Sea, and Mr. F. Pilkington Sargeant, Principal of the College, will also be present.

Inter-Pharmacy Football League.—Last Saturday, on home ground, the Square played their first League match, against Westminster College. The weather was favourable, but the ground was still sodden, and made it heavy work for the teams. From the outset the home team took the upper hand, and scored within five minutes of the start; at half-time they had four goals to their credit. On resuming the game, however, the Westminsters put on a spurt and soon found the net, scoring what proved to be their only goal. Afterwards the game was mostly at the visitors' end of the field, and before the termination of the match the Square team put in another seven goals, thus being left victorious by eleven goals to one. The following were responsible for the scoring:—Hewlett, 7; Walker, 2; White and Arnfield, 1. Fox played a splendid game throughout, and the team generally worthily maintained the reputation of the Square.

TRADE NOTES.

Crystallised Eucalyptol.—Two solid masses of eucalyptol, each weighing about 2 lb., prepared by the Australian Eucalyptus Oil Co., 16, Bond Street, Sydney, were exhibited at a recent meeting of the Royal Society of New South Wales. This was prepared by freezing eucalyptus oil in a special apparatus.

"Vall's Beetlecute" is an excellent beetle, cockroach, and ant exterminator which is being largely advertised just now. It is put up for sale in attractive tins to retail at 6d., 1s., and 2s. 6d. As chemists are very likely to be asked for it, it might be mentioned that orders should be sent to Messrs. Burgoyne, Burbidges and Co., 12 and 16, Coleman Street, London, E.C.

The "Mayfair" Enema.—This is a very good article and, at the price, one of the best on the market. It is manufactured (moulded) in black rubber, and is supplied complete with bone rectum pipe, vaginal pipe, and shield in oval card box, by Messrs. Maw, Son, and Sons, of Aldersgate Street, E.C., to whom application for further particulars should be addressed. The name of this firm is a sufficient guarantee of the reliability of the article.

Cold Cure Tablets.—A chocolate-coated tablet, containing quinine, carbonate of ammonia, camphor, etc., and guaranteed free from poisonous ingredients, is manufactured by Messrs. A. H. Cox and Co., of Brighton. These are supplied in little flat boxes containing thirty; on orders for three dozen and upwards the firm prints the chemist's name on the boxes. There should be a large sale for these tablets—which, by-the-way, are well made—during the winter season, and readers would do well to apply to the firm for quotations.

Leaflets for Chemists.—A neat little handbill has been drawn up by Messrs. James Townsend and Son, medical label printers, Little Queen Street, Exeter. The object of these leaflets, which are intended to be distributed by chemists, is to draw the attention of customers to the fact that certain preparations can only be supplied after January 1 next by registered chemists without the payment of medicine stamp duty. The handbills are very effective ,and the price is extremely reasonable. For fuller particulars application should be made to the firm.

Pretty Soap Wrappers.—Some of the daintiest and most attractive soap wrappers and soap boxes have just been issued by Messrs. Allen and Hanburys, Limited, Bethnal Green, London, E. The firm will be happy to send these designs, together with their new price-list for soaps and perfumes, to any chemist who applies for same. There are in all about two dozen varieties of these lithographed wrappers, and each of these is so pretty that chemists will find it difficult to pick out the nicest. The price, which is very low, will be supplied on application.

Thermometers, Scientific Apparatus, etc.—Messrs. B. A. Smith and Co., 36, Crutched Friars, London, E.C., wholesale dealers in chemicals and drugs, agents for Messrs. De Dietrich and Co.'s acid-resisting enamelled iron chemical apparatus, have also undertaken the agency of Mr. Carl Kellner, Arlesberg-in-Thür., for thermometers of all kinds, barometers, artificial eyes, and glass instruments of all descriptions (for scientific and other purposes). Mr. Kellner is, we understand, one of the best makers on the Continent, and his articles appear to combine quality and finish with moderate prices.

The Ever-Ready Acetylene Generator.—Messrs. W. Butcher and Sons, Camera House, Farringdon Avenue, E.C., are this season introducing an acetylene generator which has been specially designed to meet the requirements of lanternists, photographic enlargers, and others requiring a cheap but efficient piece of apparatus. The body and all parts of the generator are substantially made and entirely interchangeable; the carbide container has a solid metal top carrying a double lever device which lifts a metal valve when the bell descends and closes again automatically when the bell rises. Thus there is no over-production with the generator, and, if the carbide is not all used at one operation, it may be reserved in the chamber for the next occasion. The price of the apparatus is one guinea.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

The Drug Sales.

London, Thursday, November 12, 1903.

Signs are not wanting that the quiet season is approaching; in fact, the general appearance of the sale-rooms at to-day's auctions gave one the impression that the period of depression which usually precedes Christmas and stock-taking was setting in earlier than usual. The attendance was smaller than ought to be expected at this time of the year, and there was very little anxiety evinced on the part of buyers to secure lots. Competition was lacking, and except in a few cases bids were reluctantly drawn. The catalogues, numbering sixteen, comprised new and old goods, and no article was present in abnormal quantities. Among the offerings were several items which have of late been in a fluctuating condition; these were Menthol, Peppermint Oil, Ergot of Rye, Cod Liver Oil, and Ipecacuanha. Ipecacuanha, except for a few bales of sea-damaged, did not tempt buyers. For Cod-Liver Oil no bids were forthcoming, and this was again withdrawn. Ergot of Rye was disposed of at prices below those which have recently been paid in the private market. Menthol was knocked down without reserve at fair rates, and the price paid for Peppermint Oil was perhaps a trifle lower than that asked privately. There was a fair amount of Senna offered, and this article was an exception, for it sold with good competition at irregular rates; taking into consideration the falling off in colour and size of leaf, it might safely be asserted that the prices were dearer. Cardamoms were in small supply, and the offerings consisted chiefly of second-hand lots; the demand for these was not brisk, and the prices obtained were irregular. Although Honey was a little weaker at the auction, the market is, if anything, firmer. Coca Leaves were a bit firmer, and the supply of Aloes was very small indeed. In the general market the most noticeable feature of the week is the reduction of Codeine; Morphine and Opium, however, are unchanged. Owing to the potato famine in Holland, the value of starch obtained from that source has been enhanced. Pending news of the results of the Amsterdam auctions, Quinine has been quiet the last day or two. Oil of Star Anise has been the subject of speculation, and is again higher. Cubebs, Saffron, Podophyllum, and Shellac are also dearer; but, speaking in a general sense, buyers are only satisfying their immediate requirements.

ALOES.—Good soft Socotrine in kegs sold at 70s.

ARECA NUTS.—A sale was made of good fair current at 12s. 6d., but 15s. is the price generally asked.

BUCHU LEAVES.—9½d. was paid for fair green.

CALUMBA ROOT.—For fair washed sorts, catalogued without reserve, 15s. was paid.

CAMPHOR—Realised 2s. 2d. per lb. for 1 oz. tablets, and 2s. 3d. for smaller tablets.

CARDAMOMS—Were in small supply, and chiefly second-hand lots. Only a portion sold, and these at somewhat irregular prices.

COCA LEAVES.—1s. 2d. for brown, and 1s. 3d. for good green Ceylon, were the prices paid.

COD-LIVER OIL.—Newfoundland was held for 20s. a gallon and New Zealand for 500s. a barrel.

ERGOT OF RYE.—15 bags Spanish, rather dusty, sold without reserve, at 1s. 3d. per lb., and a few bags slightly wormy at 1s. 2d.

GAMBOGE.—A case was sold for £15.

GUM BENJAMIN.—Good fair medium Sumatra sold at £7 10s. to £7 12s. 6d.; common sold up to £5 5s. Siam, medium almonds, in crumbly block, was held for £19.

GUM KINO.—9 cases catalogued were sold at from 3½d. to 4¾d. "subject."

HONEY.—Jamaica realised prices up to 26s. per cwt.

INSECT FLOWERS.—For closed flowers, 92s. was paid.

IPECACUANHA.—Cartagena was offered without sales for 4s. 9d. for common, to 5s. for fine plump. Mattogrosso was held for 6s. to 6s. 3d.; a few bales of the latter kind, sold for underwriters' account, found buyers at 5s. to 5s. 1d. for sea damaged.

KOLA NUTS.—4½d. was paid for nice red West Indians, and 3d. for rather mouldy ditto.

MADRAS SEEDLAC—Realised up to £7 15s., and £6 10s. for blocky.

MENTHOL.—5 cases Kobayashi unworked, catalogued "without reserve," realised 20s. 6d. to 21s. There were no bids for the other offerings, and Kobayashi was held for 22s. and Yazawa for 21s.

ORANGE PEEL.—Fair machine cut sold at 3½d.

PEPPERMINT OIL.—A bid of 13s. 6d. was refused for H. G. H.; this was held for 14s.; but 3 cases were sold without reserve at 13s. 6d., and one at 14s. Japan dementholised sold without reserve at 7s. and 7s. 3d.

RHUBARB.—Fine, flat high-dried sold at 1s. There was no demand for other kinds.

SARSAPARILLA.—Lima sold at 10d.

SENNA—Sold with good competition at irregular prices and at dearer rates on the whole, considering the falling-off in colour and size of leaf.

TONQUIN BEANS.—Small Suranams realised 1s. 8d. A quantity of Paras sold at low prices, common foxy at 4½d.

WAX—Was in fair supply, and sold pretty well. Madagascar, £6 12s. 6d. to £7; Zanzibar, £6 15s. subject, to £6 17s. 6d.; Jamaica, £7 10s. to £7 15s.; Australian, £6 2s. 6d.

General Markets.

ACID CITRIC.—1s. 0½d. per lb.

ACID TARTARIC.—English on the spot, 1s 1d.; foreign, 1s. 0d. to 1s. 0½d.

ARROWROOT.—Only 10 barrels St. Vincent sold at Wednesday's sale "without reserve," ordinary manufacturing at 1⅜d.; the remainder was bought in at 2½d. to 4d., according to quality.

BISMUTH CARBONATE.—8s. 1d. per lb.; subnitrate, 7s. 4d.

BLEACHING POWDER.—English, £5 2s. 6d.

BORACIC ACID.—Crystals, 22s. 6d.; powder, 24s. 6d.

BORAX.—Crystals, 13s. 6d. to 14s. 6d. per cwt., according to quantity; powder, 15s. 6d. to 16s. 6d.

BROMIDES.—Unaltered.

CARBOLIC ACID.—Crystals, 39-40°, 5d.

CASCARA.—There is very little demand; 85s. to 90s. is asked for old bark and 75s. for new.

CASTOR OIL.—Quiet. Belgian 1sts, £20 2s. 6d.; 2nds, £18 12s. 6d.

CLOVES.—Fair Zanzibar sold at the Spice Sales at 7½d.

COCAINE.—The price for the hydrochloride is now 13s. 6d. to 14s., according to quantity. For the pure alkaloid the price is 16s. to 16s. 6d.

COCOANUT OIL.—Ceylon spot, £25 10s.; Cochin spot, £30 10s.

CODEINE.—The price has again been reduced, and the quotations now are as follows:—8s. 11d. per oz. for the pure alkaloid, 7s. 11d. for the muriate and sulphate, 7s. 1d. for the phosphate, with a slight reduction for large quantities.

CUBEBS.—The market has been cleared of all cheap lots, and now prices range from 55s. to 65s., according to quality and holder.

FARINA.—Is now quoted 11s. 6d. ex-wharf; the rise is mainly owing to the failure of the potato crop in Holland.

GINGER.—At the auctions on Wednesday 129 bags Cochin sold, without reserve, at lower prices, comprising chiefly bright cuttings at 26s.; bold and medium cut and scraped bought in at 70s. to 75s. 84 packages Jamaica sold, middling little mouldy at 40s., and ordinary small lean dark at 39s. to 40s.

GLYCERIN.—68s. per cwt. for ½-ton lots.

IODIDE OF POTASSIUM.—The convention price is as yet unchanged at 8s. 9d. per lb.

IODINE.—9s. 9d. to 10s. per lb. for the resublimed, according to quantity.

IODOFORM.—11s. 8d. per lb. for the pure crystals or powder.

MERCURIALS.—Calomel, 2s. 8d.; corrosive sublimate, 2s. 4d.; red precipitate, 2s. 11d.; white precipitate, 2s. 11½d.; mercuric sulphate, 2s. 4d. per lb.

OIL OF STAR ANISE.—4s. 8d. to 4s. 9d. are the prices quoted.

OLIVE OIL.—Mogador, £32.

PIMENTO—Was cheaper at the Spice Sales. 365 bags offered and 145 sold at 4d. to 4⅛d.

OTTO OF ROSES.—A steady business is doing, and the article maintains a firm position, in face of the unsettled state of affairs in Bulgaria.

OXALIC ACID.—2⅝d. to 2⅞d., delivered free London.

QUICKSILVER—£8 7s. 6d.

PODOPHYLLUM ROOT—Is exceedingly scarce here, and cannot be bought under 55s.

QUININE.—1s. 0½d. is the spot price at the time of going to press for large lots in the second-hand market.

SAFFRON.—The new crop has been gathered, but it is reported to be half last year's yield. The price here is 37s. for old, and from 39s. to 41s. for new.

SHELLAC—Is again dearer; 230s. has been paid for fair TN.

PATENTS AND TRADE MARKS.*

New Patent Applications.

APPARATUS FOR ADMINISTERING ANAESTHETICS (No. 25,673, of 1902).—J. Lobjois, 35, Alfred Place, Bedford Square, W.C. This invention has for its object to enable an anæsthetic to be administered continuously during an operation performed in the patient's mouth, and consists of a combined gag and means for introducing the anæsthetic. For this purpose an anæsthetic tube is fixed on one of the inner branches of the gag, and is adapted to be connected by a flexible tube with an inhaling apparatus provided with a hand bellows for pumping air into the apparatus. In use, the gag is first applied, then the face piece, and the patient is put under the anæsthetic. The face piece is then removed, and the tube detached therefrom, and connected on to the gag, and, if desired, a nose clip can be applied.

PROCESSES OF SEPARATING PROTEIDS FROM NON-NITROGENOUS BODIES (No. 7,776, of 1903).—J. Carstairs, Woodrhydding, Ilkley, Yorks, and The Allrich Guano Co., Limited, 74, Cheapside, E.C. Relates to the liberation of such proteids as albumen, fibrin, and the like from fat, oil, and other non-nitrogenous bodies. The substance to be treated is first comminuted, if solid, and then intimately mixed with a saturated solution of one or more of the alcohols of the aromatic group in ethyl or methyl alcohol. A saturated solution in methyl-alcohol of nine parts of phenyl-alcohol (C_6H_5HO) and one part of benzyl-alcohol ($C_6H_5CH_2HO$) is preferably used. The mixture thus obtained is gradually raised to the boiling point, and allowed to boil for some time. As a result of the boiling, all the proteids and alcohols and nitrogenous matter will be solidified, whereupon the fats and oils which have been liberated can be drawn off. Other means of attaining the desired result are described.

IMPROVEMENTS IN THE MANUFACTURE OF SACCHARIN (No. 9,322 of 1903).—B. J. B. Mills, 23, Southampton Buildings, London. (A communication from H. Barbier, 46, Chemin Feuillat, Lyon-Monplaisir, France.) The manufacture of saccharin comprises a series of three principal reactions, namely: (1) Transformation of toluene into chloride of orthotoluene sulphonic acid; (2) transformation of said chloride into orthotoluene sulphonamide; and (3) transformation of said amide into saccharin by oxidation. The present invention relates to the third phase, and aims at a reduction of the quantity of permanganate of potash theoretically necessary in the processes at present in use, the oxidiser in this process being regenerated in proportion to its reduction by means of oxygen disengaged by electrolysis in the body of the liquid itself. A suitable electrolysing vat for this purpose is described.

MASK FOR ANAESTHETIC PURPOSES (No. 11,916 of 1903).—F. F. Robinson, 28, Rue du Parlement, St. Catherine, Bordeaux, France. Consists of a glass mask having a tubular extension with an opening therein. Said opening is for the purpose of supplying air to the patient or of introducing a further dose of the anæsthetic while the operation is in progress, and has a closing device retained in position by means of a spring catch. A removable filtering diaphragm is provided between the face mask and the above-mentioned tubular extension thereof. The anæsthetic to be administered is contained in a rubber bag fixed to the outer end of the said extension. The glass mask has a pneumatic cushion fixed on its outer edge to be applied to the face of the patient.

Note.—Opposition to the grant of any of the above-mentioned patents must be filed at the Patent Office, on or before December 21, 1903.

New Trade Mark Applications.

"**PHIXENE**" ("Fix" disclaimed), for chemical substances used in manufactures, photography, and philosophical research and anti-corrosives, by J. Tavener, 45, Beversbrook Road, Tufnell Park, N. 255,567.

"**MALVITE,**" for photographic chemicals, by Waller Malvine and Co., 12, Castle Street East, W. 257,378.

"**THIOGEN**" ("Thio" disclaimed), for chemical substances used in manufactures, photography, or philosophical research and anti-corrosives, by Farbwerke vorm Meister, Lucius and Bruning, Hoechst-a-Main, Germany. 257,777.

"**DAY-DREAM,**" for medicine for human use, by E. B. Lupton, 14, East Parade, Leeds. 257,361.

Note.—Opposition to the grant of registration on any of the above applications must be filed at the Patent Office, on or before December 11, 1903.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and Patent Notes for Inventors' free on application.

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

The Chemists' Defence Association.

I observe that Mr. Glyn-Jones draws attention to a statement of mine at a meeting of the N.B. Execuive which he thinks "amounted to a charge that the C.D.A. had shirked its legal obligations." I should be very sorry indeed to misrepresent the C.D.A., which I believe is doing a good work, but I do not think that I have misrepresented it. I am reported to have said that my chemist friend was told that the C.D.A. "was not prepared to take the case up." I had not at that time seen the actual C.D.A. communication, but I have now seen it, and while the letter does not, in so many words, say that the C.D.A. is "not prepared to take the case up," it gives reasons why the C.D.A. should not take it up, and advises my friend to settle privately by paying a modified penalty. If my paraphrase has exceeded the just limits of interpretation, I gladly apologise to the C.D.A. I may add that the letter gives no indication that the member is entitled to be defended "whatever his label may have been," as Mr. Glyn-Jones now admits is his right, nor does it say whether the C.D.A. intends to pay the modified penalty!

Glasgow, November 7, 1903. T. Maben.

Dispensing Queries.

dispensed the following the other day as an oily fluid; my customer told me he had had it in Scotland dispensed as a jelly. Can any of my colleagues, especially Scotch ones, inform me how to prepare it as a jelly?

℞ Chloral Hydrat. .... gr.
Camphor .... gr. 45
Menthol .... ʒv.
Cocain .... gr. iiss.
Ol. Caryoph. .... ♏xv.
Ft. pigmentum.

San Remo, November 8, 1903. Frank R. Squire.

I shall be greatly obliged if you or any of your readers can supply any information about the following ointment:—

Ung. Sulphur Hypochlor.

℞ Sulphur Hypochlor .... ʒij.
Adip ....ad ℥j.
Mix.

When the above is mixed, it turns to a "leathery" mass. Can this be avoided? I have tried the addition of oil, also solution of potass. carb.

London, November 7, 1903. "G. B." (100/18).

Liquor Aloes.

In reply to the query at page 687 of last week's issue, as to a good formula for liq. aloes, I would suggest that the aloes be boiled with liq. potassæ; about 3 drachms of the latter to 4 drachms of aloes. A good solution is the result, with very little deposit. I hope that "Veterinary Surgeon" will find it satisfactory.

London, November 9, 1903. D. George Davies.

What is it Coming to?

I have before me a note from a leading local medical man, who dispenses his own medicine, apologising for sending me a customer for an enema on Sunday as "his are all out with patients." This, in a locality where the rents are from £60 to £120, and no poor. No wonder chemists prescribe.

November 10, 1903. "Suburban" (251/32).

The Pharmaceutical Journal Formulary.

I am quite sure that the volume of valuable formulæ which you have compiled will not only benefit present-day and up-to-date chemists, but also those who are to follow them in practising pharmacy.

November 4, 1903. "J. G." (248/35).

I, along with others, tender my best thanks to you for the valuable information and concessions obtained for us. Enclosed are a few recipes for the 'P. J. F.'

October 27, 1903. "A. R." (240/25).

The 'P. J. F.' will be a boon and a blessing to chemists and druggists, and I, for one, beg to congratulate you most heartily upon the remarkable success which you have achieved. The entire trade is under a debt of gratitude to you. I don't think you have published anything quite similar to the enclosed forms. If you care to make use of them, please do so.

November 5, 1903. "H. S. F." (245/38).

Enclosed is P.O. of 5s. 6d. for copy of 'P. J. F.' I congratulate you upon the enterprise; it ought to prove of inestimable value to all druggists.

November 7, 1903. "J. F. W." (250/16).

Enclosed please find 5s. 6d. for the 'P. J. F.' I think it will be one of the best books that we chemists have ever had the opportunity of purchasing, as it represents the entire retail trade.

November 6, 1903. "E. T." (250/22).

I enclose 5s. 6d. for 'P. J. F.,' and if not too late will send on my own recipes. I must congratulate you for this step which you have taken; it will be a great boon to the trade, and not a little to your Journal.

November 6, 1903. "F. G. C." (250/20).

I enclose you postal order, value 5s. 6d., for an advance copy of the 'P. J. F.' The profession ought to be greatly indebted to you for the interest you take in their welfare.

November 7, 1903. "D. T." (250/11).

I beg to enclose cheque for formula book. I conclude you will publish the recipes I have sent up; may I send two or three more, if required? Believe me, as a chemist of some thirty-five years' experience, I most cordially endorse the sentiments expressed by several others with regard to the thanks that are due to you for the timely aid you are rendering to the whole body of chemists. It will make those who have never joined the Society glad to do so now, I should think.

November 7, 1903. "A. W. G." (250/15).

Kindly find herewith subscription order form, together with postal order, value 5s. 6d., for the 'P. J. F.' Please accept my congratulations in the way you have conducted the affairs applying to chemists and druggists, and consequently bringing the difficulty to a successful end.

November 8, 1903. "F. W. S." (250/2).

Please find P.O. for 5s 6d., price of Journal's 'Formulary.' It is a great work, grandly conceived, and must be extremely valuable to the craft. This, with the efforts for suppressing the huckstering encroachments on our trade, are things for which chemists have great reason to thank the Society, and hope its membership may double. Kindly forward the book when ready.

November 7, 1903. "I. H." (250/10).

I herewith enclose a few recipes. I hope you will be able to insert them; and must thank you for getting us through the present difficulties of medicine stamp duty. I enclose 5s. 6d. for 'P. J. F.'

November 7, 1903. "J. W." (250/7).

Enclosed you will find postal order for copy of formulary. Am convinced it will come as a boon and blessing to chemists in business. Your collection thus far published must be gratifying to your effort on our behalf.

November 7, 1903. "J. H. W." (250/8).

Please find enclosed cash and slip for copy of 'Formulary.' I also take this opportunity of congratulating you on the great improvement of the Journal and of wishing you every success for its future.

November 9, 1903. "A. W." (251/1).

Enclosed please find 5s. 6d. for copy of the 'P.J. Formulary.' I am sure the trade ought to be grateful to you for your assistance and suggestions in the present crisis with the Inland Revenue.

November 9, 1903. "J. C." (250/50).

Accept my thanks for inserting the formulæ, and for the trouble you are taking for the interests of the trade generally. I enclose P.O. 5s. 6d., and shall be obliged for a copy of 'P.J. Formulary' when ready.

November 9, 1903. "G. W." (250/49).

With regard to allowing members to have duplicate copies, I consider this would be a means of members obtaining them for non-members, which ought not to be. Every registered chemist ought to subscribe to the Society now, as it has certainly done a great amount of work this year for chemists generally, and therefore deserves greater support than it has had formerly.

November 7, 1903. "J. T." (250/1).

Herewith I enclose postal order for a copy of the 'P.J Formulary.' I would heartily join in the universal praise and admiration of your untiring efforts on behalf of our profession.

November 9, 1903. "A. S." (251/50).

Enclosed please find subscription order-form with P.O. value 5s. 6d., for which please reserve one copy of the 'Pharmaceutical Journal Formulary.' I must say that your Formulary has helped the chemist out of a great difficulty, and I wish to express my warmest thanks to the Society for its forethought on our behalf.

November 10, 1903. "H. R." (251/46).

I think the publication of the 'P. J. Formulary' will be a great boon to chemists, and I am glad to note that its success as a handy book of reference is already guaranteed.

October 30, 1903. "W. W." (246/15).

Enclosed please find postal order 5s. 6d., in payment for 'P. J. F.' Glad you are taking so much interest in this matter for the chemists.

November 7, 1903. "J. G." (250/4).

Correction.

At page 660 of last week's issue, *for* "Mr. Samson Smith," *read* "Mr. Sumner Smith."

BIRTHS.

Orrell.—On November 11, at The Hollies, Edgeley, Stockport, the wife of William P. Orrell, chemist and druggist, of a daughter.

Riley.—On November 8, at 26, Warrel's Avenue, Bramley, near Leeds, to Mr. and Mrs. Alfred Riley, a son.

MARRIAGES.

Allan—Turner.—On November 6, at the Balmoral Hotel, Princes Street, Edinburgh, by the Rev. Duncan Cameron, B.D., Logie Manse, Cupar, Fife, Richard Birrell Carruthers Allan, M.P.S., chemist (of Messrs. Allan and Son, chemists), 151, High Street, Dumfries, to Annie Hope Turner, fourth daughter of Mr. Charles Turner, Charter House, Dumfries.

Hill—Weir.—On November 4, at the Criterion Restaurant, Rothesay, by the Rev. D. McCormick, George Grayson Hill, chemist and druggist, to Susan Jane Weir.

DEATHS.

Broom.—On November 8, at Exeter, Sarah, widow of the late W. W. Broom, chemist, Queen Street, Exeter. Aged 58.

Carter.—On November 6, William Carter, Pharmaceutical Chemist, Manchester. Aged 85. Mr. Carter had been a member of the Pharmaceutical Society since 1850.

Evans.—On November 1, John Evans, Chemist and Druggist, New Quay. Aged 71.

Groom.—On November 7, William Bishop Groom, Pharmaceutical Chemist, Liverpool. Aged 75. Mr. Groom had been a member of the Pharmaceutical Society since 1853.

Higgs.—On October 29, at Kingston-on-Thames, Frances Clare, and on November 10, 1903, Olive May, third and fourth daughters of Alfred Higgs, J.P., chemist, President of the Thames Valley District Chemists' Association.

Kitching. — On November 2, Arthur Scott Kitching, Chemist and Druggist, Oakengates, Salop. Aged 34. Mr. Kitching was one of the youngest members of the Wolverhampton and District Chemists' Association, and at a meeting of the Association on Thursday, November 5, a vote of condolence was passed, and the Secretary was instructed to write a letter of sympathy to Mrs. Kitching in her sorrow. At the funeral, which took place on Friday, November 6, the Association was represented by the President and Mr. Gibson, who took a wreath from the Association.

Neave.—On November 2, W. J. Neave, of Fordingbridge, head of the well-known firm manufacturing "Neave's Food," Mr. Neave was a magistrate of the Fordingbridge Division, and Chairman of the New Forest Liberal Association. He was a Free Trader and an earnest temperance advocate. Mr. Neave has but recently returned from America, since which time he had not been in good health.

Pennack.—On November 6, at 5, North Road, Longsight, Manchester, William Pennack. Aged 58 years. As a representative of Camwal, Limited, and one of the managers of the Manchester branch of that concern, Mr. Pennack was well-known and much respected among chemists. Mr. Pennack's urbanity and geniality, combined with his wonderful enthusiasm for work, will be long remembered by those who were brought into contact with him—especially in connection with the many exhibitions at which he represented his firm. On Monday last his remains were reduced to ashes at the Manchester Crematorium, in accordance with his own wishes; and among those who attended to pay their last respects to the memory of the deceased gentleman were Mr. Harry Kemp (Director of Camwal), Mr. E. Cannon (Manager of Works), and Mr. F. H. Kidson (Cashier). Four of the employees of Camwal acted as bearers.

Thompson.—On November 6, Isaac Cooke Thompson, Chemist and Druggist, Liverpool. Aged 60. Mr. Thompson, who had been a member of the Pharmaceutical Society since 1899, died suddenly from the effects of an apoplectic stroke at his residence, 53, Croxteth Road, Liverpool. During many years he was intimately associated with the scientific life of the city, and on the announcement of his death Sir Oliver Lodge and Professor Herdman addressed appreciative letters to the local press, giving an account of his scientific work. He took an active part in the work of the Liverpool Marine Biological Committee, and was appointed Treasurer of the Biological Society on its formation, and subsequently became its President. He was a Fellow of the Linnean Society, contributing many papers to its proceedings, and was a member of the Liverpool Microscopical Society. In fact, there were few local organisations for the advancement of science and the applications of scientific teaching in which Mr. Thompson did not play a prominent part. Dr. Herdman, in a letter to the *Liverpool Mercury*, states that most of Mr. Thompson's published papers deal with the Copepoda of Liverpool Bay and the Irish Sea, and many in Liverpool must have heard him expound, either in the lecture hall or in conversation, the importance of these minute crustaceans to man, both as the food of many fishes, and also as scavengers of the sea. He had just completed a large report, undertaken jointly with Mr. Andrew Scott, on the Copepoda of the Ceylon pearl banks, which will be issued in a few weeks by the Royal Society. His death, coming suddenly in the midst of his activities, leaves a gap in many relations of life, which it will be difficult to fill.

Walshaw.—On November 6, the wife of R. C. Walshaw, M.P.S., Market Place, Huddersfield. Aged 43.

Wilkins.—On November 1, at 28, Grafton Square, Clapham, Thomas North Wilkins, Chemist and Druggist. Aged 78 years. Mr. Wilkins was for forty-six years in business at No. 8, The Pavement, and was greatly respected by Old Clapham residents of a decade or two ago, much sympathy being felt and expressed when, in 1895, he was obliged to give up business owing to expiration of lease.

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Formulary (M. C.—250/5).—See reply to "J. W. G."

Trade Mark (H. T. R.—100/20).—We should imagine not.

Ointment (T. W. H.—100/26).—It appears to be marshmallow ointment.

Labels (E. A. T.—240/46).—None of the labels you send incurs liability.

Labels (W. M.—100/34).—The three labels you sent do not incur liability to stamp duty.

Recipes (J. T.—250/1).—The recipes have been received, and will be published in due course.

Journal for Midwives (J. M. H.—100/6).—We do not know that any such journal is published.

Tucker's Asthma Cure (E. W.—100/27).—We are unable to say what this preparation contains.

Labels (G. W. B.—100/32).—(1) No. (2) No. (3) Yes, if it is not held out or recommended in handbills, etc.

Dispensing Liniment (W. F.—100/13).—The use of belladonna liniment in such cases should not be encouraged.

Labels (J. S. W.—244/36).—Your labels have been marked and returned, with the words which incur liability underlined.

Coat of Arms (W. E. M.—100/12).—Write to the Secretary of the Pharmaceutical Society, explaining what you wish to do.

Formulary (J. W. G.—100/29).—We cannot undertake to supply more than one copy to each member at the special subscription rate.

Labels (J. H. H.—100/21).—In both instances you must omit the names in the possessive case, unless you publish the formulæ on the labels.

Ink for Parchment (E. W.—100/27).—Any good record ink may be used for the purpose, provided you prepare the surface of the parchment with precipitated chalk.

Cough Syrup (A. R.—240/25).—It will be equally liable whether you call it "Children's Cough Syrup" or "Black Currant Cough Syrup."

Incandescent Spirit Lamp (K. M. K.—100/31).—You can obtain the lamp from Messrs. George Houghton and Son, 88, High Holborn, London, W.C.

Formulary (C. M. S.—248/22).—Your suggestions will receive consideration in due course. Interleaved copies must be specially ordered after the book is published.

Recipes (C. H. W.—243/47).—Your recipes will appear in the 'Formulary' in due course. In reply to your numbered questions—(1) No, (2) No, (3) No, (4) Yes, (5) No.

Lozenges (A. S.—100/30).—So far as we can judge from the information you send, none of the articles will be rendered liable, except those which you already stamp.

Formulary (J. T. G.—243/15).—Thanks for your suggestions. The recipes will be arranged as you suggest, and the other points which you raised are under consideration.

Label (J. G. H.—100/14).—Pomades and other toilet preparations are not liable to stamp duty, unless recommended for some ailment. Yours is not rendered liable by the label you send.

Caffeine (W. S. N.—249/8).—You might apply to the general secretaries of the British Pharmaceutical Conference, 17, Bloomsbury Square, London, for a grant from the Research Fund.

Carpet (D. T. E.—100/17).—So far as we can gather from the letter you enclose, the colours have been bleached. You might try the effect of solution of ammonia. The letter has been returned to you.

Borated Talc (H. M. D.—241/1).—There is no such formula in the U. S. P. Purified talc is sometimes used as a dusting powder, mixed with about one-sixteenth of its weight of powdered boric acid.

Practice of Medicine (H. W.—246/28).—You surely do not expect the Pharmaceutical Society to publish a book treating of the practice of medicine. Apparently you have failed to grasp the requirements of the situation, or you would not write such a letter.

Stamping Medicines (W. B.—239/6).—Entire drugs, as we have repeatedly stated, do not need to be stamped in any case. Compounded medicines only require stamping when held out or recommended for the prevention, cure, or relief of any ailment, or when proprietary rights are claimed therein. Veterinary medicines and perfumes are not liable, unless recommended for human ailments.

Book on Physiology (F. J. Y.—100/15).—Gamgee's 'Physiological Chemistry of the Animal Body,' Vol. II. (Macmillan, 18s.), or Halliburton's 'Chemical Physiology' (Longmans Green. 25s.) should answer your purpose. A smaller book is Halliburton's 'Essentials of Chemical Physiology' (Longmans Green. 5s.). All the above are in the Library of the Pharmaceutical Society.

Glycerin Tinctures (W. W.—243/40).—Doubtless you could protect the name as suggested, and no one else would then be entitled to apply it to similar preparations. We doubt the expediency of using the name in the 'P.J. Formulary.' Provided you are able to prove that the name originated with you, no one could prevent you from using it, even though you had not registered it.

Labels (J. K.—99/24).—The following labels sent by you will render the medicines liable:—"Antibilious Pills," "Gout and Rheumatic Pills," "Neuralgia Mixture," "Diarrhœa and Cholera Mixture," "Neuralgic Tincture," "Neuralgic Pills," and "Cough Lozenges." It is immaterial what price you charge for the box or packet; liability will be incurred in any case after December 31, unless you disclose the recipes, or publish them and indicate that fact on the labels. It is not now necessary to quote the numbers of the recipes on the labels. The other labels you send, or mention, do not in themselves incur liability.

Sp. Ether. Nit. (J. W. S.—100/36).—The definition of "spirit" is a wide one, and includes "all mixtures, compounds, or preparations made with spirits." No person unprovided with an Excise licence, unless coming within the category of privileged persons created by 16 Geo. II., c. 8, is entitled to sell such preparations. You are quite right in assuming that an unlicensed trader (not a chemist) would be infringing the law by selling tinct. rhei co., etc., and it is a moot point whether wholesalers supplying such unauthorised persons would not be hit under Section 147 of the Spirits Act, 1880. This is a point for the Revenue authorities to consider.

Calendar for the Week (November 15—21, 1903).

Days of M	Days of W	Events of the Week.	Sun Rises	Sun Sets.
15	**S**	**Twenty-third Sunday after Trinity.**	7.18	4.11
16	M	Cambridge Pharmaceutical Association founded, 1892.	7.20	4.10
17	Tu	The Suez Canal Opened, 1869.	7.22	4.8
18	W	Pharmaceutical Soc. G.B., Evening Meeting in Edinburgh, at 8.30. Chemical Society, Burlington House, W., at 5.30 p.m. Leeds College of Pharmacy, Smoking Concert, at 7 p.m. London Chemists' Association, at 3.30 p.m. Western Chemists' Association (of London), at 6.30 p.m.—Annual Dinner.	7.23	4.7
19	Th	●New Moon, 5.10 a.m. Bournemouth Pharmaceutical Association, at 9 p.m.—Annual Meeting. Chemists' Assistants' Association, at 8.30 p.m. Glasgow and West of Scotland Pharmaceutical Association, at 9.15 p.m. Lincoln and District Chemists' Association, at 8 p.m.—Supper and Annual Meeting. Linnean Society, Burlington House, at 8 p.m.	7.25	4.6
20	F	School of Pharmacy Students' Association, at 5 p.m.	7.27	4.5
21	S	Inter-Pharmacy Football League.—Westminster *v.* Metros.	7.28	4.4

PUBLICATIONS RECEIVED.

The Manufacture and Uses of the Principal Ointments of the British Pharmacopœia. Pp. 3-43. London: Rouse Bros., Pharmaceutical Chemists, 61, Charlotte Street, Tottenham Court Road, W.C. 1903. From the Publishers. Contains a useful essay on the manufacture of ointments, methods of tinting and perfuming, with a summary of the work that has been done by various investigators on some pharmaceutical ointments, and other information, therapeutical and general, of value to chemists.

Plant Disease and its Relation to Animal Life. By E. F. Wright. Pp. 160. London: Swan Sonnenschein and Co., Limited, Paternoster Square. 1903. From the Publishers.

The Latin Grammar of Pharmacy. For the Use of Medical and Pharmaceutical Students. By Joseph Ince, F.C.S., F.L.S., F.G.S. English edition. Pp. viii. + 371. Price 5s. net. London: Baillière, Tindall and Cox, 8, Henrietta Street, Strand. 1903. From the Publishers.

Scientific and Industrial Bulletin of Roure-Bertrand Fils of Grasse. Part I. Scientific work. Series 1, No. 8. Pp. 77. Evreux: Imprimerie de Charles Hérissey, 4, Rue de la Banque. 1903. From the Publishers.

Sei Lezioni sulle Fermentazioni Microbiche ed Enzimiche. By Professor Dioscobide Vitali. Milano: Tipografia del Reformatorio Patronato, Via Quadronno, 42. 1903. From the Author.

Aluminium, the Chief Inorganic Element in a Proteaceous Tree, and the Occurrence of Aluminium Succinate in Trees of This Species. By Henry G. Smith, F.C.S. Pp. 107-120, with Plates IV. (Reprinted from *Journal and Proceedings of the Royal Society of New South Wales*. Vol. XXXVII.) From the Author. Has already been noticed in the *Pharmaceutical Journal* (see pages 324 and 549 of the present volume).

The Analytical Chemistry of Uranium. By Harry Brearley. Pp. 45. Price 2s. net. London: Longmans, Green and Co., 39, Paternoster Row. 1903. From the Publishers.

Silajit: An Ancient Eastern Medicine. By David Hooper, F.C.S. Reprinted from the *Journal, Asiatic Society of Bengal*. Vol. LXXII., Part II., No. 3. 1903. From the Author.

☞**LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from** Messrs. Adams, Adcock, Akhurst, Alcock, Allan, Allen, Allenby, Anderson, Andrew, Aram, Arblaster, Arkle, Armitage, Arrowsmith, Aspinall, Atkins, Averill, Axe, Bagshaw, Bailey, Bain, Baker, Balcomb, Baldwin, Balfre, Bancroft, Bane, Barnard, Barnes, Barron, Barrow, Bates, Batty, Baxter, Beal, Beall, Beard, Beathe, Beck, Betts, Betty, Bevan, Bienvenu, Billings, Bing, Birch, Bird, Birkbeck, Birkett, Black, Blackburn, Blanchford, Bletsoe, Blinkhorn, Blissett, Blunt, Boothroyd, Borland, Bottomley, Bourdas, Bourquelot, Bowden, Bowen, Bowman, Bramley, Brook, Brown, Brownhill, Brunt, Bryant, Buchanan, Bucher, Buck, Buckley, Burdon, Burgess, Burnell, Burnett, Bush, Bushy, Butterfield, Calvert, Campbell, Cardno, Carmichael, Carnerson, Carr, Carson, Cave, Chalmers, Chapman, Cherrett, Christopher, Churchill, Clark, Clarke, Clague, Clay, Clarkson, Clayton, Cleland, Clement, Clegg, Coates, Cochrane, Cocking, Cole, Coleman, Collins, Cooley, Cooper, Corfe, Cossey, Cox, Craig, Cripps, Crofts, Crompton, Cross, Crowden, Crowther, Cryer, Cubey, Cummings, Curtis, Cuthbert, Dalamar, Dampney, Daniel, Davey, Davidson, Davies, Davis, Denney, Dennis, Desmond, Dester, Dickinson, Dietzsch, Dixon, Dobson, Doe, Donaldson, Dorman, Dougall, Dow, Downing, Dreweth, Duffin, Duncan, Dunn, Dyson, Eastwood, Eaton, Edward, Elborne, Eldred, Elliott, Ellis, Elstob, Elwell, Epstein, Evans, Evison, Eynon, Farghar, Farr, Featherstone, Fieldsend, Fingland, Fitzgerald, Flanders, Fleming, Flint, Flood, Floyd, Foggan, Folkard, Ford, Fordham, Forrest, Forster, Forsyth, Fosse, Foster, Fox, Francis, Franklin, Fraser, Freeman, Froom, Frost, Fuller, Furber, Gadd, Gaddes, Gardner, Garry, Gates, Gibbs, Gibson, Gifford, Giles, Gilkes, Gill, Gilmour, Girling, Glasspool, Gooch, Goodall, Goodess, Goodwin, Gordelier, Gordon, Gostling, Goudie, Gower, Grayson, Greaves, Green, Greenish, Gregory, Grier, Griffin, Grimble, Grissbrook, Gulliver, Gwatkin, Hadfield, Haining, Hall, Hallaway, Hamnett, Hampson, Hannah, Harper, Harris, Harrison, Harrold, Hart, Harvey, Harvie, Haslam, Hawley, Hayllor, Haythornwaite, Heap, Heddle, Hemingway, Hepper, Herington, Hey, Hicking, Hill, Hills, Hind, Hocker, Hodder, Hodgson, Hole, Holland, Holmes, Hope, Horn, Horner, Horrell, Horsfield, Houfe, Hudson, Hughes, Humphrey, Hunt, Hunter, Hutchin, Hutchings, Hyslop, Iliffe, Ingham, Ingle, Inglis, Ireland, Izon, Jaap, Jackson, Jefferson, Jesson, Jewell, Jinks, Johnson, Johnstone, Jones, Jowett, Judge, Katley, Kay, Keally, Kelf, Kempton, Kennett, Kent, Kirfoot, King, Kirby, Kirk, Kirkby, Kirke, Knight, Knott, Lambie, Lance, Lawson, Leach, Lee, Leefe, Leeney, Leening, Lees, Lengden, Lester, Lewis, Lincolne, Lister, Llewelyn, Lloyd, Lockhart, Lockwood, Long, Lord, Loveridge, Maben, McAdam, McEwan, MacFrazer, MacGilliwray, Mackenzie, McKing, McLaren, McLeod, McMyn, Macnaughton, McNay, McVittie, Madgwick, Mander, Markham, Marris, Marshall, Mason, Massie, Masterman, Matthews, Meadowcroft, Medley, Melbourne, Meshach, Metcalfe, Miller, Milligan, Mitchell, Moffatt, Monk, Monk-Jones, Moore, Morgan, Morris, Mountain, Munn, Murray, Nash, Need, Neil, Nesbit, Newby, Newton, Nicholls, Nock, North, Norton, Norwood, Oldbury, Oldfield, Orrell, Orton, Osborne, Ough, Owen, Pain, Palmer, Parker, Parkinson, Pater, Peake, Peel, Pendlebury, Peters, Pettigrew, Pettinger, Peverell, Philip, Phillips, Philp, Philpotts, Pickering, Pigott, Pitchford, Polgreen, Pollard, Pottage, Powell, Price, Priestley, Pringle, Prior, Proctor, Purse, Raff, Raffan, Ramsay, Ramsey, Randall, Rayner, Reid, Richards, Richardson, Ricketts, Ridley, Righton, Riley, Rimmington, Ritson, Rittershausen, Robb, Roberts, Robertson, Robinson, Roe, Rollett, Rollin, Roper, Rossiter, Round, Row, Rudd, Ruoff, Sadler, Sampson, Samuel, Sanders, Saul, Saunders, Savage, Scarfe, Scott, Scraftin, Searle, Seivwright, Selleck, Sergeant, Sexton, Sharp, Sharply, Shattock, Shaw, Shepherd, Shepheard, Sherriff, Sherwood, Shields, Shrubsole, Shuttleworth, Simpson, Sinclair, Sirvai, Skirrow, Slade, Slater, Slinn, Smalley, Smart, Smith, Snow, Soddy, Spence, Squire, Stableforth, Stabler, Stamp, Standing, Stead, Stedman, Stephens, Stevenson, Stewardson, Stewart, Stones, Stooke, Storey, Strang, Strickland-Strother, Stroud, Stuart, Sumners, Surfleet, Sutcliffe, Swinbank, Swinn, Swire, Symonds, Taylor, Teebay, Thackray, Tharratt, Thirsk, Thomas, Thompson, Thomson, Thornton, Thorp, Thorpe, Thursfield, Tildersley, Tiley, Tocher, Tollitt, Tolmie, Tomlinson, Town, Travis, Trick, Turner, Upfill, Vawser, Verrill, Vizer, Waddington, Wain, Wakeham, Walker, Wallis, Walmsley, Walshaw, Walter, Walton, Wanless, Want, Ward, Wardleworth, Wass, Waterston, Watt, Webster, Wells, Wellwood, Welton, White, Whitehead, Whitehouse, Whiston, Whittle, Wilcock, Wilkins, Will, Williams, Williamson, Wilman, Wilson, Wood, Wokes, Woolley, Wootton, Worfolk, Wright, Wynn, Yates, Yewdall, Young.

Telegrams "PHARMACEUTICAL JOURNAL LONDON"
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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, November 19, 1903.

A Chemist and Druggist has been found guilty of "receiving" stolen pills. Defendant had advertised these pills to the trade at less than cost price.

The Value of Local Organisation among chemists was referred to by the President of the Pharmaceutical Society at the Tunbridge Wells chemists' annual dinner.

At Last Night's evening meeting of the North British Branch of the Pharmaceutical Society, held in Edinburgh, Dr. Taylor Grant read a paper on Bacterial Therapeutics. The first portion of the paper appears in this issue.

The Case of Burroughs, Wellcome and Co., against Thompson, Capper and Co. will, it is anticipated, come up for hearing to-morrow (Friday). A large number of well-known pharmacists have been summoned to give evidence.

The Chemists of Hartlepool and District have entered into a contract with a firm for the inspection and adjustment of all scales belonging to the members of the local association. The question of co-operative buying has also been discussed by this association.

Chemists May Not Break Bulk in the case of their own stamped packages of dutiable medicines, in order to sell small quantities loose without re-stamping. The latest information about the Board of Inland Revenue's change in practice will be found at page 737.

At the Annual Dinner of the Western Chemists' Association, Mr. C. B. Allen pointed out the difference between the 'Pharmaceutical Journal Formulary' and the 'Compendium of Medicines' which the Council of the Pharmaceutical Society has decided to publish.

Recipes Received after this date will be reserved for a supplement to, or a subsequent edition of, the 'Pharmaceutical Journal Formulary.' Members and student-associates of the Society may still subscribe for the book at the special rate, but the offer will shortly be withdrawn; for particulars see this week's *P.J. Inset.*

Vol. 71. No. 3396. (4th Series, Vol. 17. No. 1743.)

The Sheebeening Chemist of Aberdeen, William Duffus, has again been convicted and fined £15 and 32s. 6d. costs. A witness said he heard a man under the influence of drink say to another in a similar predicament, "We'll awa' and get twa pints." The two men then entered the chemist's shop.

An Interesting Presidential Address has been delivered before the members of the Midland Pharmaceutical Association by Mr. A. W. Gerrard, who gave it as his opinion that more attention should be paid, in schools of pharmacy, to instruction in the manufacture of galenicals. Dr. Symes, speaking subsequently, endorsed those views.

At a Meeting of the London Chemists' Association, held on Wednesday, Mr. John Humphrey explained the position of chemists with regard to the Medicine Stamp Acts, and Mr. G. P. Pond advocated federation of chemists. On the motion of Mr. R. B. Betty, the Association recommended that the Federation of Local Pharmaceutical Associations hold two general meetings, instead of one, annually.

Eleven Cases in which penalties were inflicted for infringements under the Pharmacy Act were heard before the Glasgow Sheriff on Thursday of last week. Only one of the defendants was a proprietor and of the other ten, six were unregistered persons employed in chemists' shops and four were unqualified assistants in charge of doctors' shops. The cases, which were briefly mentioned last week, are reported more fully in this issue.

The Inefficient Training of pharmaceutical students during apprenticeship has been deplored by Mr. E. S. Peck in a speech at Cambridge, and was quoted by Mr. C. B. Allen, at the dinner of the Western Chemists' Association of London last night, as the main cause of failures in the Minor Examination. Mr. W. Lyon contributes this week a further article, in which he discusses, not altogether favourably, the practical portion of the same examination.

The Quiet Season has already set in on Mincing Lane, and the market in drugs and chemicals during the week has been very dull.

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THE 'FORMULARY' AND THE 'COMPENDIUM.'

There still seems to be some confusion in the minds of chemists and druggists with regard to the 'Pharmaceutical Journal Formulary' and the 'Compendium of Medicines' which the Council—acting on Mr. Carteighe's suggestion—has decided to publish "By Authority." The Formulary, as the Vice-President of the Pharmaceutical Society reminded the members of the Western Chemists' Association (of London), at the dinner on Wednesday, the 18th inst. (see page 750), is an unofficial work, the publication of which has been rendered necessary by the change in practice announced some months ago by the Board of Inland Revenue. With the object of minimising the difficulties likely to be caused by that change in practice, the Editor of the *Pharmaceutical Journal*, after interviewing the authorities at Somerset House, arranged to register all suitable private recipes sent to him by chemists and druggists, and subsequently to publish them in a book, such separate publication being considered essential by the Board of Inland Revenue. A large number of such recipes have been published in the *Pharmaceutical Journal*, but four or five times as many still remain to be dealt with, and will only see the light in book-form. Judging from the numerous inquiries received from contributors as to when their formulæ will appear, it is necessary to call special attention to this point. All recipes sent previously to October 31, with the exception of a very few which it has been found necessary to omit, will appear in the book. An effort will also be made to include those sent since the beginning of November, but it is now quite impossible to guarantee the inclusion in the first edition of the 'Formulary' of any more recipes which may be sent.

At the same time, the Editor is still prepared to receive and register recipes of all kinds submitted by chemists and druggists, with a view to publishing them in a supplement to, or a subsequent edition of, the book. This opportunity may be taken of saying, in reply to a few critics who have found fault with individual formulæ, that although some of the recipes are unscientific in construction, the great majority are, so far as can be judged, of no little value, the ingredients having been combined with considerable skill. But for all that, no responsibility can be accepted by the Editor, who is merely endeavouring to save chemists and druggists generally, and members of the Pharmaceutical Society in particular, from being unduly inconvenienced by the Board of Inland Revenue's change in practice. In addition to the private recipes contributed by chemists and druggists, the 'P. J. Formulary' is to contain some hundreds of formulæ for unofficial galenical preparations, veterinary medicines, microscopical stains, reagents for use in bacteriological and urinary analysis, dental and toilet preparations, and the thousand and one other articles which chemists and druggists are continually being asked for, and like to make themselves if possible.

The 'Compendium of Medicines' will be a work of very different character. To begin with, it is to be published "By Authority," and it will therefore rank with the British Pharmacopœia as a work of reference and a professional guide. The book is intended to supplement, rather than replace, existing works of reference, but as it will, if possible, be republished annually, and sold to members of the Pharmaceutical Society at a nominal price, it is obvious that the 'Compendium' can be kept up to date in a much more satisfactory manner than any existing dispensing guide, while chemists and druggists will be furnished with the information they are most in need of at an extremely moderate cost. The first issue of the work will probably be little more than a carefully edited compilation of facts and formulæ for which the working pharmacist now has to refer to half-a-dozen different volumes. The ultimate object, however, is the production of such a dispensatory as the members of the Pharmaceutical Society may well be proud of—which every one will be expected to take a share in helping to improve, for the common good.

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LIABILITY TO MEDICINE STAMP DUTY.

THE latest information on the medicine stamp difficulty will be found in a paper published in this week's Journal (see p. 737), which may fairly be regarded as embodying the views of the Board of Inland Revenue at the present time. The paper was read at a meeting of the London Chemists' Association, on Wednesday last, having been specially prepared, by request, for the purpose of enabling chemists and druggists to understand clearly when compounded medicines must be stamped for ordinary retail sale. Arrangements have been made by the Secretary of the London Chemists' Association to send reprints of the paper, in pamphlet form, to all the members of the body he represents, and the Editor is prepared to make arrangements with the secretaries of other local associations whereby copies of the pamphlet can be supplied for distribution at a nominal cost, if orders are sent forthwith. Any reader of the Journal can obtain a copy of the pamphlet by sending twopence in stamps to cover cost and postage.

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THE ELEVEN CONVICTIONS AT GLASGOW.

ELEVEN cases, in which twelve offenders under the Pharmacy Act were involved, were heard in the Glasgow Sheriff Court on Thursday of last week, In each case the Sheriff inflicted a penalty. Of these eleven prosecutions instituted by the Pharmaceutical Society, only one was against a proprietor, whilst of the remaining ten, four were against the unqualified assistants of doctors, and six against the unregistered employees of chemists and druggists. It will be remembered that two years ago seven medical practitioners of Glasgow, whose unqualified assistants had been convicted of selling scheduled poisons, appeared before the General Medical Council, and that that body declared the practice of leaving such persons in charge of open shops where poisons were sold to be a grave professional offence, and fraught with danger to the public. Subsequently the Council issued a notice to the effect that any medical practitioner who offended in this way would be liable to be judged as guilty of "infamous conduct in a professional respect."

Nearly two years have elapsed since that notice was circulated, and during that period the doctor proprietors of medical halls who had been accustomed to disregard the Pharmacy Act have had an opportunity of setting their house in order. That some among them have neglected to take advantage of the time afforded them to do as HEZEKIAH did in the days of old is evident from these five convictions; but it is to be hoped that this reminder will be sufficient to convince them of the necessity for early attention to this matter. That the medical employers recognise the importance of keeping the law is evident, from the fact that most of them declared they had given orders to their assistants not to sell poisons, and in at least one instance a medical employer had gone so far as to dismiss the offending assistant. Whilst these things were happening two years ago, the complaint was made that the Pharmaceutical Society did not institute proceedings in cases where chemists were concerned; of course this assertion was absolutely unfounded, and the six employees of chemists who waited in the Sheriffs' Court while the offending assistants of doctors had their cases decided, must be sufficient to show that the Society does not discriminate between offenders belonging to different callings. Complaints were made by the defendants of the manner in which these convictions were obtained, and these complaints have been upheld in the local press; but it must be remembered, as the Society's solicitor pointed out, that none of the cases was taken up until complaints had been made that there was a practice of selling poisons; the assistance of the detective was only called in order to prove the sale. It is hardly probable that an unqualified assistant would sell a scheduled poison to a person wearing a hat which bore a badge of the Pharmaceutical Society, even though he would supply it to all and sundry besides.

The Glasgow press has also taken to heart the statement of the Pharmaceutical Society's agent, who asserted that there was no place in the country where there were more persistent and glaring offences committed against the Pharmacy Act than in that city. But at the same time the same journals insist that the greatest care should be taken to see that poisons are sold to the public only by qualified and responsible persons, and it commends the action of the Pharmaceutical Society in initiating these prosecutions. These eleven prosecutions will, let it be hoped, be the turning point in Glasgow's character, and it will henceforth, doubtless, deserve a better reputation than that imputed to it by the Society's agent.

A WORD FROM WITHOUT.

Mr. Marshall Hall, K.C., M.P., is a man in whom pharmacists take no little interest. A "backer" of the Pharmacy Bill last Session, he showed, at the annual dinner of the Pharmaceutical Society last May, that he was thoroughly familiar with the conditions under which a chemist and druggist carries on his business. And, although the deductions which Mr. Marshall Hall then drew from his experience did not, and do not, commend themselves universally to those who practise pharmacy, his opinion is none the less entitled to consideration. It is not without interest, therefore, to mention a few of the remarks made by the member for Southport when defending a chemist at the County of London Sessions last Saturday. Mr. Marshall Hall made a strong point of the fact—well known to chemists but hidden, alas! from most of the laity—that the intrinsic value of the most popular "patent" medicines is practically nothing compared with the price at which they are sold—*i.e.*, the fictitious value caused by extensive advertising. He proceeded to deplore the self-drugging which results from such advertisements, and explained that the retail chemist cannot be blamed for supplying the concoctions if the public persists in asking for them. The further statement that "chemists are often merely sundriesmen nowadays" contains, unfortunately, a large proportion of truth, and shows that Mr. Marshall Hall has a keen perception of what things often are in pharmacy. Those who attended the last annual dinner of the Pharmaceutical Society know that Mr. Marshall Hall is equally keen to see pharmacy attain the ideal which is not.

THE BUYER'S RESPONSIBILITY.

The case in which a chemist and druggist has been found guilty on a charge of "receiving ' stolen pills (see page 760) conveys more than one moral which traders in general should take to heart. Briefly, the circumstances of the case were that a travelling "general dealer" sold to the defendant Davies, who was a chemist in business at Hackney, a large quantity (over £80 worth) of stolen proprietary pills, including Beecham's, Scott's, and Williams'. Davies, according to his own account, assumed that the pills had been honestly come by, in spite of the fact that they were offered to him at less than the lowest wholesale price. He bought the pills, and afterwards sold some to the public, and others, after advertisement, to the trade. His books, he said, were somewhat irregularly kept, a circumstance which, it was argued on his behalf, would account for his inability to produce any receipt for the £80, or any record in his ledgers of the purchase or sale of the pills. Finally, in spite of the brilliant advocacy of Mr. Marshall Hall, the jury found Davies guilty, though with a recommendation to leniency, sentence being postponed until next Sessions. So far as Davies is concerned that is practically the whole story, with the exception that he was proved to have lied on more than one occasion to the police officers who interrogated him on the matter. He was, in fact, described by his own counsel as an "arrant moral coward."

If Davies had told a consistent story there is no doubt, as Mr. Marshall Hall stated, and as the presiding judge agreed, that he would not have been placed in the dock. But, apart from the morality of the defendant's action in this case, there are certain other lessons to be drawn The chemist who buys packed goods, or indeed anything, from a travelling huckster of the "general-dealer" class at a price lower than the wholesale price, may be running a very serious risk. He may find it difficult to convince a jury that, after reasonable inquiry, he had satisfied himself that the goods had come honestly into the possession of the vendor. If, in addition, he is unable to trace, by means of a regular and orderly system of book-keeping, and by the production of invoices, receipts and entries of purchase and sale, the whole history of the transaction, he is undoubtedly in a position of great peril. It was shown in evidence that the pills had been offered at less than the wholesale price to a large number of chemists in North London and elsewhere, and that they had refused to buy. That very proper action would no doubt be the course adopted by the vast majority of careful men of business. But the gravity of the Davies case is such as to warrant this word of warning to any chemist who, while of perfectly honourable motives, may fail to exercise the utmost caution in his business dealings and the most systematic regularity in keeping his account books.

A TIMELY LESSON.

Workers in the field of experimental science and Mr. Stephen Coleridge have for some time past kept a watchful eye on each other's movements. The horror with which Mr. Coleridge has watched the physiologists has in the past been met with little more than a feeling of amused tolerance on their part. But, lately, the spokesman of the Anti-vivisectionists has been a little too out-spoken, and the foolish fanaticism which led Mr. Coleridge to give utterance to slanderous statements concerning an operation performed by Professor Bayliss on an anæsthetised animal, has led to a lengthy action in the High Court and in an adverse verdict with damages to the extent of £2,000. The facts of the case were all against Mr. Coleridge, who unless the Anti-Vivisection Society comes to his aid, will have to pay very severely for his indiscretion. The case furnishes a timely lesson to all laymen who allow their sentiments to blind them, alike to actual facts and to a sense of what is decent and permissible in their relations with their fellow-men.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Preparation of Pure Iodine.

L. W. Andrews publishes (*Amer. Chem. Journ.*, **30,** 428) a method for producing iodine free from contamination, making use of the following reaction between fused potassium bichromate and potassium iodide :—

$$5K_2Cr_2O_7 + 6KI = 8K_2CrO_4 + Cr_2O_3 + 6I.$$

The process necessary is given as follows :—Pulverise potassium iodide with one and four-tenths its weight of potassium bichromate, each salt having been previously fused separately to ensure perfect dryness. Introduce the thoroughly incorporated mixture into a wide tube, closed at one end, and heat to about 200° in a current of dry air to expel any moisture which may have been taken up during the pulverisation. Place a plug of dry glass wool over the mixture and wipe out carefully the interior of the tube above the plug with absorbent cotton secured to a glass rod. Slip over the open end of the tube a second, short one fitting it as snugly as possible. Fix the tube at an angle with the horizontal, and heat the powder gradually with a small flame, using, if necessary, a screen of asbestos board. Having sublimed the iodine into the upper part of the tube, cut off the latter when cold at a point 2 or 3 Cm. above the glass-wool plug. The author appends to his paper a note stating that a nearly identical method has recently been published by L. L. de Koninck.—*Bull. de l'Acad. Roy. Belg.*, **17,** 15.

Fungicides and Insecticides.

The Bureau of Chemistry of the United States Department of Agriculture has recently issued a bulletin giving analyses of a large number of the insecticides and fungicides offered for sale in America. These analyses show that great variations occur in the composition of such standard materials as Paris-green and London-purple. They further show that many of the patent preparations for the complete extermination of all insects and fungi contain nothing that could be of any value either as an insecticide or fungicide, or even as plant food. Others are composed largely of some neutral material to which a little tobacco, pyrethrum, or some arsenical poison has been added.—*Gard. Chron.*, **34,** 205.

Natural Immunity of Vipers and Snakes to Viper Venom.

Although as far back as 1781 Fontana stated that "the venom of vipers is not a poison for its species of snake," subsequent investigators have not arrived at results which accord amongst themselves. Some have stated that the immunity of vipers to viper venom is complete, others that it is non-existent, or merely modified. C. Phisalix has re-investigated the subject. He finds that vipers are so far tolerant of viper venom that they are practically, but not absolutely, immune to it. The lethal dose, either when the venom is introduced subcutaneously or into the peritoneum, is 500 or 600 times greater than it is for guinea-pigs. If, however, the venom be brought in direct contact with the brain of the snake, the relative immunity is much less marked, not exceeding twenty-five to thirty times that of the guinea-pig. A viper may, therefore, be killed when fighting with another if the poison fangs penetrate the skull; but since the skull bones of these snakes are exceptionally hard, this is not likely to occur under ordinary conditions. It may, therefore, be concluded that viper venom is not a poison for vipers under the natural conditions of inoculation.—*Compt. rend.*, **137,** 270.

Ruthenium Silicide.

By fusing together silicon and ruthenium, or a mixture of silicon, ruthenium and copper, in a charcoal crucible in a tube of the same material, H. Moissan and W. Manchot have obtained ruthenium silicide, RuSi. When the fused button is broken up and purified by treatment with caustic soda solution on the water-bath, and subsequently with a mixture of hydrofluoric and nitric acids, the residue consists of brilliant crystals of this silicide mixed with carborundum. From this it is separable, in consequence of the differing density of the two bodies, by immersion in methylene iodide. The crystals of RuSi thus obtained consist of dendritic prisms terminated by pyramids, white in colour, with a metallic aspect. When slightly oxidised, as sometimes occurs, the crystals are of a darker tint. They may then be restored to their normal brilliancy by momentary contact with melted potassium hydrofluoride. They have the specific gravity 5·40 at 4° C., are very hard, easily scratching rock crystal, topaz, and ruby, but the powder is without abrading action on the surface of polished diamond. RuSi is volatile in the electric furnace. It is very stable, but is attacked with incandescence by fluorine in the cold; chlorine attacks it slowly and superficially at 500° C.; at a red heat, however, combination takes place with disengagement of heat, but is not complete even at high temperatures. It burns with a fine flame when suddenly heated in oxygen. Fused potassium chlorate and other oxidising agents attack it slowly without incandescence. The vapour of sulphur decomposes it at a dull red heat, at which temperature it is also slowly attacked by metallic sodium and by magnesium. It is unaffected by most acids at their respective boiling points; a mixture of nitric and hydrofluoric acids is without action on it in the cold, and only reacts very slowly on warming. Fused caustic potash and its carbonate barely affect RuSi, but a mixture of potassium bisulphate and nitrate in fusion gradually oxidises it into per-ruthenate. Although potassium hypochlorite readily attacks metallic ruthenium it is without action on ruthenium silicide.—*Comp. rend.*, **137,** 229.

Halogen-Starch Preparations.

According to the Germ. Patent 142,897, stable preparations containing iodine or bromine in easily assimilable form and suitable for internal use may be obtained as follows:—To freshly made and cooled starch mucilage, iodine dissolved in potassium iodide, or bromine in potassium bromide solution, is added, using one part of the halogen for ten parts of starch. Alcohol may also be used as solvent for the halogen element. A solution of ten parts of tannin or tannic acid is then added, and the precipitate allowed to deposit. It is once washed with water, then centrifuged, and dried *in vacuo* below 60°.—*Pharm. Zeit.*, 1903, 553.

Temperature-Record in Autoclaves.

Various devices have been adopted in order to prove that substances heated in an autoclave have really attained the desired temperature, as indicated by the pressure-gauge in connection with the machine. Thus, fusible metal melting at the desired temperature may be immersed or surrounded—*e.g.*, by the surgical dressings it is desired to sterilise. Demande now suggests the use of a series of definite chemical substances, coloured by aniline dyes to be readily distinguishable. Thus, one may use benzonaphthol, coloured yellow, melting at 110° C.; benzoic acid, coloured green, melting at 121° C.; and urea, coloured violet, melting at 132° C. Presumably these substances would be enclosed in tubes, suitably disposed among the contents of the autoclave.—*Rep. Pharm.*, 1903, 6.

CHEMISTS AND THE MEDICINE STAMP ACTS.*

BY JOHN HUMPHREY.

The general effect of the Medicine Stamp Duty Acts of 1802, 1803, 1804, and 1812 is to render it an offence, punishable by a fine of ten pounds, if any person or persons, whether licensed or not, shall utter, vend, or expose to sale, or offer or keep ready for sale, whether for foreign or home consumption—or buy, or receive, or keep for the purpose of selling by retail, either on his, her, or their own account, or on the account or behalf of any other person or persons—any unstamped packet, box, bottle, pot, phial, or other inclosure containing any dutiable cordials, drops, drugs, electuaries, essences, lotions, lozenges, herbs, oils, ointments, pills, plaisters, potions, powders, salves, spirits, tinctures, unguents, waters, or other preparations intended to be used or applied externally or internally as medicines or medicaments for the prevention, cure, or relief of any disorder or complaint incident to or in anywise affecting the human body. Provided the inclosure containing any medicinal preparation is duly stamped, as provided by the Act of 1802, the person making or preparing the medicine, or uttering or vending it, or exposing it to sale, may, if duly licensed, (1) have or claim to have an occult secret or art for making or preparing the medicine, or (2) have or claim to have an exclusive right or title to making or preparing it, or (3) prepare, utter, or vend it, or expose it to sale, under the authority of Letters Patent, or (4) hold out or recommend the medicine to the public (*a*) as a nostrum or proprietary medicine, or (*b*) as a specific, or (*c*) as beneficial to the prevention, cure, or relief of any distemper, malady, ailment, disorder, or complaint incident to or in anywise affecting the human body. In fact, he may make almost any claim he likes, and recommend the medicine practically as he will, upon labels or showcards, or in handbills, books, or advertisements.

The Sale of Entire Drugs.

If, however, the maker or vendor of any medicinal article desires to avoid payment of stamp duty, his freedom of action is restricted as regards making claims to secret arts or proprietary rights, and publishing recommendations, except in the case of drugs which are uttered or vended entire, without any mixture or composition with any other drug or ingredient. A chemist and druggist may prepare or sell a simple or entire drug without being licensed or stamping the inclosures containing the drug; he may also call it by a fancy name, or claim—upon labels or showcards, or in handbills, books, or advertisements—that he prepares the drug by a secret process, or that he has an exclusive right to preparing and vending it, or that he prepares and sells it under the authority of Letters Patent. Further, a chemist and druggist may, without stamping the article or holding a licence, hold out or recommend an entire drug as a nostrum or proprietary medicine, or as a specific, or as beneficial to the prevention, cure, or relief of any human ailment. But it is essential in such a case that the drug shall be uttered or vended entire; if it be mixed or compounded with any other drug or ingredient, except water, the drug comes under the heading of mixtures, compositions, or preparations, and the seller must comply with the regulations affecting the preparation and sale of such articles. Thus, acetanilide or some other suitable drug may be put up and sold as "Headache Powders" without incurring liability to stamp duty; the seller, if a chemist and druggist or the holder of a so-called "patent" medicine licence, is also at liberty to state upon the labels that the powders are "prepared only" by him, or to claim a proprietary right by the use of his own or any other name in the possessive case, or to recommend the medicine as a specific or in any other way that he thinks fit. But if any other ingredient, even a simple colouring matter, be added to the acetanilide, whether an active medicinal substance or not, the special exemption granted to entire drugs ceases to apply, and the powders may then become liable to stamp duty. It is to be noted, by the way, that all tinctures may be liable to duty as compounded medicines, even though some of them are prepared by dissolving a single drug in alcohol.

The Sale of Compounded Medicines.

So far as the Medicine Stamp Duty Acts are concerned, there is no restriction upon the preparation and sale of compounded medicines by chemists and druggists, provided the articles (1) are not, and have not been, the subject of proprietary or patent rights, (2) have not been rendered dutiable by the persons who originally introduced them, and (3) are sold without any attempt at secrecy, while no words are used—on labels or showcards, or in handbills, books, or advertisements—which can be held to express or imply (*a*) claims to secret methods of making the medicines, or exclusive rights or titles to preparing or vending them, or (*b*) holding out or recommending them as nostrums or proprietary medicines, or as specifics. The mere use of the word "specific" on a label for a compounded medicine renders the preparation dutiable, unless it can be proved that the medicine was not recommended as a specific by the first vendor. Further, a medicinal compound which has once been rendered liable to stamp duty remains dutiable for ever, whether the liability is caused by the preparation being, or having been, the subject of proprietary or patent rights, or by the person who originally introduced it having advertised it as a specific or as possessing remedial properties. Thus, Bow's Liniment, Dalby's Carminative, Godfrey's Cordial, and Kay's Compound Essence of Linseed are perpetually liable. If, however, the preparation is not dutiable for any such reason, and there is no mystery about its composition, a chemist and druggist may sell it unstamped and without being licensed, even though it is held out or recommended by him—on labels or showcards, or in handbills, books, or advertisements—for the prevention, cure, or relief of any distemper, malady, ailment, disorder, or complaint incident to or in anywise affecting the human body. Thus, Ammoniated Tincture of Quinine, Camphorated Oil, Tincture of Rhubarb, and other well-known galenical preparations may be sold freely by chemists and druggists under those designations, without incurring liability to stamp duty, even though the preparations are held out or recommended on labels or elsewhere, the reason being that the Medicine Stamp Duty Act of 1812 contains a special exemption in favour of chemists and druggists, with regard to the sale of non-secret compounded medicines, the denominations, properties, qualities, virtues, and efficacies of which are known, admitted, and approved of in the prevention, cure, or relief of any human ailment. A limited company is not entitled to the benefit of this special exemption, even though the whole of the shareholders are registered chemists, or the sales are effected by duly qualified assistants.

How the Statute is Now Interpreted.

The Board of Inland Revenue has decided to regard as falling within this special exemption all compounded medicines prepared in accordance with the formulæ in the British Pharmacopœia, provided that fact is indicated on the labels, even when a proprietary right is ostensibly set up by the use of a name in the possessive case—*e.g.*, Blaud's Pills, Easton's Syrup, and Gregory's Powder. Further, the Board has consented to regard as "known, admitted, and approved" remedies all compounded medicines prepared in accordance with formulæ in other well-known books of reference, provided that fact is adequately indicated on the label, but reference to such works will not be sufficient, as in the case of the British Pharmacopœia, to rebut the claim to a proprietary right ostensibly set up by the use of a name in the possessive case. Thus, such descriptions as "Hamilton's Pills" or "Liver Pills (Hamilton)" are held to incur liability, even though reference be made upon the label to a well-known book in which the formula is published. If, however, the formula be printed on the label, the Board will permit the use of a name in the possessive case, provided no claim to a proprietary right in the medicine is, or ever has been, made. With regard to such names as "Cough Mixture," "Antibilious Pills," "Toothache Essence," "Pile Ointment," "Corn Plasters," or "Teething Powders," they are now held to incur liability, because they imply recommendation of the medicines for the prevention, cure, or relief of ailments. On the other hand, it is not considered that the mention upon a label merely of an organ or part of the human body of itself renders a preparation liable to medicine stamp duty; hence, such names as "Liver Pills," "Blood Purifier," "Anodyne Mixture," "Female Pills," or "Stomachic Mixture" may appear upon labels, without any necessity existing for applying stamps to the packages so long as no other words are used which incur liability. The following is a fairly comprehensive list of titles which, according to the Board of Inland Revenue, do not of themselves incur liability:—

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* Read before the London Chemists' Association, on Wednesday, November 18, 1903.

Non-Dutiable Titles.

Alterative Mixture
Alterative Pills
Anodyne Mixture
Anodyne Pills
Antiseptic Throat Pastilles
Aperient Pills
Aperient Powders
Astringent Mixture
Blood and Stomach Pills
Blood Lozenges
Blood Mixture
Blood Purifier
Blood Purifying Pills
Bowel Mixture
Brain and Nerve Tonic
Brain Tonic
Breast Lotion
Brompton Mixture
Bronchial and Throat Tablets
Bronchial Balsam
Bronchial Elixir
Bronchial Glycerin Lozenges
Bronchial Lozenges
Bronchial Mixture
Bronchial Pastilles
Cardiac Tonic
Cathartic and Liver Pills
Cathartic Pills
Chelsea Pensioner
Chest and Lung Embrocation
Children's Aperient Powders
Children's Cooling Powders
Children's Powders
Cooling Powders
Dandelion and Podophyllin Liver Pills
Digestive Candy
Digestive Lozenges
Digestive Mixture
Digestive Pills
Ear Drops
Emmenagogue Pills
Eye Drops
Eye Lotion
Eye Ointment
Eye Salve
Female Mixture
Female Pills
Foot Powder
Head and Stomach Pills
Hepatic Mixture
Hepatic Pills
Infants' Mixture
Infants' Powders
Kidney Pills
Laxative Pills
Laxative Tablets
Little Liver Pills
Liver and Kidney Pills
Liver and Blood Purifying Pills
Liver Cleanser
Liver Invigorator
Liver Pills
Liver Tonic
Lung and Bronchial Tonic
Lung Balsam
Lung Tonic
Nervine Essence
Nervine Tonic
Nipple Lotion
Operating Pills
Pectoral Balsam
Pectoral Lozenges
Pectoral Lung Tonic
Pectoral Mixture
Pulmonic Elixir
Purifying Blood Pills
Purifying Stomach and Head Pills
Quinine and Iron Tonic
Skin and Blood Purifier
Skin Lotion
Skin Ointment
Skin Tablet
Soothing Syrup
Stomach Pills
Stomach and Liver Pills
Stomachic Mixture
Stomachic Pills
Tasteless Liver Pills
Throat Gargle
Throat Lozenges
Throat Mixture
Toilet Cream for Chapped Hands
Tonic Mixture
Tonic Throat Mixture
Tooth Essence
Tooth Tincture
Universal Household Embrocation
Uterine Tonic
Voice and Throat Lozenges
Voice Lozenges

Compounded medicines are rendered dutiable, however, if they are described on the labels or elsewhere by any of the following titles, unless their composition is disclosed, either by printing the names of all the active medicinal ingredients on the labels, or by publishing the formulæ in some well-known book of reference and indicating that fact upon the labels:—

Dutiable Titles.

Acne Ointment
Ague Drops (*or* Mixture)
Anæmia Mixture
Anæmia Pills
Antiapoplectic Pills
Antibilious Pills
Anticonstipation Mixture
Antineuralgic Mixture
Antispasmodic Drops
Asthma Cure
Asthma Powder
Backache and Kidney Pills
Balsamic Cough Mixture
Boil Lotion
Boil Ointment
Bowel Complaint Mixture
Bronchitis Mixture
Cancer Cure
Catarrh Cure
Chilblain Liniment
Chilblain Lotion
Chilblain Ointment
Children's Cough Mixture
Chlorosis Mixture
Cholera Mixture
Cold and Influenza Mixture
Colic Drops
Cooling and Fever Powder
Corn and Wart Solvent
Corn Paint
Corn Plasters
Corn Solvent
Cough Drops
Cough Lozenges
Cough Mixture
Cough Pills
Cough Syrup
Croup Liniment
Croup Mixture
Diarrhœa Mixture
Dropsy Cure
Dyspepsia Mixture
Dyspepsia Pills
Dyspepsia Powders
Dyspepsia Tablets
Earache Drops
Eczema Ointment
Embrocation for Sprains
Erysipelas Ointment
Fever Cure
Gleet Mixture
Gonorrhœa Injection
Gonorrhœa Mixture
Gout and Rheumatic Pills
Gout Liniment
Gout Mixture
Gout Pills
Gripe Mixture
Hayfever Snuff
Headache Mixture
Headache Powders
Healing Ointment
Indigestion and Liver Mixture
Indigestion and Stomachic Mixture
Influenza Mixture
Insomnia Powders
Itch Ointment
Jaundice Cure
Kidney and Gravel Pills
Lumbago Ointment
Measles Mixture
Migraine Powders
Neuralgia Liniment
Neuralgia Mixture
Neuralgia Powders
Obesity Cure
Pile Ointment
Pile Pills
Rheumatic and Gout Pills
Rheumatic Liniment
Rheumatic Mixture
Ringworm Ointment
Sciatica Liniment
Sciatica Pills
Scorbutic Ointment
Scurvy Ointment
Teething Powders
Tic Doloreux Mixture
Tic Mixture (*or* Pills)
Toothache Drops
Toothache Essence
Toothache Pills
Toothache Powders
Toothache Specific
Wart Paint
Water Pills
Whooping Cough Mixture
Wind and Water Pills
Wind Pills
Worm Lozenges (*or* Powders)

Concluding Remarks.

A medicine which requires to be stamped becomes dutiable directly the packet, box, bottle, phial, or other inclosure containing it is labelled and exposed for sale. Such medicines, therefore, should not be exposed in windows, show-cases, or elsewhere, until the duty stamps have been properly affixed. A licensed retailer is permitted to break open duly stamped inclosures of dutiable medicines, which have been purchased from manufacturers or wholesale dealers, and to sell the contents without paying further stamp duty, provided he only sells them loose. Whatever may be the strict law on this point, the Board of Inland Revenue at present holds that a licensed vendor is not entitled to break open stamped packets and sell the contents loose, unstamped, if he has prepared and packed the medicines himself, the reason given being that there would be no security that the stamped packets were not filled over and over again. When stamped packets are broken open and the contents retailed without being restamped, pills, powders, or lozenges should be merely wrapped in paper or put in a paper bag, without being sealed up, or gummed, or tied with string, while liquids, ointments, etc., should not be supplied except in bottles or boxes supplied by the customers who ask for the articles, the greatest care being taken to avoid rendering the medicines liable a second time by supplying them in what could be regarded as a dutiable "packet, box, bottle . . . or other inclosure." In strict law, even a paper bag or a screw of paper may be a dutiable inclosure, but the Board has granted a concession in that respect. Medicated cigarettes or preparations of herbs, intended for smoking only, are not liable to stamp duty, however recommended. Neither are asthma cures and other preparations intended to be burnt for inhalation, fumigation, or vaporisation only; but smelling salts, etc., recommended for the cure of colds, may be liable to duty. Soaps intended to be used in the ordinary way for washing purposes are not regarded as falling within the charge of duty, and they may therefore be recommended freely for any ailment, without requiring to be stamped; if, however, a soap is intended or directed to be applied as an ointment or salve, and left on the part affected, it becomes liable to duty. Toilet preparations, such as face lotions, skin pastes, and hair washes, may be freely recommended for roughness of skin, chapped hands, baldness, etc., but become liable to duty if recommended for the prevention, cure, or relief of any human ailment, unless they come within the special exemption in favour of chemists and druggists. Even a perfume may be rendered dutiable if recommended for use or application, externally or internally, as a medicine or medicament. But by taking advantage of the special exemption and exercising ordinary care, it is now possible for chemists and druggists to avoid payment of stamp duty in the case of most preparations put up and offered for sale by themselves.

BACTERIAL THERAPEUTICS.*

BY J. TAYLOR GRANT, M.D., B.SC.,

Lecturer on Bacteriology, Royal Colleges School of Medicine, Edinburgh.

I trust it is superfluous for me to assure you that I highly esteem the compliment paid me by the Pharmaceutical Society in inviting me to give the address at the opening of another session.

I have taken as the subject "Bacterial or Serum Therapeutics," and in order that you may properly understand the facts I am going to bring before you it will be necessary to refer to (1) bacteriology in general; (2) bacteria in relation to disease; and (3) the question of immunity, or the power to resist disease, especially bacterial or infectious disease.

First, then, bacteriology in general. Bacteriology deals with the lowest forms of vegetable organisms, and so it is a part of botany; but since bacteria are found causing many disease processes, bacteriology also forms a part of medicine. Medical bacteriology, however, is but a small branch of bacteriology in general. Bacteria, microbes, germs, schizomycetes, or fission fungi, are one-celled plants, without a nucleus, without chlorophyll, each consisting of a mass of protoplasm, sharply defined by a surrounding envelope, and usually colourless. They are so minute—in one direction, at all events, they do not, as a rule, measure more than 1/25,000th part of an inch—that individually they can only be properly distinguished by the highest powers of the microscope and with the best possible illumination. When massed together in enormous numbers, as in cultures, the *masses* of microbes are visible to the unaided eye.

In the absence, as yet, of a really rational classification, bacteria may be conveniently considered as divided into two great classes, the saprophytic and the parasitic.

The Saprophytes

obtain their nourishment from dead organic matter, either animal or vegetable, or from mineral and inorganic substances, and exist independently of a living host; they outweigh in number and importance the parasitic bacteria, they form the great majority of bacteria in existence, being found in soil, water, milk, air, on clothing, in dust and dirt, indeed everywhere; in man and animals, even the healthiest, the mouth and large intestine and the skin are always rich in saprophytic bacteria. We swallow countless myriads of them with our food daily. The blood and tissues of healthy men and animals, and the interior of plants, are germ-free.

The saprophytes play important parts in various industries, such as those of butter-making, brewing, vinegar and sugar manufacture, tanning; those of nitrogen-fixation and of nitrification play an indispensable part in fertilisation of the soil. But the chief function of the great majority of saprophytes in nature is to bring about the bio-chemical process called putrefaction, or the decomposition of the dead bodies of animals and plants—the effete matter of the animal and vegetable kingdom—into more simple substances. In the words of Duclaux: "Wherever there is decomposition of organic matter, whether it be a weed or an oak, a worm or a whale, the work is done by bacteria. They are the important, if not the only, agents of universal hygiene; they clear away, more quickly than the dogs of Constantinople or the wild beasts of the desert, the remains of all that has had life—they protect the living against the dead. They do more: if there are still living beings; if, during the hundreds of centuries the world has been inhabited, life continues, it is to them we owe it." Try to imagine the state of affairs had there been death of man, animal, and plant without decomposition, century after century, since living things first appeared.

That putrefaction is due to bacteria may be shown by the following experiments:—

(1) If a watery solution of, say, meat extract be boiled for half an hour—that is to say sterilised, rendered free of living bacteria—in a flask, stoppered with cotton wool, and then kept indefinitely—it may be for years—it will not putrefy, because the bacteria originally present were killed by the boiling, and no others could gain an entrance.

(2) If a flask of boiled meat extract solution be opened and thus exposed to the air, it putrefies, because of the entrance of bacteria from the air.

(3) If a stoppered flask of similar fluid be inoculated with living bacteria, it putrefies. (4) If inoculated with dead bacteria it does not putrefy. (5) If inoculated with a drop of unboiled water it putrefies because of the living bacteria introduced with the water. For the pharmacist troubled with solutions that "go wrong," these experiments are suggestive. Again, a very low temperature prevents putrefaction by preventing the life and growth of bacteria, *e.g.*, the flesh of the frozen Siberian mammoths was unchanged after numberless centuries. Putrefaction and sepsis in wounds after operations are due to bacteria, and therefore the aseptic surgeon aims at the absolute exclusion of all bacteria by only using instruments and dressings previously sterilised by heat, and by destroying the bacteria on his own hands and those on the patient's skin by means of disinfectants. As in the meat extract experiments, so in the operation wound, if bacteria be excluded there can be no putrefaction, no sepsis.

The modern biological method of purifying sewage—the so-called bacterial treatment—is nothing more than an attempt to imitate Nature's own method, to bring about putrefaction, under control, as a means of disposing of excremental matters; the living bacteria necessary to effect this being present in the sewage itself. But to do justice to the bacteriology of putrefaction and fermentation and to the products of bacterial life would take us too far out of our way to-night, suffice it to say that the actions of fermentative bacteria have much in common with the actions of those substances familiar to you as enzymes, such as pepsin and pancreatin. For example, milk can be curdled by a living fermentative organism, the lactic acid bacillus, which is always present in milk soon after it is drawn, and is the usual cause of souring, or it can be curdled by rennet (an unorganised ferment or enzyme, a lifeless chemical compound which is secreted by special glands in the stomach of certain animals). The chief difference is that the organised ferment, *i.e.*, the fermentative organism, can increase and multiply, while the enzyme cannot. The saprophytes are, as a class, harmless to man and animals, and are therefore also termed non-pathogenic, *i.e.*, they do not cause specific diseases.

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* Inaugural sessional address to the Pharmaceutical Society of Great Britain, delivered at a meeting held in Edinburgh, November 18, 1903.

The Parasitic Bacteria

are those that live and multiply on or in, and at the expense of, a living host—the living body of man or animal. They are harmful invaders of the living bodies of man or animals; they produce diseases, especially infectious diseases, such as tuberculosis, typhoid fever, diphtheria, pneumonia, cholera, plague; they are therefore called pathogenic or disease-causing bacteria.

But before one is justified in saying that a particular bacterium is the cause of a particular disease, four points must be established. They are essentials which were laid down by the distinguished German bacteriologist, Koch, and have been conceded to be sufficient to show that a given germ is the cause of the disease with which that germ is associated. Briefly, these requirements are as follow:—

(1) The bacterium must be present in all cases of the particular disease, and in no other disease—in that disease only.

(2) The bacterium must be capable of isolation from its host and of being grown on artificial media in pure culture—*i.e.*, apart from all other bacteria.

(3) The inoculation of such pure culture into a susceptible animal must reproduce the disease.

(4) The bacterium must be recoverable from this animal in which the disease has been produced and grown in pure culture.

For example, the disease known as diphtheria is said to be caused by the Klebs-Lœffler bacillus, which was discovered by Klebs and Lœffler, because all the above requirements are fulfilled—viz., the Klebs-Lœffler bacillus is always present in diphtheria, it can be isolated from its host, grown in pure culture on artificial media, inoculation with a pure culture produces diphtheria, and from the animal thus artificially diseased the bacillus is recoverable. In a similar way bacteria have been proved to be the cause of a large number of diseases such as tuberculosis, pneumonia, tetanus, plague, and so on.

There is, however, no hard and fast line between the saprophytes and the parasites, for sometimes a bacillus generally considered to be a harmless saprophyte is found producing a disease—*e.g.*, the colon bacillus, a normal and advantageous inhabitant of the intestine of man and animals, may occasionally be responsible for an attack of inflammation of the bowel, or for epidemics of food poisoning. Certain saprophytes may cause putrefaction in a wound and lead to a fatal result. On the other hand, the very fact that disease-causing bacteria, whose normal habitat is the living animal body, can be grown in lifeless artificial media, shows that they are capable of behaving like saprophytes, at all events for a time.

Classified according to their morphological distinctions—*i.e.*, their shapes and forms, a classification, it must be said, of little importance—bacteria are either spherical or they are rod-shaped. The spherical are called cocci; if they form chains they are called streptococci; if they form irregular clusters, like bunches of grapes, they are named staphylococci; if they occur in pairs, diplococci, and so on. The rod-shaped bacteria are termed bacilli. They may be straight, or curved, or spiral, and they vary much in size. Combining these provisional classifications, we thus have saprophytic and parasitic cocci, saprophytic and parasitic bacilli, etc. Most bacteria are motionless or non-motile, whilst others, by means of the lashing of long whip-like flagella, are motile. Motile bacteria, when examined in a drop of water, are seen to move across the field, sometimes darting across quickly, sometimes propelling themselves with a slow screw-like action. The flagella are filiform prolongations of the protoplasm and inner layer of the investing membrane. They may be several times the length of the microbe, and may be at one or both ends or all round, but for a given species the number of flagella is fairly constant.

The Reproduction of Bacteria

is effected by a process of fission or splitting. The bacterial cell becomes enlarged and elongated, and a septum is developed in the interior of the cell at right angles to its length. The septum then divides into two lamellæ, thus effecting the division of the one original cell into two, each of which takes on a separate existence. If the conditions be favourable, each of these cells will soon undergo a similar process of fission. The time required for the formation of one bacterial cell from another—*i.e.*, for the formation of a new generation—is termed the period of generation, and this varies with different species, state of nutrition, temperature, etc. Assuming that the period of generation of a certain bacillus is half-an-hour, and that conditions are favourable, it will increase at such a rate that in two days' time its descendants will number 281 billions. But in nature this geometrical increase does not generally take place to such an enormous extent, because the necessary food supply is not present, and many bacteria are killed by the accumulation of their own products, such as acids; also because the hardier species starve out the weaker. In infectious disease, therefore, owing to such rapid reproduction, the danger is due not so much to the few individual typhoid or diphtheria germs which have gained an entrance as to the absolutely enormous number of their descendants.

In some bacilli there appears under certain circumstances a round or ovoid refractile mass, called a spore, situated near one end or in the centre, and surrounded by a dense membrane. As there is generally only one spore produced by one bacillus, and as the bacillus dies on the escape of the spore, spore-formation can scarcely be looked on as a means of multiplication, as is sometimes done. It is rather to be considered as a means of enabling bacteria to remain alive under unfavourable conditions, to resist for months or years the injurious effects of an insufficient or unsuitable food supply, desiccation, or changes of temperature. Spore formation is indeed induced by unsuitable environment generally and by the accumulation of excretory products of the bacteria themselves; for as soon as spores are placed under favourable conditions and supplied with suitable food, they assume the bacterial or vegetative form by the dehiscence of the spore-case, and the bacteria so formed multiply in the usual way—viz., by fission.

Owing to the very resistant investing membrane, spores are more difficult to destroy by heat or chemicals than bacteria. You know that bacteria are killed by corrosive sublimate, carbolic acid, chlorine, etc., and that on this account these substances are employed as disinfectants.

Coming now to the

Conditions of Life

of bacteria we find that they, being living protoplasmic cells, are, like all other living things, dependent on certain external conditions, and that they, in the first place, need suitable food. Their natural food consists of nitrogenous and non-nitrogenous substances, and in the laboratory the nearest approach to this has been found in artificial media containing soluble albumins and proteids, sugar or glycerin, together with a preponderance of water. The chief liquid media are bouillon, glycerin-bouillon, milk, blood serum; the chief solid media are agar, glycerin-agar, gelatin, potato, solidified blood serum. There is no universal media for all organisms; some, for instance, grow well on potato and with difficulty on agar, others better in liquid than on solid media. Most bacteria refuse to grow on a medium at all acid; a very few prefer acidity.

Bacteria also need a suitable temperature, there being for every species a temperature at which it grows best, termed the optimum temperature; as also a maximum temperature above which it will not grow, and a minimum one below which it will not grow. For the organisms which produce diseases in man the optimum temperature is about 37·5° C., that is the normal temperature of the human body. Water or putrefactive bacteria grow best at a much lower temperature—viz., 20° C. Most bacteria refuse to grow below 12° C. or above 44° C. Another important condition of life is the presence or absence of oxygen. In a large number life is dependent on the oxygen of the air—these are named aërobic bacteria; those to which oxygen is poison and which can only develop when it is absent are named anaërobic.

One of the first requisites in studying the characters of a bacterium is to have it growing in pure culture, *i.e.*, apart from all other species, for when bacteria of one species are collected together in enormous numbers, as they are in pure cultures, the mass thereby formed presents appearances which are characteristic of that species, appearances which would be obscured and destroyed by the presence of another species. Indeed, the behaviour of a bacterium in pure culture in different media is often of much more value in its recognition than its appearance under the microscope. Besides in investigating a bacterium as to its disease-causing properties, a pure culture is essential, for if another bacterium be present in the culture inoculated and disease results it is impossible to say on which bacterium this result depends. Now, just as the farmer or gardener destroys the weeds before he sows the seed, in order that the crop may not be contaminated and mixed with them, so the bacteriologist, and for the same reason, before planting bacteria on any medium, destroys all alien germs which may be present in it or in the vessels containing it. This destructive process is termed sterilisation, and is accomplished, in the case of most media, by steam at or about 100° C., and in the case of dry glass apparatus by dry hot air at 150° C.

So much for a rapid survey of bacteriology in general. That I have not by any means exhausted the subject may be shown by the fact that there are investigators who devote all their time to one special branch of it, such as the bacteriology of water, or of milk and its products, or of soil, or of sewage, while others again are entirely occupied with the question of immunity.

(*To be continued.*)

Copper Citrate in Ophthalmic Practice.—F. von Arlt finds that copper citrate, which has hitherto been but little used in medicine, is preferable to the sulphate for the treatment of granular conjunctivitis. A. G. Krotov has confirmed this, having employed it in the form of a 5 or 10 per cent. powder diluted with sugar, or as an ointment with lanoline, vaseline, or glycerin of starch, in strength varying from 5 to 20 per cent. of the citrate. It has also been serviceable in the form of pencils containing 10 or 20 per cent. of copper citrate. According to the latter, copper citrate is a valuable application for many forms of eye disease, both chronic and acute; but it is contraindicated in such cases as corneal ulcers, in which silver nitrate is generally prescribed. The application causes marked smarting and lachrymation, and in some cases, as in pannus, the irritation is at first increased, so that continuous applications should not be made. In this instance three or four days may be allowed to elapse between each application, and atropine may be used in the interval.—*Bull. Comm.*, **31**, 376.

PRESENT-DAY PHARMACEUTICAL PROBLEMS.*

BY A. W. GERRARD.

It affords me great pleasure to offer a hearty greeting to the members of the Midland Pharmaceutical Association, likewise to give a warm welcome to the visitors who honour us with their presence. This Association was founded in the year 1847, in this great industrial city of Birmingham, for the purpose of enabling those of a common calling—members of the craft of pharmacy—to meet together from time to time, for the purpose of discussing scientific, social, and political matters affecting their own and the public welfare. We all have ordinary or commonplace duties to perform, duties which, without some relief, are certain to narrow and restrict our minds; hence it is we have these meetings, which afford us the privilege and opportunity of knowing each other, and working together, not only for the improvement of our art, but to encourage us to cultivate the sunnier side of life, by showing that we respect and depend upon each other for mutual help, guidance, and support. Before proceeding with my address, a sad duty rests upon me. Since our last gathering, we have lost one of our most valued members, and I am sure you wish me to pay a tribute of respect to his memory. John Barclay was for two years our President. He was an honour and good example to his calling. We recognised in him a worker who gave us of his best. It is something to say, though a manufacturer, his knowledge was not a closed door, as is testified by the useful papers he presented to this Association. His thoughtful and studious demeanour led us to hope that his would have been a long life of good work. We miss his presence, and feel it hard to lose such a friend. When the Council of this Association invited and encouraged me, in many kindly ways, to become your President, a fear arose in my mind, which is still with me, that, in accepting, I was excluding from the position a more worthy pharmacist—one who, from longer association with you, was more fully entitled to the honour than myself. The only excuse I can give for appearing before you is that I love my craft and its followers, and have, from the first moment I planted my foot in a pharmacy, taken some interest in its work and welfare. For more than forty years my life has been devoted to pharmacy, and through that time I can truly say she has given me many pleasures. She has always appeared to me as a storehouse of wonderful things and possibilities, in which a wealth of knowledge lies hidden; a storehouse, rich in the products of the animal, vegetable, and mineral kingdoms, all inviting and tempting us in many ways to search out and unfold their secrets. Pharmacy undoubtedly, in the richness of its material, affords the enthusiastic student abundant opportunities to add some contribution to the growth of knowledge. A motto which might truly be written over every well-equipped pharmacy is: "Seek and ye shall find." I do not intend to confine my address to any one special subject, as I know you are interested in many. There is, however, one side of our art which has always had for me considerable attraction—it is that of manufacture; as I wish to encourage it, this will receive the largest share of my attention.

Encouragement of Manufacture.

Often when reflecting on the present-day condition of pharmacy it has occurred to me that we are not doing justice to ourselves, especially if we take into consideration the nature of our education and the prospects our art affords. Many of us narrow pharmacy down in our practice to the dispensing and retailing of drugs and sundries. To me pharmacy is much more than this; it has a much larger meaning, and much wider applications. Galenical pharmacy, the very corner-stone of our calling, is dwindling to nothing, and our workshops are fast becoming stores, and skilled craftsmen rare. Further, we do not take up the manufacture of specialties to anything like the extent our opportunities admit. All this is brought about, no doubt, by a defect in our educational methods. There is a crying need for more practical work all round. The cleverest dispenser of physicians' prescriptions in the kingdom cannot be called a complete pharmacist unless he has worked on the processes, and used the appliances commonly employed to make the galenicals he is constantly handling, and is expected to know all about. Improvement in this direction, I fear, will never be attained whilst the amount of practical pharmacy taught in our schools is just that meagre quantity which enables the student to pass his qualifying examination. Official examination requirements in practical pharmacy are bounded and controlled by a schedule, which I know as an old examiner, and which teachers and students know, cannot be effectively put into practice by reason of limits of time and space, and poverty of appliances in the examination laboratory. It is to me a deplorable fact that the practical work usually accomplished at the Minor Examinations amounts to little more than pestle and mortar pharmacy. From answers to questions I am within the mark by stating that 70 per cent. of my examinees informed me they had never made an extract, tablet, or bougie, or distilled an aromatic water. Pressed for an explanation, they usually replied they never had the chance, and they mostly thought it did not pay. The first explanation we may regretfully accept, the second we never ought to admit; rather should we pin our faith to the skilled craftsman who follows every detail of his work, from the raw material to the finished galenical, not even allowing the outlay of a few pounds to block the purchase of appliances needed to help him do good work. Knowledge thus gained can be made a power which, combined with business energy, is sure to bring solid reward. For the credit of British pharmacy it is abundantly evident that more interest needs awakening, and a more extended education provided in the direction of manufacture, both wholesale and retail, especially the latter, which leads to the former. There are opportunities for much specialisation in our art, in the direction of placing medical or general proprietary articles, especially of a domestic character, on the market. These, if steadily pushed, might be made to occupy our time far more profitably than grumbling and waiting for trade. Many specialties, properly the work of the chemist, are made to-day by aliens—men outside our ranks, men who, by rough rule-of-thumb methods, discover some useful combination which the multitude want and buy. These persons possess the merit of pushfulness; knowing how to advertise, they soon become the fortunate owners of valuable proprietaries, sold by every chemist and grocer in the land. Here is a large loss to us, here is a leakage which we should make every effort to stop. It is you and I who ought to do the stopping. Many workers in pharmacy would likely enough be too proud to engage in the making of boot polish, ink, or preserves, believing they were, by so doing, degrading their art, but we may refer such to that valuable truth, "There is dignity in all labour." Moreover, there is as much, or more, art in making good ink as in making syrup of squills. We know that the former helped one of our craft to a seat in the House of Commons, but cannot say the same of the latter.

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* Inaugural address to the Midland Pharmaceutical Association, delivered at Birmingham, November 13, 1903.

Under our present half-starved educational conditions it is not surprising that real manufacturing pharmacy, which means real trade, is slipping from us, passing into the hands of unqualified outsiders, or is being driven across the sea, where we also send our earnings to purchase the foreign-made stuff. Here are some figures from the *Pharmaceutical Journal*, October 24 last, given by R. A. Robinson, jun., which support my statement. They indicate the trend of the imports of manufactured drugs from the United States to ourselves over a period of twelve years.

1890.	1891.	1902.
£128,194	£137,646	£241,275

This shows plainly that America's trade in our goods has grown immensely. Mr. Robinson further states that our return trade has grown but little. Well may the Prince of Wales say "Wake up, England!" Well may I paraphrase this and say "Wake up, pharmacists!" "Wake up, technical education!"

The English pharmacist to-day has little or no opportunities of obtaining advanced or specialised education in his art; hence it is we are many years behind the times. Had it been made possible for us to keep pace with other nations, it is likely we should now be producing many of the chemicals and galenicals imported from abroad. It is not merely our pockets that suffer from this educational defect, but worse still, our intelligence; so it is high time that not only those who profess to lead us, but we ourselves, were awake to the importance of this subject, which is not only vital to us as craftsmen, but part of our national welfare. Where in this country are the schools or teachers to be found who can or will train our young men as experts in the manufacture of alkaloids, glucosides, and the many new products of synthetic and biochemistry? The answer is they are nowhere, and John Bull, Pharmacist, has done nothing to provide this training or stimulate its provision.

Mr. Thomas Tyrer, in the *Pharmaceutical Journal* of October 17, 1893, p. 550, made some cogent remarks bearing on technical education which may be read with advantage. In a paragraph on the differentiation of manufactures he deplores the nation's want of organisation and unpreparedness with respect to industrial methods. He says: "Are our experts, our young chemists, our labourers equal to the task? In some cases emphatically yes; in others, too numerous, emphatically no! Heads without eyes and ears, bodies without hands or feet, are odd fighting machines." With all this I most cordially agree, for is it not the same in pharmacy, is it not the same set of organs, with the addition of the nose and the palate of our youth, that needs educating? Above all must they be educated in workshops perfectly equipped with the most modern machines which technically belong to our art. If pharmacy is to remain a reality and not a mere name, its manufacturing side must be encouraged and fostered, or that little which remains with us to-day will pass out of our hands. It is with regret I have to say, again, there is not a school of pharmacy in the United Kingdom possessing the material to give such an education, there is nothing in our schools—not even that of Bloomsbury Square—that is equal to the need. Under such conditions, how can skill be gained, knowledge grow, or trade flourish? It may surprise some of you to hear that many of the large hospitals of London and the provinces—and, remember, these are medical institutions—are better equipped in every respect for the teaching of practical pharmacy than any schools I know. The material at the command of these hospitals, the large number of prescriptions daily dispensed, and their splendidly furnished laboratories prove all I say. Further, those who control the pharmaceutical departments of these institutions are some of the best men sent out from our schools. There is no side of pharmacy which has made more steady advance for the past twenty-five years than that of hospital pharmacy. And that it means to advance is evident by the fact that public dispensers have formed themselves into an association, with a policy which recognises only the legally qualified person for membership. If wisely directed, they have great power for good. My sympathies are with them. A visit to the London, St. Bartholomew's, St. Thomas's, Guy's, and many other metropolitan hospitals would be an impressive object lesson to most chemists on the progress of pharmacy in institutions. May we not trust and hope that the day is not far distant when the Pharmaceutical Society will take the lead as it should in this important matter, and see its way to the installation of a typical pharmaceutical plant or laboratory, such a one as would encourage and stimulate its students to take up more practical or even special work. A six or twelve months' course in a good workshop, under expert teachers, should turn out a class of man which to-day is much sought after but difficult to find. Not very long ago this matter was brought before the Pharmaceutical Society by one of its Councillors—Mr. Charles Symes—but his suggestions undeservedly met with the cold shoulder. Perhaps it needs a little outside pressure to help it forward, and that is why I have spoken to-night, and ask your support for my views. All of you, it is certain, are anxious to advance our art, and no doubt we all agree there is no better or surer way than by the agency of a thorough good education—an education comprising a large share of practical work and less of costly lecturing. The teaching should be done by teachers who devote their whole time to their duties. Under such conditions we may be confident that British pharmacy would then have a better chance to hold its own and prove itself equal to that of any civilised nation.

The Pharmacy Bill.

Chemists and druggists have every reason to be gratified with the evidence of renewed activity on behalf of the above Bill. It is a Bill of just claims, asking only for that which our education and qualifications entitle us to. This measure was introduced into Parliament last year, but never got to the second reading stage. The Bill is now to be re-introduced, and I venture, therefore, to say a few words about it. Though it has recently been stated by an anonymous writer, who is understood to be a member of the Council of the Pharmaceutical Society, that the Pharmacy Bill is aimed directly and solely at limited companies practising pharmacy, I am disposed to think that such is not the case. Certainly such limited companies are affected by the Bill, since is stipulates (1) that their affairs shall be managed by duly qualified chemists as directors, and (2) that certain things which, under the Pharmacy Acts, are illegal if done by individuals, shall also be considered illegal if done by limited companies or other corporate bodies. But this is simple justice and sound common sense. Why should a joint-stock company be allowed to do what an individual may not do in the matter of assuming titles which are supposed to be protected by Statute? And why, on the other hand, should an individual be compelled to undergo a prolonged course of training and pass a severe examination before he is permitted to do what some other untrained and unexamined individuals may do, after simply forming themselves into a limited company? The reason why such anomalies prevail is, of course, that the law is defective. But there is no reason why even legal anomalies should be allowed to exist perennially, and Clauses 7 and 11 of the Pharmacy Bill must be regarded as representing an honest attempt to protect the public interests by placing limited companies upon the same footing as individuals, certain acts or omissions being regarded as offences under the Pharmacy Acts, whether the culprits are natural or legal persons. Many in our own ranks are of opinion that the promoters of the Bill have not gone far enough, while the shareholders in drug companies naturally enough think that they have gone too far. It appears safe to assume, therefore, that the Bill represents a medium course which offers a fair basis for compromise. The fact must not be overlooked that, besides proposing to impose certain statutory obligations upon limited companies, the Bill is intended to further regulate the practice of pharmacy by individuals. Thus it provides that every branch shop where poisons are sold shall be actually managed by a duly-qualified person, and that registers shall be kept (1) of shops where poisons are sold, and (2) of all persons managing such shops. Provision is also made for preventing the hawking of poisons, for restricting the compounding of prescriptions to duly-qualified persons, and for enabling the Council of the Pharmaceutical Society to take steps to systematise the training of candidates for registration as chemists and druggists. The seeking of power to provide a good and sufficient compulsory training by means of a curriculum is a portion of the Bill that many of us must have long felt to be a necessity. A curriculum wisely arranged is calculated to immensely raise our status, especially if it could be undertaken at the Universities side by side with the students of other professions. May we not hope for and encourage its early accomplishment? In view of the fact that there is such a large commercial side to pharmacy, some provision should be made in any projected curriculum for teaching applied commerce. It is a side of our work on which many of us, if weighed, would be found wanting. You will have seen, therefore, individuals are affected by the Bill quite as much as limited companies, and there is good reason for supposing that great benefit would accrue, both to the craft and to the public, even if Clauses 7 and 11 had to be modified for the sake of securing acceptance of the remaining clauses of the Bill. One point, however, should be insisted upon in any case, and that is the necessity of restricting to individuals the right to use titles which they can only gain by personal effort. It is a glaring injustice that such a restriction cannot be maintained at present, and the sooner that injustice is remedied the better will it be for the public as well as for the profession of pharmacy.

The Medicine Stamp Act.

Turning now to a subject which is probably receiving the greatest share of attention in pharmaceutical circles at the present time, I will refer briefly to the change in practice which has recently been announced by the Board of Inland Revenue. Henceforth, it appears, a chemist and druggist may not describe his cough mixture, toothache essence, etc., by their obvious designations, unless he pays stamp duty thereon, or discloses the composition of the medicines. He may make the disclosure in one of two ways, either naming all the active medicinal ingredients of the medicine upon the label or making the preparation in accordance with a published formula and stating that fact upon the label. The first-mentioned plan commends itself as the one which best accords with professional ideas, but it has the disadvantage of disclosing the composition of the medicine to the purchaser. The other alternative is, therefore, being resorted to by a very large number of chemists and druggists, especially since the Board of Inland Revenue has intimated that absolute identification of formulæ will not be insisted upon. For this and other concessions—extremely valuable ones—the trade is indebted to the persistent manner in which the Editor of the *Pharmaceutical Journal* has attacked the problem which presented itself when it became necessary to decide what constitutes an adequate disclosure of the composition of a cough mixture or an antibilious pill. Thanks to his efforts, the Board of Inland Revenue has recognised the difficulty with which the chemist and druggist found himself confronted—of either telling his customers what it is not good for them to know, or revealing his trade secrets to all his business competitors. As matters now stand, the chemist is relieved from the necessity of making a choice of those two evils, the situation being saved by the simple expedient of regarding a reference to the book in which a formula is published as an adequate disclosure for revenue purposes. Nor is the chemist and druggist restricted unduly in his choice of a book of reference. He may quote the British Pharmacopœia, the 'Pharmaceutical Journal Formulary,' now in course of publication, the 'Chemist and Druggist's Diary,' the classic works of Squire and Martindale, hospital pharmacopœias, and various other well-known publications. To sum up the position, the effect of the change in practice announced by the Board of Inland Revenue, as now modified, is to leave chemists and druggists in much the same position as they occupied previously, the temporary inconvenience caused by the agitation of the past few months being amply compensated for by the privilege of recommending "known, admitted, and approved" remedies, without paying stamp duty thereon, being restricted to duly qualified persons. Provided he is careful not to claim that he possesses some secret for preparing his medicine, or that it is prepared only by him, or that it is a specific or a proprietary preparation, the chemist who can show that the medicine is compounded of drugs or chemicals as to which there is no secret, is privileged, whilst selling it unstamped, to hold out or recommend it freely for the prevention, cure, or relief of any distemper, malady, ailment, disorder, or complaint incident to or in any wise affecting the human body. Great care must be taken to avoid rendering the medicine liable in ways that are not covered by the special exemption in favour of chemists and druggists, but the benefits conferred by the chemist's privilege will repay any trouble in that direction.

The Report of the Poisons Committee.

One of the most stirring events of the year has been the report of the Departmental Committee appointed to consider Schedule A of the Pharmacy Act. This report was issued, as you know, in February last. Its recommendations came as a thunderbolt among us. If we study the inception and constitution of that Committee we may with good reason come to the conclusion that it was manipulated by certain persons interested in the unrestricted sale of poisons, rather than for any consideration for the public welfare or convenience. Mr. Alexander Cross, a member of the Committee, is understood to be interested in a limited company which has been prosecuted and fined for the sale of poisons; he can, therefore, scarcely be considered an unprejudiced person. If justices of the peace who are interested in the drink traffic are expected to retire from the Bench when licensing matters are being considered, it is equally reasonable to expect that interested persons should stand aside from a poisons inquiry committee, or at least ought only to be examined as witnesses. But Mr. Alexander Cross issued a report supplementary to that of the Committee, in which he clearly displays a bias against the Pharmaceutical Society. The insinuation which runs throughout his report is to the effect that chemists and druggists form a close corporation, which enables them to put restriction on trade, restrictions resulting in high profits to themselves and increased cost to the public.

Those who carefully read the evidence given before the Committee will find there is no ground whatever for this complaint; in fact, everything said in this direction could have been easily refuted. We know sadly enough that competition is too keen amongst ourselves to admit of high profits. Mr. Cross, in his anxiety for the public welfare, further makes the astounding suggestion that country medical practitioners should be exempt from the operations of the Pharmacy Act in respect to the sale of poisons. He wishes them, I imagine, to be allowed to keep unqualified assistants to sell and distribute poisons as they please. It can scarcely be conceived that such a recommendation could come from any careful, thoughtful man who had made honest inquiry into the possible results of the adoption of such a practice. Mr. Cross is a member of Parliament, and the public welfare should be his first consideration, hence the poisoning of country folk should be no more encouraged than the poisoning of town folk. One would like to have the views of the General Medical Council on the unrestricted sale of poisons by unqualified assistants. We may safely conclude such a practice would never obtain their approval.

Among the witnesses who appeared before the Committee was the Secretary to the Scottish Chamber of Agriculture. He thought it was contrary to common sense to suppose that an ironmonger who dealt in poisons was any more likely to injure the public than a chemist. It is not difficult to answer this assumption, for, apart from the usual neglect to label the packet and register the sale, dealers who are not chemists do greatly increase the public risk of danger. The ironmonger or horticulturist is quite ignorant of the antidote to poisons or the methods employed for their administration, whereas the chemist has always the remedy at hand, and all the information needed to treat a case of emergency. The chemist has no desire to sell pitchforks, then why does the ironmonger want to sell poisons?

Before leaving this subject I am sure this meeting would like me, on its behalf, to thank Mr. W. Hills for his able Minority Report and championship of our cause. Should a Government measure ever appear as a result of the recommendation of the above Committee, I trust it may find us united to a man in opposing it. We should even go further, and ask the public to help us restrict in every reasonable way the easy distribution of potent poisons so frequently used for suicidal and criminal purposes.

The concluding part of my mission to-night is to ask for a stronger union amongst ourselves, whenever the advancement of our calling or the protection of our rights demand it. I appeal to every chemist and druggist to join us and share with us the privilege of trying to do a little good. There are many who do not belong to any of our societies. Still they can help us, and we are glad of their help. It used to be common for those outside to say we did nothing for them. That was neither true nor just, for we helped them in a hundred ways, and shall continue to do so. Happily, there is less to-day of self-depreciatory grumbling and a growing sense of self-respect, but we want all to come into the fold and strengthen us in showing that we have enthusiasm for our art, and are determined to carry on and perpetuate those high traditions and principles for which so many of our distinguished predecessors have fought and struggled in the past.

Hirudin. — Hayashi has isolated the blood-coagulating principle of leeches, and F. Franz has introduced it as a styptic and anti-hæmorrhagic for use in gynæcological practice under the name of hirudin. The heads and upper segments of leeches are removed, extracted with distilled water, the watery solution dialysed, the globulins which then separate removed by centrifugation, and the clear liquid coagulated by heating to 82° C. The coagulum is then removed by centrifugating, the clear liquid treated with acetic acid to precipitate the mucin, again centrifugated, and the liquid thus freed from mucin neutralised, dialysed, and dried *in vacuo*. The hirudin thus obtained is a peptone like albumose; it forms brownish dry scales or masses which are very soluble in water, but insoluble in alcohol and in ether.—*Archiv. für exper. Path. u. Pharm.*, through *Pharm. Zeit.*, **48**, 474.

PARIS SKETCHES.

(2) THE POISON-SELLER.

To purchase a poison in France one must not go to the chemist's shop; that is to say, unless the would-be purchaser has a prescription. Of course, there are a large number of chemists who do sell such substances; but each of these transactions means a breach of the law. M. Astier, the chemist M.P., had explained this to a Journal representative, who resolved to find out for himself whether the law and the custom were one and the same thing.

The pharmacy chosen for the experiment was in a middle-class quarter of Paris, and the appearance of the establishment, at all events, suggested that here if anywhere, the law would be observed.

There was nothing in the two windows except a couple of specie bottles and a few glass jars containing crude drugs. The inside resembled a very neatly-arranged and well-furnished dispensary rather than the English conception of a chemist's shop. On the right as one entered sat the *caissière*—possibly the chemist's wife—on the left was a plain mahogany counter, unornamented with any bottles or specialties of any kind; whilst at the end of the counter, and standing in a sort of recess, was a roll-top desk, behind which sat the pharmacien.

In the glass cases which stood up against the walls was a selection of proprietaries, which article the doctor in France is so fond of prescribing, and a few invalids' requisites, but there were no signs of soaps nor of perfumes, nor of any of the hundred-and-one little side lines which in England the chemist has been in most cases compelled to adopt in order to make up for the lack of income caused by the doctor dispensing his own medicines. No photographic goods were visible, and there was not a tooth-brush in the place. Over an open doorway which led into a little back room, in which one could catch glimpses of test tubes, flasks, burettes, and other apparatus, was the simple word "Analyses."

There was a customer in the pharmacy, and with doffed hat he addressed the bewhiskered *élève*, in a most respectful manner, as "Monsieur le pharmacien."

The proprietor was busy writing, and was not aware that another customer was waiting, until Madame from behind the *caisse* called out, "Il y a quelqu'un." At this the chemist left his seat, came forward, and asked what the customer desired. In the face of the highly professional look of the chemist, the respectful manner in which the other customer addressed the assistant, and Madame with her Parisienne coiffure, he was ashamed to ask for the two sous' worth of oxalic acid he had originally intended, but requested fifty centimes' worth.

"*Ah! non, Monsieur*, I cannot give you that," was the reply, accompanied by the usual rise of the shoulders.

"But," returned the customer, "this is a chemist's shop."

"That is just the reason why I cannot give it you. If I were a grocer or a 'marchand de couleurs,' I would give it readily; but as a chemist I cannot."

"But I will sign the poison book if you like."

The chemist, however, did not understand what a poison book was. Such a thing, it appears, is unknown in France, or, rather, the prescription book is the only poison book.

"If you bring a prescription," explained this law-abiding citizen, "of course I can give it you, but as a matter of fact I cannot legally sell anything without a prescription."

"What, not even an ounce of chlorate of potash?" queried the persistent customer.

"Nothing at all; that is to say, no drugs or chemicals."

"But, surely that law is never applied; you are not likely to be prosecuted?"

"I never run the risk. Only recently a chemist in the provinces was fined for selling quite a simple drug—iodide of potassium—without a prescription."

"But what about proprietary medicines containing poison?"

"Ah, that is different; at any rate, the custom is different. Recognised proprietary medicines are sold without a prescription, even when they contain a poison. For instance, there is a strong preparation of corrosive sublimate which enjoys a very large sale, and there is a proprietary medicine containing chloral which is very popular and a number of others, but that in no way affects medicines other proprietaries."

"But, then, you say that if you were a grocer you could sell these things; surely that is a funny state of affairs, in England it is the other way about."

"The reason is this," continued the pharmacien, who was as lavish with his information as he was careful of his poisons. "The Act specifies that chemists must sell nothing without a prescription, but it does not prohibit grocers from doing this. When the Act was passed no one ever dreamt that anyone but the chemist would wish to sell such things, and accordingly the law only speaks of chemists. And in France everything is permitted that is not prohibited, therefore, the grocer sells poisons."

All the time this conversation was going on, Madame behind the *caisse* was growing more impatient every minute; her husband was wasting too much time over this person who spoke French so funnily and, it was clear, was not going to buy anything; and so having thanked the pharmacien for the information the *P. J.* purchaser took his leave and went in search of a real poison seller.

The "marchand de couleurs" has shops all over the place. Anyone can be a "marchand de couleurs," and in France, so it appears, anyone can sell poisons—except the chemist. One of these establishments was soon found; in fact, there was one within a few doors of the pharmacy.

In the window were all sorts of things—brushes, brooms, groceries, crude chemicals, purses, india-rubber goods, all sorts of things; and the display rested on a thick carpet of crystal boric acid. In the shop was the same assortment of everything, and a strong odour of paraffin oil pervaded the whole. It was only a small shop, a very small shop, and all the available space behind the counter was taken up with the *personnel*—this is how they speak of the employees in France—of the establishment. These for the most part wore long smocks, and their whiskers have a less luxurious appearance than those cultivated by the pharmacien.

One of these came forward and asked what Monsieur desired.

"Can I have some oxalic acid?"

"Certainly; how much does Monsieur desire?"

This time the customer had no compunction in asking for two sous' worth only of the article.

No questions were asked, some oxalic acid was scooped from a drawer, shot into a little bag, and handed over without a label, without a piece of string, and without a word of warning.

The purchaser was somewhat alarmed at this, and, to see how careless the shopman would be, he asked:

"How much for a dose?"

"Oh, it is not to be taken; it will burn your stomach, volunteered the poison seller—but he showed no desire to secure the article from such an irresponsible person.

And as the customer went out he overheard the salesman explain to his companion what seemed to him a huge joke: "Voila un Anglais qui va boire de l'acide oxalique pour faire passer la cholique."

PERSONAL VIEWS ON CURRENT TOPICS.

(2) The Practical Portion of the Minor Examination.

BY W. LYON.

Is the Object Attained?

It has already been indicated (*ante*, 533) that if the Minor Examination is to be a real test of a person's fitness for the public practice of pharmacy, it must ensure a thorough practical knowledge of the Pharmacopœia. Now, let us consider how far the examination, as at present constituted, goes towards accomplishing this, and since a practical knowledge of pharmacy, etc., can never be satisfactorily estimated by oral examination, only the practical or first day's portion of the examination will be considered as having any bearing upon the question at issue. Taking the dispensing and practical pharmacy paper first, of the five items it is usually made up of, three may, in the majority of cases, be classed as dispensing, the other two being supposed to represent the practical pharmacy section.

Where it is Deficient.

Now, an hour's work on two pharmacopœial preparations as a test of a person's knowledge of practical pharmacy is so obviously inadequate that it is unnecessary to argue that it fails in its object. To show, however, how far the practical pharmacy examination falls short of being a real test, it may be mentioned that rarely or never is the candidate *practically* examined in any of the following processes,* all of which must be considered essential to a thorough practical knowledge of the Pharmacopœia:—The official standardisation processes, and the application of these to the preparation of galenicals; the specific gravities and extractive percentages of tinctures, liquid extracts, etc.; the official distillation processes, such as the waters, spirit of nitrous ether, diluted hydrobromic acid, etc.; the examination and purity estimation of crude drugs, such as scammony, colocynth, rhubarb, beeswax, etc. In addition to these, it may be mentioned that many of the official galenicals cannot be given, because they would occupy more time than is available. This difficulty is sometimes, partially, but not satisfactorily, got over by giving the candidate part of a process to do.

Pharmacists and not Analysts.

Then, with regard to the practical chemistry examination, it is usually limited to an analysis of one salt, or a mixture of two salts, a "roundabout" volumetric estimation, and a specific gravity determination. With only three hours for work, it is impossible to cover much ground, but it does not seem beyond the bounds of practicability to make the examination have a little more bearing upon pharmacy without in any way lowering the standard. No doubt the present somewhat stereotyped routine is partly due to the fact that three-fourths of the examiners in this subject are not pharmacists, but teachers of the pure science, and therefore not interested in the particular applications of chemistry to pharmacy. Another factor may be a strict adherence to the examination syllabus. Gravimetric estimation, the testing of chemicals and preparations of chemicals used in pharmacy for impurities, the detection of alkaloids and glucosides, and the determination of boiling and melting points, are of great importance to the practising pharmacist; yet all of these are practically ignored in the examination. Whilst analysis of salts must necessarily be the groundwork of the practical chemistry examination, it ought to be remembered that those who present themselves for examination are not to be public analysts, teachers of chemistry, or investigators in the higher realms of the science, but workers in that particular department of applied chemistry which partially constitutes pharmacy. This being so, their training in chemistry and the necessary examination ought to be directed towards qualifying them for this position.

Theoretical *versus* Practical Knowledge.

Of course, it may be argued, with some show of reason, that provided the student be capable of correctly analysing a mixture of salts he will experience no difficulty in determining the presence and percentage of ferrous sulphate in a pill, or calcium hypophosphite in a syrup; that if he can repeat from memory the process for the standardisation of tincture of opium and give the "why and wherefore" of the various stages of the same he will make any quantity of it with facility; that if he can rattle off the process for the preparation of solution of ferric acetate, or spirit of nitrous ether he will set about the preparation of these, when occasion requires it, with the ease which cometh of understanding. Of the few who are endowed with exceptional manipulative capacity this may be true, but the great majority of students will only become capable at such work after a course of practical training. If a student be compelled to make himself practically conversant with pharmaceutical processes and analytical methods, especially applicable to pharmaceutical products before presenting himself for examination, he is, after becoming a qualified pharmacist, much more likely to utilise those processes and methods in his everyday work than if his knowledge of them were merely theoretical.

Some Considerations.

Though the Council has not yet obtained the necessary powers to enforce a curriculum of training, there can be no doubt that since the two days' examination was instituted the great majority of students have undergone a six months' course of tuition in a school of pharmacy previous to presenting themselves for examination. Now, if they do so at present, it is not likely there would be any insurmountable difficulty raised were the Council to require of them a more extensive practical knowledge. In spite of all the outcry about the increased stringency of the examinations having made it impossible to get apprentices, there has been no great decrease in the number of students presenting themselves for the Minor Examination. The increased standard of proficiency which is advocated will not greatly increase the expenses of training, and it will give the student, when he starts the public practice of pharmacy, a much better chance of successfully competing with the pharmaceutically illiterate owners of the stores.

More Time and Better Conditions Required.

A change in the style of the practical examination would necessitate a whole day being given to practical pharmacy and dispensing, and a similar period to practical chemistry. This extension of time is, however, to be advocated on other grounds than those mentioned. The large percentage of failures in the practical portion of the examination is generally attributed to imperfect training. No doubt this is true of the greater portion, but scarcely a practical examination day passes without one or more really capable candidates "coming to grief." The customary explanation of this circumstance is that the candidates lost control of themselves through nervousness, and thereby made serious mistakes in their work. Before accepting this explanation as correct, it will be advisable to consider whether the circumstances under which the examinations are carried out are in any way contributory to these unfortunate occurrences. I use the word unfortunate intentionally, because much ill-feeling against the Pharmaceutical Society is sometimes engendered by these, and, for the sake of all concerned, it is of the utmost importance, if there be contributory causes in the circumstances of the examination, that the Council take the matter into its serious consideration, and devise means for removing them. If he has been accustomed to the conveniences and accommodation of a well-appointed pharmacy, a student of nervous temperament must feel the limited space allotted to him in the examination room rather irksome, and therefore detrimental to good work. "Cramped, cabined and confined" into some thirty-six inches of counter, with a paper comprising a mixture containing an infusion, two dozen of pills, a belladonna plaster, four ounces of syrup of iodide of iron, and an official ointment, to finish in three hours, with most things to search for and not always to be found, with the liability to have his infusion or his syrup knocked over and spilt by a neighbour endeavouring to find sufficient space whereon to lay a pill machine, it is not to be expected that under such circumstances the candidate would be seen in his best form. By the time he is beginning to feel somewhat at ease, and therefore able to do himself justice, he finds the allotted period exhausted, without having completed his paper, and an hour later finds himself, in the chemical laboratory, undergoing a somewhat similar experience. On the occasion of the opening meeting of last winter's session, the examination rooms in Edinburgh were thrown open for inspection, and I then had an opportunity of forming an idea of the actual conditions under which a candidate has to work. I endeavoured to imagine myself in the position of a candidate with a paper such as the above, and came to the conclusion that there is cause for some of the complaints regarding the conditions under which the candidate has to work. With a whole day's work upon which to be judged, and under better conditions, the nervous candidate—and there are many of these—would be able to show what he really could do. Moreover, the examiners would be in a better position to judge the candidate's actual abilities.

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* Whether these be or be not mentioned in the examination syllabus is immaterial to the argument.

An Inquiry Committee Wanted.

In conclusion, it will be quite pertinent to urge upon the Council the advisability of appointing a small committee of its members to report upon the whole question of the Minor Examination; to visit the rooms whilst the practical portion is being carried through, and see for themselves the actual conditions under which the candidates do their work; to make inquiries of the examiners, and also of the candidates, as to the suitability of the arrangements; and to consider as to the to practical work.

Oily Solution of Lethicin.

Ostruc and Courtial recommend the use of either olive oil, oil of sweet almonds, or vaseline oil for the preparation of hypodermic injection of lethicin. With vaseline oil a 10 per cent. solution may be obtained, which remains permanently clear, but with olive oil and sweet almond oil a 5 per cent. solution becomes turbid on standing. If, however, these oils be first washed with alcohol and then sterilised at 110°-115° C., the 5 per cent. solutions will remain clear for several days. If, however, the proportion of lethicin be increased the clear solutions become turbid on cooling. Consequently only alcohol-washed and sterilised almond and olive oils should be used to prepare 5 per cent. solutions, and vaseline oil for stronger preparations. In all cases vaseline oil preparations keep better than those prepared with the vegetable oils.—*Bull. des Sciences Pharm.*, through *Répertoire* [3], **15**, 396.

THE STUDENTS' COLUMNS.

MATERIA MEDICA.—3.

Bay Leaves.

After examining cherry laurel leaves, as directed in the last paper on materia medica, the student should obtain some bay leaves and treat them in the same way, recording the results of his examination as before. These will be briefly as follow:—

Size.—About 8 Cm. long, and 3 Cm. wide.

Outline.—Lanceolate, tapering towards both base and apex. The margin is wavy, but there are no teeth or indentations of any kind (the margin is entire).

Venation.—On the under surface about six lateral veins are visible on either side of the midrib, leaving it at an angle of about 45°, and curving round towards the apex.

Petiole.—The petiole is short.

Hairs.—Both surfaces of the leaf are quite glabrous.

Oil-cells.—Crush the leaf, and note the aromatic odour that is exhaled. This is due to volatile oil contained in special oil-cells, situated in the substance of the blade. They are not easy to discern, as they are very small, and the leaf is rather thick; search for them by holding the leaf against a strong light and examining the surface with a lens; they will appear as minute pellucil dots.

Texture.—Leathery.

Colour.—Shining green above, paler below.

Taste.—Aromatic and bitter.

Make an outline sketch of the under surface of the leaf, and insert in it the lateral veins.

Bay leaves (true laurel leaves) contain a little (1 to 3 per cent.) of volatile oil, to which they owe their aromatic odour and taste, but the bitter taste is due to a bitter principle which has not yet been isolated; the fruits (bay berries) are also bitter. Note also that this oil is not the oil of bay that is used in making bay rum; the latter oil is obtained from a West Indian shrub, *Pimenta acris*, belonging to the order Myrtaceæ, whilst the true bay is *Laurus nobilis* (N.O. Laurineæ).

Jaborandi Leaves.

Genuine jaborandi leaves are often difficult to obtain, as the supply is small and irregular; should any student be unable to procure some, he should apply to the Editor, who will be glad to provide specimens as far as he is able. The same course should be pursued as has been adopted with the other leaves, but it will be unnecessary now to do more than direct attention to the principal points.

Observe that the apex of the leaf is notched (emarginate), and that at the base the blade is prolonged a little further on one side than it is on the other (unequal at the base); the latter character is exhibited by about five leaves out of six. Hold the leaf up to the light and examine it with a lens; the scattered pellucid dots are oil glands, which, being much larger than the oil-cells of bay leaves, are easily seen. Observe the brownish-green colour, the almost entire absence of hairs, and the prominence of the veinlets on the upper surface.

The leaves are obtained from a Brazilian shrub *(Pilocarpus jaborandi)*, belonging to the order Rutaceæ, and are exported chiefly from Pernambuco, whence this variety of jaborandi is often termed "Pernambuco jaborandi." The plant produces large compound leaves like those of the ash or walnut, and the commercial "leaves" are therefore, strictly speaking, "leaflets."

The principal constituents of the leaves are the alkaloids pilocarpine, isopilocarpine and pilocarpidine. Of these pilocarpine is the most important and present in largest quantity, although rarely over 0·5 per cent.; to this alkaloid the sudorific and sialogogue properties of the drug are due.

The name jaborandi is applied in South America to the leaves of several shrubs, most of which belong to the genus *Pilocarpus*, but only three are known to contain appreciable quantities of pilocarpine. As the genuine leaves are often scarce, substitutes are not uncommon; the description of the true leaves must therefore be as precise as possible, in order that all substitutes may be excluded. The most important specific characters in this case are the brownish-green colour, the prominence of the veinlets on the upper surface, and the comparative absence of hairs; such characters are called "diagnostic."

The student should write a description of a jaborandi leaf, and compare it with that in the British Pharmacopœia or text-book.

Buchu Leaves.

Several kinds of buchu leaves are imported, but only the variety known as "round" or "short buchu" is official; to this variety, therefore, the student must direct particular attention.

Notice the small size and very remarkable, trapezoidal outline of the leaf. The tip is bent backwards (recurved), and the apex is blunt. Examine the margin carefully with the lens, and note the small sharp teeth (denticulate; compare the meanings of dentate, serrate, and crenate in the text-book of botany); at the base of each indentation, and at the apex of the leaf, there is a large oil gland, and similar glands are scattered in the blade, in which they cause small prominences on the upper surface. Commercial leaves are often yellowish-green in colour, but when quite fresh they are bright green. They are obtained from a small shrubby plant, *Barosma betulina* (N.O. Rutaceæ), in Cape Colony, and are exported from Cape Town.

The characteristic aroma of the leaves is due to a volatile oil, of which they contain about 1·5 per cent. This oil deposits, on standing, a crystalline body, buchu camphor or diosphenol, to which part at least of the medicinal activity of the leaves is to be ascribed. They also contain mucilage, a yellow crystalline substance, hesperidin, and a bitter crystalline substance, diosmin. *Barosma betulina* was formerly placed in the genus *Diosma*, whence the name *diosmin, diosphenol, infusum diosmæ* (for infusion of buchu).

The student should compare with these leaves the varieties known as "long" buchu and "crenate" buchu, both of which are collected in Cape Colony, the former from *Barosma serratifolia*, the latter from *Barosma crenulata*. They both contain volatile oil, mucilage, hesperidin, and diosmin, but whereas the volatile oil from crenate buchu, like that from short buchu, contains diosphenol, the oil from long buchu contains none. Since the diosphenol contributes materially to the medicinal activity of the drug, it is quite evident that long buchu must be inferior in this respect to both short and crenate buchu, and should, on that account, be excluded from official recognition, whilst of the latter two varieties short buchu is imported in much larger quantities than crenate, and has therefore been selected for introduction into the Pharmacopœia.

Literature.—Greenish's 'Materia Medica'; 'British Pharmacopœia'; the descriptions of the drugs dealt with.

THE P.J. STUDENTS' COMPETITION.

An examination paper, based on the articles which have been published in the Students' Columns during the past twelve weeks, will appear in the next issue of the *Pharmaceutical Journal*, and it is hoped that a large number of apprentices or students will endeavour to win one or other of the prizes which will be offered for the best sets of answers to the questions set.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

EVENING MEETING IN EDINBURGH.

Wednesday, November 18, 1903, in the Society's house, 36, York Place, Edinburgh, Mr. D. B. Dott, F.I.C., F.R.S.E., in the chair. There was a large attendance.

The minutes of last meeting were read and approved, apologies for absence being intimated from Professor Stockman, and Messrs. W. L. Currie, T. Dunlop, A. Davidson, J. P. Gilmour, and J. Robertson.

The Chairman said Dr. Taylor Grant hardly required any introduction, as he was, in a sense, one of themselves, having begun in pharmacy and passed into the ranks of medicine.

Dr. Taylor Grant then proceeded to deliver the inaugural sessional address on

Bacterial Therapeutics,

the first part of which is printed at page 739 *et seq.* The address was very fully illustrated by an interesting collection of cultures and microscopic specimens, which were exhibited in the Museum, and also by a series of lantern slides thrown on the screen during the lecture.

Mr. J. Laidlaw Ewing, J.P., in proposing a vote of thanks to Dr. Grant, said they had inaugural addresses on chemistry, botany, materia medica, and other subjects, but to-night they had had a lecture on a subject of surpassing interest, not so much connected with their profession as those mentioned. They owed a deep debt of gratitude to Dr. Grant for his exhaustive lecture on the science of bacteriology. He would also, in their name, thank him for those pictures which he had thrown upon the screen, and had produced a feeling of interest not unmixed with awe. He felt that some silent prayers had gone up that they might be spared from those terrible germs. They were all learners and not critics, excepting, perhaps, such scientific persons as their Chairman. They must all have been convinced of the great influence that bacteriology had had on medicine and surgery, and how it had almost revolutionised the treatment of such fell diseases as diphtheria. Let them hope and pray that the treatment of cancer might soon follow the same course. Though the subject was not immediately connected with pharmacy, many of them had to handle vaccine lymph and powerful sera, and they were greatly indebted to Dr. Grant for the lecture he had given them, and the pictures he had shown of the operations of preparing vaccine lymph and sera. He was sure that when they came to see these things they would do so with the authority and interest which came from knowledge.

Dr. Leonard Dobbin seconded the motion, which was passed with acclamation, and conveyed to Dr. Grant by the Chairman, and Dr. Taylor Grant, in returning thanks, said he desired to acknowledge the kindness of Messrs. Parke, Davis and Co., who had lent some of the slides, illustrating the preparation of vaccine lymph and antitoxins.

The meeting then closed.

NORTH-EAST LANCASHIRE CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Thursday, November 12, 1903. An interesting lantern lecture on the teeth of animals, living and extinct, was given by Mr. J. L. Shorrock, L.D.S. (Darwen). Mr. Shorrock showed, by means of original lantern slides, the development of teeth from the lowest type to the highest. By means of blackboard diagrams, he illustrated the dentition of children, and the necessity for keeping as long as possible the first molar teeth. The process of decay was graphically described, and the desirability of arresting it by "stopping" in the early stages, instead of extraction, was pointed out. The best method of preserving the teeth and the desirability of periodical and thorough examinations of the teeth of the children in the public schools were also touched upon.

A hearty vote of thanks was given the lecturer, on the proposition of Mr. Jos. Hindle (Hon. Secretary), who stated that during the winter many such post-graduate lectures on subjects pertaining or allied to the craft would be given.

The rest of the evening was spent in a social manner, songs being contributed by Alderman Shorrock, Mr. J. L. Shorrock, and Mr. Hindle.

LONDON CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Wednesday, November 18, 1903, at the Holborn Viaduct Hotel, Mr. J. C. Umney, Vice-Chairman, in the chair.

The Secretary, Mr. R. B. Betty, said the first business of the meeting would be to congratulate the President, Mr. Idris, on being elected Mayor of St. Pancras; also he wished to congratulate the Association on the fact that Mr. Atkins, President of the Pharmaceutical Society, had been elected their first honorary member. Mr. Betty then sketched the programme for the ensuing session, stating that papers would be read dealing with the assistants' problem, co-operative buying, a new cheap food product, and other topics of interest to chemists.

Chemists and the Medicine Stamp Acts.

Mr. John Humphrey then read a paper showing the effect of the recent decisions of the Inland Revenue authorities in regard to the interpretation and enforcement of the provisions of the Medicine Stamp Acts. The text of the paper is printed at page 737.

The Chairman said they were all much obliged to Mr. Humphrey for his statement, which brought the matter up to date, so far as the retailer was concerned. But the wholesalers were still in a difficult position in that a medicine, which might be prepared and sold by a registered chemist without a stamp, was liable to stamp duty if sold by a wholesale firm to a retail chemist, and the retailer was not allowed to remove the stamp. Thus wholesalers were placed in an extremely difficult position. One thing was certain. The position of the registered chemist must not be weakened. He had, however, asked the Inland Revenue authorities whether a wholesale druggist would be permitted to pack ailment-named remedies, with the name and address of the retail chemist printed on the label, without stamping them, but he had not yet received an answer.

A number of questions were then asked relating to the sale of children's teething powders and other preparations loose, the dispensing of prescriptions containing proprietary medicines liable to stamp duty, the sale of medicated soap, and as to how long the present interpretation of the Acts was likely to last.

Mr. Humphrey, in reply, said he did not think chemists would be unduly interfered with for selling children's powders singly unstamped. The present interpretation of the Medicine Stamp Acts was, he thought, likely to last a long time, and it was probable that the Acts would be more strictly enforced than ever before. If a prescription contained as one of its ingredients a dutiable medicine, it was not necessary to stamp the mixture, but if the prescription ordered a proprietary medicine like Fellow's Syrup alone, the medicine must be stamped, though not if it contained one or more ingredients in addition to the syrup. With regard to prescriptions generally, he was of opinion it was inadvisable to raise any question about them. Some time ago the question was raised whether, when a physician ordered a mixture to be labelled "to be taken when the cough is troublesome," the use of such words on the label would render that mixture dutiable. He happened to know that the Somerset House authorities rather regretted that the question had been brought to their notice, because they would not themselves have raised the point, but now that their attention had been directed to the question they were bound to say that those words on the label of a mixture did incur liability. With regard to keeping preparations in bulk and retailing them in cups or other receptacles brought by the customer, that could be done without stamping the medicines; it was the packages, not the contents, which were dutiable. So far as ordinary medicated soaps were concerned, chemists could recommend them as much as they pleased, but not if the soap was intended to be used as a salve or ointment.

A vote of thanks was accorded to Mr. Humphrey for his paper.

Federation.

Mr. G. P. Pond communicated a paper on "Federation," in which he advocated the formation of a National Society of Chemists, with branches in all parts of the country, and a central office in London, and he suggested that it might associate itself with the Chemists' Defence Association. The objects of such a society would be:—(1) To assist the Pharmaceutical Society in every possible way; (2) To watch legislation; (3) To form various committees, Parliamentary and otherwise, as necessity required; (4) To look after trade interests—the Stamp Acts, the Pharmacy Acts, the decisions of magistrates, the remarks of coroners and the Press, and advertisements; (5) To give advice to its members on all matters of importance connected with the trade; and (6) To encourage chemists and druggists to serve on local bodies, etc. He moved that a committee be appointed to formulate the best plan for the formation of a National Society of Chemists, and report to the Committee of the London Chemists' Association prior to placing the scheme before a general meeting.

Mr. Watson-Will, Secretary of the Federation of Local Pharmaceutical Associations, said Mr. Pond was somewhat in the position of Rip Van Winkle. Such an organisation as Mr. Pond advocated had been in existence for some years, and now represented many thousand chemists. He then read the amended rules of the Federation.

Mr. Betty, who had previously given notice of his intention, moved the following:—

> That the Federation of Local Pharmaceutical Associations holds two general meetings yearly, one to take place on the morning after the British Pharmaceutical Conference, the other in London, in the afternoon after the annual pharmaceutical meeting in May.

He pointed out that if this were passed it would go before the Federation as a recommendation from that Association.

Mr. Burton raised a point of order, and

Mr. Pentney, while not agreeing with Mr. Pond's motion, seconded it to put the meeting in order.

Mr. Watson-Will moved a direct negative, that Mr. Pond's motion lie on the table.

Mr. Feaver Clarke seconded, because the present Federation met the requirements of the case. He also wished to state that since a local association had been formed in North Kent, every member of the Association had joined the Pharmaceutical Society.

Mr. Pond then withdrew his motion, and

Mr. Willson having seconded Mr. Betty's motion,

Mr. Humphrey stated that on the afternoon of the annual meeting of the Pharmaceutical Society, it had already been decided to hold something in the nature of a conversazione. He suggested, therefore, that Mr. Betty's motion should be slightly modified, so as to leave the date open.

This was agreed to, and the motion was then put to the meeting and carried unanimously.

A vote of thanks to Mr. Umney for presiding terminated the proceedings.

Committee Meeting.

At a meeting of the Committee, before the general meeting, it was decided that the Thames should be the dividing "line" between the Northern and Southern branches of the Association.

A Parliamentary Committee was appointed to assist the Council of the Pharmaceutical Society with regard to the Pharmacy Bill.

It was agreed that the Hon. Secretary should have the assistance of a paid canvasser, and the Chairman (Mr. J. C. Umney) said that his firm would assist in laying the claims of the Association before the chemists of London.

WESTERN CHEMISTS' ASSOCIATION (OF LONDON).

ANNUAL DINNER.

Wednesday, November 18, 1903, at the Café Royal, London, W., Mr. J. W. Bowen, President, in the chair. Among those present were the Vice-President of the Pharmaceutical Society and Mr. J. F. Harrington, member of the Council.

Dr. Lanyon Owen, who was wearing a South African medal, with bars, proposed the toast of the

Western Chemists' Association.

Mr. Bowen, the President, was, he understood, the personification of the perfect examiner, and one of the most respected of pharmacists. It was, he thought, only a short step from an association such as that to a trades-union. What a terrible thing it would be for London if the medical and pharmaceutical organisations were to arrange a strike!

The President, in reply, said that the Association was not in danger of becoming a trades-union. They could have increased their membership very materially if it had not been that a number of similar associations had sprung up all over London. But theirs was the oldest metropolitan association, and had done something to help on the others. Their numbers, however, and their balance-sheet presented a very healthy appearance. They congratulated both their ex-President (Mr. Gulliver) and the Pharmaceutical Society on that gentleman's selection as an Examiner.

The Vice-President, Mr. F. A. Rogers, proposed the toast of the

Pharmaceutical Society.

He expressed his regret that the President of the Society was unable to be present. But they were fortunate in having the Vice-President, Mr. Allen, with them. The Society often came in for criticism, but it was strong in the strength which it knew it had. The mills of the Pharmaceutical Society seemed sometimes to grind slowly, but some objects could only be obtained in that way; they, as pharmacists, should put the greatest confidence in those who directed the course of the Society, as those gentlemen knew the right time to take action. With regard to the medicine stamp difficulty, they recognised the invaluable help which the *Pharmaceutical Journal*, the official organ of the Society, had given, and was giving. No action could tend more to make it read and re-read by chemists. With regard to local associations, they were doing a great work in uniting chemists. He concluded by referring to the grand work done by the Benevolent Fund of the Pharmaceutical Society.

Mr. C. B. Allen expressed his personal regret at the absence of Mr. Atkins, who had recently had many journeys on behalf of the Society. It was not necessary for him that evening to defend the actions of the Society. It was impossible for the officers of the Society to give the results of their action until those results were completed. With regard to the Pharmacy Bill, the provisions of which he had explained to the Western Chemists' Association, when it was first put forward, he would not say whether there was any hope of passing it, but he would devote his energies to the attempt to get it through. With the exception of a clause referring to the privileges of medical men—privileges which the Society never intended to interfere with—the Bill was exactly the same as before. The Council had no intention of dropping Clause 7 as long as it was possible to go on with it. An argumentative clause of that kind did, at any rate, ensure a discussion as to its meaning, and he was not sure but that the opinion of legislators was inclined to undergo some change, and they would, he thought, find that the Bill would have a strong backing. After referring to the School of Pharmacy, the speaker remarked that not every man's son could pass the first time the examinations of the Society, and the Society, consequently, came in for criticism. He thought that the introduction of professorial examiners had been a very great boon, not only to the Society, but to the candidates. Botany was a subject in which many young men were deplorably weak. But it was not in the pure sciences, but in practical pharmacy, that so many candidates failed. There must be a failing in the practical training of the candidates. No suspicion of trades unionism had ever cast its slur on the Pharmaceutical Society. It had occurred to him to ask what would happen if the members adopted among themselves a code of ethics with regard to the practical conduct of their business. Such a process might be bad for those who remained outside, but it would not be a bad thing for the members. But he would remind those who remained outside that every benefit gained by the Society for the members also benefited the others. With regard to the *Pharmaceutical Journal*, they were now producing an organ which appealed to all their members. The Journal had not in any way given up any of its science, but it had incorporated the trade element in a style which met the wishes of nearly all chemists. A little time ago a great change had been made with regard to stamped medicines. He knew that the Editor of the *Pharmaceutical Journal* had done his utmost to gain whatever concessions were possible, and to find out what the requirements of the authorities would be. The Inland Revenue authorities laid stress on the fact that a separate book of recipes should be published. The 'Pharmaceutical Journal Formulary,' now being published, was such a book, and it would contain 10,000 formulæ, sent up by members of the Society all over the kingdom, for medicines which they would be able to sell as domestic remedies without liability to stamp duty. Some might think it unwise to publish the formulæ in English, but the British Pharmacopœia was in English. The number of objectors was certainly a minority, and he was sure that most people were glad at the action which had been taken. But the Society had also decided to publish another work—a 'Compendium of Medicines'—quite distinct from the 'Pharmaceutical Journal Formulary.' The object of the 'Compendium' was to get together as many formulæ as could be got together, from all sorts of sources, for medicines of an unofficial character prescribed by medical men. Among its members the Society had a splendid organisation, and the most able pharmacists, to compile such a book as every member of the Pharmaceutical Society would be proud of. If they could produce such a book, he thought that members would have fresh cause for satisfaction. The Society was, as he thought he had proved, doing its very best for its members. He hoped that as soon as any attention was given to domestic legislation, justice for pharmacy would be one of the very first things to receive attention.

The **Chairman** proposed the toast of "The Visitors," to which Dr. **Macdonald Brown**, of Edinburgh, responded. Dr. Brown said that he had been apprenticed to a chemist and druggist, and many years ago passed the Minor Examination of the Pharmaceutical Society. And now he could actually write a prescription, which was what many doctors could not do.

The last toast, "The Dinner Committee," was proposed by Mr. W. **Warren**, and replied to by the **Hon. Secretary**, Mr. Philp.

A musical programme was submitted during the evening, but did not reach a high standard.

MIDLAND PHARMACEUTICAL ASSOCIATION.

INAUGURAL MEETING.

Friday, November 13, 1903, at the Great Western Hotel, Birmingham. The **President**, Mr. A. W. Gerrard, F.C.S., and Mrs. Gerrard had the pleasure of receiving nearly a hundred members and guests. The company included, amongst others:—Mr. F. H. Alcock, F.I.C. (Vice-President), Dr. Symes (Liverpool), Mr. W. G. Cross (Shrewsbury), Mr. J. Humphrey (Editor of the *Pharmaceutical Journal*), Messrs. C. Thompson, A. W. Southall, G. Southall, G. E. Perry, J. Wakefield, J. A. Radford (Hon. Secretary), G. H. Brunt, J. T. Cattell (Knowle), H. S. Shorthouse, W. A. Shaw (Harborne), F. Smith (Handsworth), Jeffrey Poole, F. J. Gibson (Wolverhampton), and J. A. Wilcock (Wolverhampton).

The **President** delivered his

Inaugural Address,

which is printed in full at page 741, *et seq.*

Dr. **Symes** moved a vote of thanks to the President for what he described as a very able address, such an address as showed Mr. Gerrard owed no apology for the position he occupied as President of the Association, an association which was well known throughout the country as one of the leading organisations of the kind, and one doing excellent work. If any further evidence was wanted as to the standing of the Association amongst the pharmaceutical associations throughout the country, that was supplied by the large and representative attendance at the present gathering. For some years the President had been engaged more or less in applying his abilities to commerce, and they were inclined to forget his earlier association with pharmacy. Having known Mr. Gerrard for a good many years, he was able to say that in his earlier days the President was an assiduous student and teacher of pharmacy, and a hard worker in abstract science. Many forgot that Mr. Gerrard was the discoverer of pilocarpine, which had become an essential medicine, and one which they could not now get on without. In discovering this alkaloid, Mr. Gerrard contributed very materially to the useful products which the pharmacist used. They were also inclined to forget the numerous experiments the President made and published on gelsemium. To him is also due the official test for atropine. In addition to this, he did a lot of work on belladonna and henbane, and proved that the root of belladonna was the portion of the plant containing the most active part, and atropine; and at the present day tne Pharmacopœia had adopted this extract for making plasters. He did not say the Pharmacopœia made the best kind of plaster, but Mr. Gerrard was not responsible for that. There were numerous other subjects which Mr. Gerrard had taken up and thoroughly threshed out with ability and skill. Ten years ago a friend of his, who, in the course of a tour, had met with several of the leading pharmacists on the Continent, said, on his return, how surprised he had been to find that Mr. Gerrard was so well known, and how highly he was appreciated by pharmacists. These gentlemen placed Mr. Gerrard, said Dr. Symes, where he well deserved to be, in the front rank of the scientific pharmacists of Great Britain. Turning from personal matters, Dr. Symes said he was naturally pleased with the parts of the address which touched upon pharmaceutical education. It was some fourteen years ago now since, at Bloomsbury Square, he moved a resolution that some portion of the then newly-built research laboratory should be used for teaching practical pharmacy. He meant to say that the students who went to the Square, and got a good deal of chemistry, a good deal of botany, and materia medica, etc., should also be taught the manipulation from the crude things to the finished product. At the present time there was a School of Pharmacy, a laboratory for galenical pharmacy, but not only himself, but the professors who controlled it, as well as all the students, knew there was not a properly equipped laboratory for teaching them their calling. Chemistry and botany he would not depreciate, nor any other science—all science was good and all knowledge was good—but a school which taught these sciences, and did not teach their application to pharmacy, was woefully deficient. He hoped they would soon have an improved method of teaching practical pharmacy there, or he must leave it to his friends to accept the position as a failure. He felt this very strongly, and he felt it the more because there were two sides to the condition of pharmacy at the present moment. The President had touched upon some of the leading features which affected them, some calculated to help them, such as the Pharmacy Bill, and some calculated to worry them, such as the medicine stamp duty. The proposals with regard to this had been greatly modified, thanks to the efforts of Mr. Humphrey and others, in getting concessions which render it much more bearable than it would otherwise have been. He believed the present position of pharmacy was not solely due to unqualified competition. It was due to it to this extent—that by not putting forth their whole strength they had given the enemy opportunities which he never would have had if they had been in a position to combat him to the fullest extent; not merely by meeting him on his own ground, but rather on a higher ground. Wherever a gentleman was conducting a pharmacy in an intelligent way, as the result of his earlier training, the man generally succeeded; few of such men got bowled out. Therefore, it was that he wanted all who went into the calling in the future to be better equipped with the means of carrying on his business, and be able to defy competition rather by the knowledge he possessed than by being hedged round by any kind of protection. They could do more for themselves than anyone else could do for them from outside. The kind of training he had indicated was very essential, and he was glad to be assured of the President's help.

Mr. W. G. **Cross**, in seconding the vote, remarked that anyone who heard the address could not fail to be struck with the masterly way in which the President dealt with the various subjects. He had given the Midland Association something to think about and talk about for the whole of the session.

The vote was supported by Mr. J. **Humphrey**, and carried with acclamation.

The **President** briefly returned thanks.

Light refreshments were afterwards served, and there were further musical contributions from Mr. Syd Halliley, Mr. A. Wheeler, Mr. Temperley, Master Temperley, and Miss Gerrard. The President's daughter gave a much-appreciated harp solo.

TUNBRIDGE WELLS AND DISTRICT CHEMISTS' ASSOCIATION.

ANNUAL DINNER.

Wednesday, November 11, 1903, at the Clarendon Hotel, Tunbridge Wells. Mr. H. S. Pearmund in the chair.

A short report appeared at page 720 of last week's issue.

The Chairman proposed the usual loyal toast, and followed this with the toast of the

Pharmaceutical Society.

He had been, he said, connected with pharmacy sufficiently long to appreciate the energy which had come over the Society of late years. It was the only body which could help chemists or ameliorate their present difficulties. He referred to pharmaceutical legislation, and said that Tunbridge Wells had had much to say in discussing and carrying to a conclusion the long-delayed question of the storage of poisons. He was particularly glad to see the President of the Pharmaceutical Society that evening, and said he hoped that they might see Mr. Bremridge at Tunbridge Wells in his official capacity. He did not hesitate to say that it would be absolutely fatal to withdraw Clause 7 of the Pharmacy Bill. He referred to the large proportion of failures in the Minor Examination, and said that there should be some means by which the Society could get in touch with the unqualified men, who might be registered and brought into the fold in a subordinate position.

Mr. S. R. Atkins, President of the Pharmaceutical Society, responded. He spoke of the great amount of work and responsibility which fell to the President of the Society, but he loved it and revelled in it. There were anxious moments, however, and he claimed their kindly support. The one desire of the Council was to do the right thing. He did not know a body of men who more strenuously endeavoured to do their duty than the Council of the Pharmaceutical Society. He hoped that chemists of Tunbridge Wells would, at the proper moment, interview their candidates for Parliament, and explain the points of the Pharmacy Bill. With regard to the examinations of the Society, they might rest assured that those examinations were conducted with every consideration to the examinee. He had watched the examinations closely, and he had no hesitation in making that statement. He would not say much that evening about the *Pharmaceutical Journal*, but he would say that he held now more emphatically than ever in his life that the Journal should be made, as it was now being made, so that it might be read by all. He referred to the School and Museums of the Society. When in Paris, recently, two of the honorary members had told him that they knew the pharmaceutical museums of Europe well, but that they did not know any to equal those at Bloomsbury Square. The President concluded by advocating the claims of the Benevolent Fund, and by thanking the members of the Tunbridge Wells Association for their kind hospitality.

Mr. R. A. Robinson also replied very briefly to the toast. He desired to add his testimony that the Council was doing its best for the members of the Pharmaceutical Society. He then briefly proposed the health of the

Visitors,

coupling with the toast the names of Mr. T. D. Vint and Mr. A. Stooke, Presidents of the East Sussex and North Kent Chemists' Associations respectively.

Mr. Vint, in reply, spoke of the value of local associations, and said that he hoped they might meet some of the Tunbridge Wells chemists at Hastings on a future occasion.

Mr. Stooke replied to the toast in a few graceful sentences.

Mr. Atkins submitted the toast of the

Tunbridge Wells Chemists' Association.

He was glad to know that the Association was a living force. It was once said of a famous German general that he had only to place his finger on a button and an army corps was ready. He wished to see the same thing with their local associations. When the call to arms came the whole organisation should be ready to answer. He coupled with the toast the name of Mr. A. E. Hobbs.

Mr. Hobbs spoke of the great compliment paid them by the President of the Society in attending that dinner. He referred to the past work of the Association, and said that, as far as he personally could, he should endeavour to make the Association worthy of its name and of its connection with the Pharmaceutical Society.

Mr. A. Nicholson proposed the toast of

The Pharmaceutical Press.

He referred to the fact that Jacob Bell, the founder of the *Pharmaceutical Journal*, was buried in their cemetery at Tunbridge Wells. Tunbridge Wells claimed the late Professor Bentley, who was apprenticed in the town; and other distinguished men in the pharmaceutical world. Referring to the *Pharmaceutical Journal*, he was glad to see that it was giving more attention to the trading side of their calling. He would couple with the toast the name of Mr. John Humphrey.

Mr. Humphrey replied.

Mr. O. Rogers proposed the health of the "Chairman," which was cordially given and suitably replied to.

HARTLEPOOLS AND DISTRICT CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Wednesday, November 11, 1903, at the Grand Hotel, West Hartlepool, Mr. J. Hill in the chair.

A letter was read from Mr. J. F. Wilkinson, of Manchester, in reference to the label question, and enclosing a copy of booklet giving specimens of labels that were not liable to duty. This was laid on the table.

Co-operative Buying.

The question of co-operative buying, which was discussed at the last meeting, was then brought up. The Secretary considered that the best plan would be to appoint a small sub-committee to go thoroughly into the matter and report to a future meeting. It was resolved that the Committee should consist of Messrs. J. Hill and G. A. Watt, together with the Honorary Secretary.

Inspection and Adjustment of Scales.

A letter was read from Messrs. W. and T. Avery, stating terms upon which they would enter into a contract with the Association. It was carried unanimously "That the Association enter into a contract with Messrs. W. and T. Avery for the inspection and adjustment of all scales belonging to the members of the Association, in accordance with the terms as stated in their letter of November 3, 1903."

The Secretary reported that he had written to several manufacturers of proprietary articles relative to protection of retail prices, but had only received two replies, and these were not of a very satisfactory nature.

Smoking Concert.

The meeting was followed by a smoking concert, at which (in the unavoidable absence of Alderman Thos. Clarkson) Mr. P. R. Sibson, L.D.S., presided. A most enjoyable programme had been arranged. During the evening a collection was taken on behalf of the Benevolent Fund of the Pharmaceutical Society, and, together with donations since received by the Secretary from those unavoidably absent, amounted to £2 10s.

BRIGHTON ASSOCIATION OF PHARMACY.

ORDINARY MEETING.

Thursday, November 12, 1903, at No. 58, King's Road, Brighton, Mr. W. H. Gibson in the chair.

It was decided to leave the Committee to deal with the rules, which required bringing up to date.

Election of Officers.

The officers were elected as follows :—President, Mr. W. H. Gibson, F.C.S.; Vice-Presidents, Messrs. W. W. Savage, H. A. Costerton, and J. Padwick; Secretary, Mr. C. A. Blamey; Assistant Secretaries, Messrs. G. B. Savage and Robinson; Treasurer, Mr. J. R. Gwatkin. Committee—Messrs. Franklin, Cook, Williamson, Heath, Padwick, Jun., Ploughwright, and Councillor C. G. Yates.

Mr. W. H. Gibson proposed a vote of thanks to Mr. Yates, and heartily congratulated him on the successful issue of his election campaign; but regretted extremely that his valuable services as Secretary would be lost to the Association. The vote was very heartily accorded.

British Pharmaceutical Conference.

With regard to the visit of the Pharmaceutical Conference, which was discussed and deferred until the next meeting, it was stated that something over 90 guineas had now been guaranteed.

Co-operative Buying.

The formation of a Buying Club was next brought before the meeting, Mr. Blamey explaining that the idea was for the members to form a kind of club for the purpose of collective buying of certain articles of stock in which an advantage in price is to be obtained in the purchase of quantities. It was decided to form a sub-committee to deal with the preliminaries and to report at the next meeting.

EDINBURGH CHEMISTS', ASSISTANTS', AND APPRENTICES' ASSOCIATION.

VISIT TO SULPHURIC ACID WORKS.

On Tuesday, November 10, about sixty members proceeded to the works of Messrs. J. and J. Cunningham, Limited, at Leith, where they were courteously received by Mr. Shepherd, the chemist in charge, who conducted the large party over the works. A visit was first paid to the more modern pyrites burners. In this department Norwegian pyrites, containing about 47 per cent. of sulphur, is used in small pieces about the size of ordinary gravel. After burning, only about 3 per cent. of the sulphur remains in the ashes, which are sold to the iron smelters. The Norwegian pyrites used is free from arsenic, and in this department a pure acid is made. The nitre oven, Glover tower, chambers, and Gay-Lussac towers were visited and fully explained. A visit was then paid to the older part of the works, where the old style of sulphur burners were seen in operation. In this department Spanish pyrites from Rio Tinto is used in pieces about the size of road metal. The pyrites contains about 50 per cent. of sulphur and about 3 or 4 per cent. of copper. It also contains about 0·3 per cent. of arsenic. Consequently the acid made in this department is used for operations in which the presence of a small percentage of arsenic is not objectionable, such as the making of artificial manures and the purification of mineral oils. After the sulphur has been burned out the ash is shipped to Newcastle, where the copper is removed. The residue is then treated by the iron smelters, who remove the iron, and it was said that what remained after that was used up in making bricks.

On the motion of Mr. A. E. Kelly, Vice-President, a cordial vote of thanks was awarded to Mr. Shepherd for his kindness in conducting the party and explaining the different processes, and to the Messrs. Cunningham for permission to visit the works.

THE CHEMISTS' BALL.

APPOINTMENT OF COMMITTEE.

On Monday, November 16, 1903, at 16, Bloomsbury Square, W.C., Mr. Michael Carteighe in the chair, a general meeting was held of those interested in the Chemists' Ball, to appoint a committee and make preliminary arrangements for the ball of 1904.

It was decided that the ball should take place on Wednesday, January 20, 1904, at the Whitehall Rooms, Hotel Metropole, London. It was resolved that the President of the Pharmaceutical Society should be asked to be President of the Ball Committee, the remainder of the Committee being constituted as follows :—Messrs. J. W. Bowen, R. Bremridge, M. Carteighe, J. F. Harrington, V. C. Hewlett, E. W. Hill, Walter Hills, A. C. Preston, R. A. Robinson, jun., J. C. Umney, and W. Warren. Mr. Umney was re-elected Hon. Treasurer, and Mr. Robinson was appointed Hon. Secretary, the latter in place of Mr. A. J. Bullen Cooper, who had expressed a wish to retire from the office.

CAMBRIDGE PHARMACEUTICAL ASSOCIATION.

ORDINARY MEETING.

Friday, November 13, 1903, at the house of Mr. E. H. Church, the President, Mr. E. Saville Peck, M.A., opened a discussion on

Dispensing.

Mr. Peck expressed satisfaction at the increased attendance of junior members. He maintained that it was the three years' preliminary training in dispensing, and therefore in practical pharmacy, which was the most important factor in the success or failure of a candidate for the Minor Examination, for upon the thoroughness of that training depended very largely the candidate's knowledge of no less than three subjects—viz., practical pharmacy and dispensing, theoretical pharmacy, and prescription-reading. One might almost add a fourth—materia medica. If a man had been taught in pharmacy to prepare pharmaceutical products from crude drugs he had learned to recognise materia medica specimens. One had heard a good deal in reference to a curriculum, and he maintained rightly so. He thoroughly approved of it; neither did he see that its enforcement would necessarily involve any insuperable difficulty. Until the time was ripe for an extended curriculum he maintained they should use the existing arrangements and see that the declaration form —with regard to the three years' training—was faithfully filled up. If that were done he was sure the pass list of the Minor would be vastly improved, for doubtless the appallingly low percentage of passes was due to insufficient preliminary training in pharmacy. He also believed that this very largely explained the differences in the percentage of passes between Scotland and England and Wales. In Scotland, he was given to understand, the average conditions were more suitable for the proper training of apprentices. His object that evening was simply to bring the matter forward, so that some discussion might ensue. He would like to draw attention to one paragraph in Mr. R. H. Jones's paper (*P.J.* [4], **16**, 239). He said : "The seeming supineness of the Council and Boards of Managers in regard to such an important and inadequate regulation is open to censure, or, at any rate, to critical remark"—meaning to say the examiners were not alive to the fact that the declaration was made incorrectly. It would be seen in the last week's *Pharmaceutical Journal* that the Board of Examiners for England and Wales submitted a resolution to the Council in August, 1902, some months before Mr. Jones read his paper. In conclusion, Mr. Peck said they had now raised the preliminary equivalent to a very fair standard of general education, and the next step was clearly to enforce a good training in pharmacy. He thought the three essentials for a good dispenser were, first, a good knowledge of drugs, their physical and chemical properties, and approximate doses; secondly, a desire to carry out the attention of the prescriber; and, thirdly, he should be cleanly, accurate, and dexterous. Mr. Peck, in condemning the practice of describing various substances by their Latin abbreviations, gave some humorous examples.

Messrs. Addison, Campkin, Evans, Deck, Church, Greensmith, Robinson, and others took part in the subsequent discussion.

A hearty vote of thanks to Mr. Church, proposed by Mr. B. S. Campkin, and seconded by Alderman Deck, was accorded, and, with a vote of thanks to the President for his paper, proposed by Alderman Deck, and seconded by Mr. Robinson, the meeting concluded.

NORTH STAFFORDSHIRE CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Thursday, November 12, 1903, at the Roebuck Hotel, Stoke-on-Trent, Mr. T. Charles (Burslem) in the chair.

Benevolent Fund.

The Hon. Sec. (Mr. Edmund Jones), stated that he had received a letter from the President observing that the Pharmaceutical Society's Benevolent Fund had granted £20 to a distressed brother in North Staffordshire, and on the motion of Mr. D. H. Oxen, seconded by Mr. Edmund Jones, the best thanks of the Association were tendered to Mr. Cross and Mr. Averill for their efforts in obtaining this grant.

Mr. Blades (Leek) opened a discussion on the

Medicine Stamp Duty,

and commenced by reading a letter from Mr. J. Lees, chemist, of Oldham, who said that his plan was to use a slip label containing the main ingredients. He enclosed samples of a few of the twenty-five sorts, of each of which he had had 1,000 printed Though he had sent many formulæ to the 'Pharmaceutical Journal Formulary,' he was giving the formula on the bottle in cases where he did not intend to affix a stamp. The Stamp Act, Mr. Lees' letter continued, had done what the Pharmacy Act failed to do; it had recognised a difference between the chemist and the huckster, and this more than compensated for any trouble and inconvenience which would be experienced. Mr. Blades (continuing) suggested that they ought as an Association to send to Somerset House asking for clear and definite instructions on the matter of liable and unliable labels.

The Hon. Secretary advised that at present it would be of little use writing to Somerset House, but to wait patiently until the end of the year.

Mr. Oxen suggested that they write to the Secretary of the Chemists' Defence Association, and see what his opinion was on the label question.

This suggestion was agreed to.

Mr. Emery, who continued the discussion, said a doctor asked him recently why they did not stop sweet nitre being sold "in pettifogging shops." "You talk," this medical man added, "about the public good, and put restrictions on the sale of poisons for the public good, why not protect such things as sweet nitre? With any amount of stuff sold by these little shops, the people who sell them don't know what they are selling, and the people who take them are equally ignorant." The speaker said he would like to see the chief drugs in the Pharmacopœia controlled by chemists and chemists only.

Mr. Edmund Jones, in an aside, said he was glad so energetic a member as Mr. Emery had been appointed Divisional Secretary for Stoke-on-Trent.

Mr. Emery replied.

Mr. Mellor, continuing the discussion on the Stamp Duty, said he should back up the Inland Revenue, and not try to make them give as many concessions as possible, and they as chemists ought to oppose any proposition to exempt ailment names.

Mr. Blades advocated

Mutual Buying

among the chemists of N. Staffs, and suggested that they might give orders for certain goods mutually at periodical meetings, and thus effect a saving by purchasing in bulk.

Several members addressed themselves to this subject, but the Chairman did not like the idea for ordinary meetings, though agreeing with the principle; and the matter dropped.

Chemists' Ball.

Mr. Edmund Jones suggested that during the winter they should hold in N. Staffs a chemists' ball, say, early in the new year, the funds to be handed over to chemists' charity purposes. He thought such an event might be made a great success if the members would take the matter up whole-heartedly.

The members approved of this suggestion.

Farewell.

Mr. D. Oxen voiced the regrets of the members at Mr. Mellor's departure for San Remo, saying what good work Mr. Mellor had done for the Association, and how his papers had been appreciated throughout the profession.

The Chairman also said a few kindly words, and there was a sympathetic leave-taking of Mr. Mellor.

CHEMISTS' ASSISTANTS' ASSOCIATION.

ANNUAL REUNION.

On Thursday, November 12, 1903, at the Restaurant Frascati, Oxford Street, W., Mr. Mowbray Trentham Maw in the chair. There was a large gathering of chemists, assistants, and representatives of wholesale firms, the occasion being the annual reunion of the C.A.A. The function was held in the Banqueting Hall, and took the form of a smoking concert. After a few introductory remarks by the Chairman, an excellent programme of vocal and instrumental music was given by a number of professional entertainers, including two lady singers. The proceedings were most enjoyable, and the vote of thanks which was accorded to Mr. Lownsbrough was well earned. The thanks of those present were also tendered to the Chairman, who, in replying, expressed his sense of the honour done him in asking him to preside at the annual reunion of an association like the Chemists' Assistants' Association.

BRITISH PHARMACEUTICAL CONFERENCE.

MEETING OF EXECUTIVE COMMITTEE.

Tuesday, November 10, 1903, at 16, Bloomsbury Square. Present, Mr. T. H. W. Idris, President, in the chair; Dr. Attfield, Messrs. Atkins, Martin, and Naylor, Vice-Presidents; Messrs. Bird, Wippell Gadd, J. C. Umney, Hon. Treasurer; Peck and White, Hon. General Secretaries.

Vote of Condolence.

A vote of condolence with the family of the late Mr. Barnard S. Proctor, in the following terms, moved by Dr. Attfield, seconded by Mr. Atkins, and supported by Mr. Martin, was unanimously passed. (Mr. Payne, of Belfast, also wrote asking to be associated in this vote.) Resolved—

> That the Executive Committee of the British Pharmaceutical Conference, at its first meeting since the decease of Barnard Simpson Proctor, offers its deep sympathy with the widow, sons, and daughters of its late member, who was one of the founders of the Conference in 1863, author of the first paper read at its meetings, and of many other original communications since. He was a model leader in pharmacy, a man of science, and a staunch friend. In Mr. Barnard S. Proctor, British pharmacy possessed, and has lost, one of its brightest ornaments.

The Paris Centenary.

The President spoke of his enjoyable trip to Paris, on the occasion of the hundredth anniversary of the Société de Pharmacie, when he read an address, which has been printed in full in the *Pharmaceutical Journal* (see *ante*, page 586).

The thanks of the Committee were tendered to the President for his action in the matter.

The B.P.C. Formulary.

On behalf of the Formulary Committee, Mr. Martin asked for the opinion of the Executive on the difficulty which had arisen through the decision of the Council of the Pharmaceutical Society to publish a compendium of medicines. After considerable discussion, it was decided to ask the Council of the Pharmaceutical Society to indicate to the Executive Committee of the British Pharmaceutical Conference the scope of its projected work. On receipt of the reply, the Hon. General Secretaries were instructed to call another meeting of the Executive to determine how far such a work would clash with the 'B.P. Conference Formulary,' and decide upon future action.

Future Arrangements.

The Hon. Secretaries reported that an invitation to hold the annual meeting in 1905 had been received from Brighton, and that inquiries had been made by an important Midland town. They were instructed to acknowledge the same cordially, and to inform the senders that the proposals would be placed before the annual meeting at Sheffield, and then finally decided upon.

Research List.

Mr. Bird moved, and Mr. Gadd seconded, the appointment of the following Sub-Committee to revise the Research List:—The President, Messrs. Naylor, Ransom, J. C. Umney, and E. White. This was agreed to.

The Sub-Committee appointed to arrange for a testimonial to be given to Mr. Ransom reported what had been done, and that the circulars issued had met with a ready response.

Other Matters.

Mr. White mentioned that the printers of the 'Year-Book' had failed to carry out their contract to give delivery by November 1, and the Committee gave expression to their disappointment.

Mr. White also called attention to the fact that numerous letters containing remittances from members had failed to reach the Assistant-Secretary, and the familiar blue remittance envelope was ordered to be discontinued. The practice of many members to send postal orders uncrossed, and with numbers unknown, was much deprecated, as, in the latter case, no redress can be obtained from the Post Office should the letter miscarry.

Ten gentlemen, having been duly nominated, were elected to membership.

NEWCASTLE-UPON-TYNE AND DISTRICT CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Wednesday, November 11, 1903, in the Hôtel Métropole, Newcastle, Mr. Foggan in the chair.

Medicine Stamp Duty.

A sub-committee previously appointed to consider the question presented its report, which was read by Mr. Noble, who moved its adoption, was seconded by Mr. Ridley, and spoken upon by the President and Messrs. Merson, Wright, and Clague.

Mr. Clague dwelt at length upon Dr. Bow's Liniment and chlorodyne, and said that the former was sold in the North of England—Dr. Bow was a medical man in Alnwick—in small quantities long before it was stamped. The following were adopted as resolutions:—

> That this meeting deprecates any suggestion to abolish Medicine Stamp Duty.
>
> That this Association recognises the fairness with which the Board of Inland Revenue are endeavouring to interpret the Act in fixing the liability to Medicine Stamp Duty.

The subject proved to an interesting one, and the discussion was kept up until a late hour, when it was found necessary to adjourn the consideration of the suggested "C.O.D." postal system until a future meeting.

TEES-SIDE CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Wednesday, November 11, 1903, at Tate's Café, Stockton-on-Tees, Mr. R. R. Bainbridge, President, in the chair.

Mr. Gregory was called upon to introduce a few topics for discussion. He said that he would like to know the custom of the members with regard to soap liniment. Did they sell methylated or rectified spirit when this was asked for? He suggested that there should be uniformity of procedure on this point, so that in the event of a prosecution there might be a definite custom of the trade to fall back upon. Another point he wished to discuss was the present price of cod-liver oil. The entire absence of anything like a uniform price for this commodity was deplorable. The chemist who paid 4s. 6d. per gallon for his oil could well afford to sell an 8-oz. bottle for a shilling; but among any other body of traders the market price would be followed, and advantage taken of the rising market. He suggested that a uniform price of 1s. for a 4-oz. bottle and 1s. 9d. for an 8-oz. bottle would be something like what should be obtained now that the oil was so much dearer. Mr. Gregory proceeded to refer to the recent prosecutions in blue ointment, magnesia, and other articles of general demand, and suggested that a uniform custom should be followed. He considered that the sale of poisons to children should be more rigidly controlled; he had himself noticed children who had been sent for pennyworths of laudanum take out the cork and proceed to sample the contents of the bottle. He had therefore made it a rule not to serve poisonous preparations to children under fourteen years of age. He drew attention to the soothing syrups frequently made up by mothers for their children, in which laudanum and aniseed were the chief ingredients. He next touched upon the subject of poison bottles, the storage of poisons, and the dispensing of bismuth mixtures. The next point was the great advantage that would accrue if they bought their trade articles in common, and distributed them among themselves, as they would then be able to meet the keenest competition with as great a margin of profit as the local "cutters."

The President invited discussion on the points raised by Mr. Gregory, but before this could be entered upon several gentlemen arrived who had promised to furnish a musical programme. Supper was therefore partaken of, and for a short time afterwards the vocalists monopolised attention.

The discussion on Mr. Gregory's points was opened by Mr. Lee, and carried on with animation by the members.

LIVERPOOL CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Thursday, November 12, 1903, at the Royal Institution, Liverpool, the President, Mr. R. C. Cowley, in the chair.

Dr. Symes called attention to the loss the city of Liverpool had sustained by the sudden death of Mr. Isaac Cooke Thompson. Only about ten days before he had seen Mr. Thompson in perfect health, and with every prospect of a long life. He was a man of great attainments; in scientific circles he could rank with the Professors of the University, many of whom were his personal friends, whilst he was privately a man with great charm of manner.

The President also spoke of Mr. Thompson's kindly fellowship for his fellow men, which endeared him to all.

A vote of condolence to the relatives of the late Mr. Isaac C. Thompson was passed.

Dispensing Questions.

Mr. A. S. Buck called attention to a darkening which he had lately noticed in the following mixture:—

℞ Liquor. morphin. hydrochlor.	ʒvj.
Acid. nitric. diluti	ʒiv.
Syrupi scillæ ....ad	℥iv.

He had made up this mixture for many years, and had only lately found it to darken, in spite of fresh materials having been used in dispensing it.

Messrs. Cowley, Symes, and Marsden took part in the discussion which followed.

Mr. Marsden called attention to the following mixture, which he had recently dispensed several times:—

℞ Renaglandin (Oppenheimer)	℥ss.
Antithyroidin moebius (Merck).........	30 C.c.
Syr. zingiberis ....ad	℥vj.

He mentioned the mixture as being an expensive one, costing about 16s. a bottle, and showing that patients in hospitals were treated at times to anything but cheap drugs.

Mr. Tharratt called attention to a case in which the application of a belladonna plaster to the breast of a lady had caused insanity.

Mr. Marsden asked if the plaster alone was responsible for the state mentioned, or could it not be put down to puerperal mania or some other functional condition.

Mr. Buck and Mr. Cowley had heard of belladonna plasters causing trouble, and the former had received a verbal order for a plaster to be spread with extract of belladonna; he declined to fill it, and afterwards found that the doctor required the ordinary B.P. plaster.

Exhibits of Apparatus.

Dr. Symes showed an apparatus made by Messrs. Beck to show the phenomena exhibited by radium, and spoke of the recent work of Professors Dewar and Ramsay with this substance.

Mr. H. P. Shilston, on behalf of Mr. Dowzard, showed the apparatus with which the recent work on adulteration of cod-liver oil was done by the latter. The apparatus, called a refractometer, was described by the exhibitor.

The President and Dr. Symes spoke of the advantage to be derived from exhibits of this nature, as affording the retail pharmacist an opportunity of seeing apparatus used in large manufacturing laboratories for the detection of adulterants.

Mr. Shackladу mentioned a sample of oil which had been certified as genuine which had failed to pass the refractometer test, although it complied with the requirements of the Pharmacopœia, and considered it to be necessary to go outside that work at times like the present, when there was so much inducement to adulterate an oil as expensive as that in question is.

Mr. Cowley then read a paper by himself and Mr. Catford on

Nitromuriatic Acid, Dilute and Strong.

Standardised solutions were prepared of nitric and hydrochloric acids, comparing weighed quantities. After mixing in the proper proportions, quantities were weighed and titrated daily, and then weekly, for a considerable time, but no loss of acid value could be detected. Mixtures of the dilute acids were tried in various proportions, but the results were always that the same volume of standard alkali was required at different periods for the neutralisation of an equivalent volume of mixed acids. The authors proceeded to test the nitric acid used. Two samples of diluted acid were prepared, the one being left in a glass-stoppered bottle exposed to daylight, and the other kept in the dark. The iodide test, after neutralisation and the addition of acetic acid and starch, was then applied, with the result that the exposed sample produced a much deeper blue than the other. The authors were prepared to find iodine liberated by the dilute nitrohydrochloric acid, but as chlorine also liberates its equivalent they expected an augmented reaction. This, however, was not the case; the depth of blue appeared to depend on the quality of nitric acid and the time of exposure to daylight. They then concluded that when there is sufficient water present to hold in solution all the gaseous products that must be evolved to liberate free chlorine, it is no more reasonable to speak of nitrous acid and chlorine as being in the same solution than to call brine a solution of sodium hydrate and hydrochloric acid. As a further test a mixture of the strong acids, nitric 10 C.c. and hydrochloric 45 C.c. in a two-ounce phial was immersed, upright, in 500 C.c. of distilled water in a wide-mouthed, stoppered bottle. The usual reaction between the strong acids, orange to yellow and evolution of gas, took place, but the minute bubbles were absorbed by the surrounding water before they could reach the surface; and although kept in a dark cupboard no indications of loss of acid could be detected a week or two after when, after shaking up, a portion was titrated with alkali. Lastly, 18 C.c. of strong hydrochloric acid was weighed into a small tared bottle, 4 C.c. of strong nitric was also weighed in, and the mixture covered with a watch-glass to give easy vent to gaseous products. After remaining five days in a fume-cupboard, it was weighed and titrated, to determine the amounts of the mixed acids that had been decomposed. It was found that the nitromuriatic acid required less alkali than if there had been no reaction, showing a loss of 13 per cent. of the total acids. It is considered certain that there is free chlorine in appreciable quantity more than a week after the mixture is prepared in this way, and the authors are equally confident that a mixture of the acids made in four times their volume of water does not contain more than a trace either at the time of mixing or subsequently. So it is thought advisable to return to the old formula of the Dublin Pharmacopœia, and keep it as that work directed in *loco frigido et obscuro* until required to be dispensed. As regards the more delicate tests, the authors do not claim to have thoroughly worked out the subject; but as far as they have gone the work appears to show that a mixture of the diluted acids, kept in a cool, dark place, will develop a minute quantity of potential chlorine equivalent to the lower oxide of nitrogen (NO_2) previously existing in the nitric acid, so minute in proportion as to require a very weak solution of thiosulphate for its determination.

A discussion took place, in which Messrs. Shacklady, Marsden, W. H. Lenton, and Dr. Symes took part. All spoke of the value of papers of this character, which entailed a large amount of work to their authors, and Dr. Symes mentioned the favour with which the local medical men a few years ago looked upon the suggestion that pharmacists should be in closer touch with the General Medical Council in the production of the Pharmacopœia. A hearty vote of thanks was accorded to the authors, and Mr. Cowley briefly replied.

WEST HAM AND DISTRICT CHEMISTS' ASSOCIATION.

CONCERT AT FOREST GATE.

Thursday, November 12, 1903, at the Earlham Hall, Forest Gate, Mr. Harold Mitchell in the chair. The hall was filled to its extreme capacity, and the efforts of the artists were enthusiastically applauded throughout the evening.

Mr. Mitchell, in proposing a vote of thanks, said that, on behalf of the Association, he wished to convey to the artists, who had in every case given their services gratuitously, their heartiest thanks for the very excellent way in which they had entertained them that evening. He wished to remind the members that on December 10 Mr. Glyn-Jones had promised to address the Association, and he cordially invited all chemists to be present on that occasion.

Mr. Matthews, in seconding, said he much regretted that the pharmaceutical calling was only represented in the programme by a member in his exhibition of sleight-of-hand, at which he must admit Mr. Morgan-Jones was a past-master.

DERBY AND DISTRICT CHEMISTS' ASSOCIATION.

ANNUAL DINNER.

On Wednesday, November 11, 1903, at the Derwent Hotel, Derby, Mr. C. D. Hart in the chair.

After the usual toasts to Royalty, proposed by the Chairman, and duly honoured by the assembly, Mr. F. P. Pembleton proposed the health of "Our President," referring in eulogistic terms to the good qualities of Mr. Hart, and his special fitness for the Presidential chair. This having been drunk with musical honours, Mr. J. A. Cope, in wishing success to the "Derby and District Chemists' Association," briefly sketched its history from the commencement, remarking that it first saw the light as the outcome of a visit of Mr. Glyn-Jones to Derby. The toast of "The Visitors" was suitably proposed by Mr. H. G. W. Dawson, and replied to by Messrs. Helford and Arnfield, the latter contributing to the enjoyment of the evening by a reading. The various speeches were interspersed by a capital musical programme.

PLYMOUTH, DEVONPORT, STONEHOUSE AND DISTRICT CHEMISTS' ASSOCIATION.

TRADE SECTION.—ANNUAL MEETING.

Wednesday, November 18, 1903, at 7, Whimple Street, Plymouth, Mr. F. Maitland in the chair.

The Secretary, Mr. S. A. Perkins, read the

Annual Report,

which was most satisfactory in every respect. The number of members has increased during the year, and now stands at forty-three. It having been felt that the rules should be thoroughly revised and brought up to date, a sub-committee was appointed with this object, and, after careful consideration, new rules were drafted, and passed at a general meeting, and the Secretary instructed to have them printed and forwarded to each member.

The Treasurer, Mr. F. A. Spear, presented his report, which showed a satisfactory balance, and it was unanimously adopted.

Other Matters.

There was considerable discussion on the "Cash on delivery postal scheme," but no resolution was passed.

Mr. R. F. Roper moved that the Section adopt a system of "sale and exchange." After explaining the scheme, it was decided to refer the question to the Committee to work out the details and report thereon.

The following were elected members of the Committee:—Messrs. F. Maitland, C. J. Park, S. A. Perkins, F. A. Spear, H. Davey, R. F. Roper, F. A. Goodwin, J. Barge (*ex-officio*).

PRACTICAL NOTES AND FORMULÆ.

Cherry Blossom.

Essence of white heliotrope, 6 fl. oz.; essence of vanilla, 1 drachm.

Princess Bouquet.

Spirit of rose, 1 pint; extract of violet, 30 fl. oz.; extract of jasmin, 30 fl. oz.; extract of tuberose, 21 fl. oz.; tincture of orris, 5 fl. oz.; essence of vanilla, 3 fl. oz.; extract of cassie, 20 fl. oz.; extract of rose, 40 fl. oz.; extract of orange, 6 fl. oz.; essence of musk, 4 fl. oz.; essence of ambergris, 2 fl. oz.; oil of French geranium, 50 minims; oil of patchouli, 10 minims.—*Spatula*, **9**, 410.

Ess. Bouquet.

(1) Otto of rose, 4 minims; oil of neroli, 2 minims; essence of musk, 40 minims; extract of jasmin, 5½ fl. oz.; tincture of orris, 8 fl. oz.; alcohol (90 per cent.), to make 80 fl. oz. (2) Oil of neroli, 15 minims; oil of lemon, 1 drachm; oil of bergamot, 30 minims; extract of cassie, 1 fl. oz.; essence of ambergris, 1 fl. oz.; tincture of orris, 1 fl. oz.; spirit of rose, 8 fl. oz.; alcohol, 90 per cent., 5 fl. oz. (3) Oil of bergamot, 2 drachms; oil of lemon, 1 drachm; tincture of ambergris, 1 fl. oz.; tincture of orris, 2 fl. oz.; spirit of rose, 5 fl. oz. Mix and filter with French chalk. (4) Lavender oil (Mitcham), 30 minims; oil of neroli, 8 minims; otto of rose, 30 minims; oil of bergamot, 24 minims; essence of musk, 2½ drachms; essence of ambergris, 5 drachms; alcohol, 90 per cent., 8 fl. oz. Mix. The spirit of rose in the above is prepared thus:—Otto of rose, 2 drachms oil of rose-geranium, 1 drachm; alcohol (90 per cent.), 20 fl. —*Spatula*, **9**, 411.

LEGAL INTELLIGENCE.

Pharmacy Act, 1868.

The Glasgow Prosecutions.

On Thursday, November 12, 1903, in the Summary Criminal Court, Glasgow, as briefly reported in last week's issue of the *Pharmaceutical Journal* (see p. 722), Sheriff-Substitute Boyd disposed of a number of prosecutions at the instance of the Registrar of the Pharmaceutical Society of Great Britain against unqualified assistants to doctors and chemists.

Mr. Peter Morison, jun., S.S.C., Edinburgh, appeared on behalf of the Society, while the majority of the respondents had agents in attendance to appear for them.

David McNicol, assistant in the shop of Dr. Thomas, 121, Main Street, Tullcross, admitted having sold a quantity of laudanum on September 16.

Mr. D. M. Alexander, writer, on behalf of McNicol, held that the offence was a technical breach of the Act. He sympathised with the object of the Act, which was to secure the safety of the public in the dealing with poisons, and the desire of the Pharmaceutical Society to use every legitimate means to see that poisons and other drugs were only sold in shops of people who held the necessary certificate. A doctor, especially one in a small country place, was bound to keep poisons among his drugs for the purpose of prescriptions, and if there were any systematic attempt to deal in the business of a registered pharmaceutical chemist one could understand real backbone behind a prosecution, and expect some real good to be gained by it. But there was a difference when they had, as in the case before the Court, a doctor in a small country place, who was the usual dispenser of poisons, and who, being absent on a visit to a patient, left in charge the respondent, who had over thirteen years' experience in the administration of drugs. To this young man one day there comes a lady, who asks for a little laudanum. The respondent asks the purpose of the laudanum, and is at once told that it is for toothache. Thereupon, to relieve this young lady's apparent distress, he sells her one pennyworth of laudanum, and for that he was brought there and prosecuted under the Pharmacy Acts. While he (Mr. Alexander) sympathised with the object of the Act, and the object of the prosecutor in having the Act properly administered, he must take leave to say that he far from sympathised with the prosecutor's method of getting offences. That one should be not only trapped into a breach of the Act, but should be trapped by false representations on the part of the agents of the Society, would not commend itself to any Court. While this young man undoubtedly was induced by representations made to him to sell one pennyworth of laudanum, he submitted that it should be treated as a technical breach of the Act, and dealt with as such.

Mr. Morison, on behalf of the Society, remarked at the outset that as there were a number of other cases of a similar nature, his remarks in the present case would apply to them all. His Lordship was aware that it was very necessary, in the interest of the public, that the restrictions and directions imposed by statute should be strictly enforced in regard to the sale of scheduled poisons. There was no place in the country where the same glaring and persistent offences against the Act took place than in the town of Glasgow. This town, by a long way, led, and his Lordship had often in that Court commented upon the fact that these prosecutions had been rendered very frequent in the city. He thought it was altogether vain for any person, especially a servant of a doctor, to come forward at this stage and say he had committed only a technical breach of the law. His information was that the respondent asked Mrs. McKellar, to whom the poison was sold, no question whatever; and he altogether dissented from the statement made by Mr. Alexander as to the methods of the Society, or their agents. The only way to put down these illegal sales was to make the penalty an exemplary one, and he would ask his Lordship to impose the maximum fine. There was the less excuse for these offences in doctors' shops, proceeded Mr. Morison, because in the year 1901 a number of prosecutions took place in this town, with the result that a number of doctors—he thought eight of them—were brought before the Medical Council. And the Medical Council passed a resolution, which was sent to every member on the Medical Register, and published in the public prints. The resolution declared that the practice whereby medical men, under cover of their medical qualifications, enabled unqualified assistants to sell scheduled poisons, and so to commit breaches of the law, would be regarded as infamous conduct in a professional respect. When the promulgation was made it was represented to him that reasonable time ought to be allowed the doctors in Glasgow who kept open shops to set their houses in order. He advised the Registrar that that was a reasonable thing. They had waited two years, and this was the first case since 1901 where an unqualified assistant of a doctor had been prosecuted, and there was no excuse whatever, at this time of the day, for a medical man, not only covering those unqualified assistants who were breaking the law, according to the information of the Society, every day, but were really acting in defiance of the disciplinary body to which they were subjected. He thought that the Society had acted with a great amount of reserve in waiting so long before instituting these prosecutions.

Mr. Alexander said that it was only fair to the respondent's employer to say that he had given McNicol strict injunctions not to sell anything that would bring him within the Act, and that what was done by respondent chanced by his having been taken off his guard by the representations of this woman.

The Sheriff said he could not take the view of Mr. Alexander that this was a technical offence. It was an actual offence, and the accused must answer for that. On the other hand, he thought he would not be justified, under the circumstances, in imposing the maximum penalty, as Mr. Morison had suggested. He thought something less might meet the case, on the ground that this was, apparently, the first attempt on the part of the Society since the notice by the Medical Council had been promulgated in 1901, to put down this practice, which, he quite agreed with the Society, was a nefarious one. He was glad that the Society had acted moderately in allowing sufficient time to lapse. He thought that the Society should be supported, and have it made quite clear that any infringement of this Act would be firmly put down in Glasgow. He was willing to hope that this warning would be taken, and, in that hope, he would limit the fine to £1 10s., with £1 2s. 6d. of expenses—£2 12s. 6d. in all. It must be clearly understood, added his Lordship, that the Court would deal smartly with any other offence.

George Annan, assistant in the shop of Dr. Rankin, 16, George Street, pleaded guilty to having, on September 19, sold a quantity of laudanum.

Mr. Alexander Russell, writer, stated that accused had ten years' experience in dispensing drugs. He came to his present employer five months ago at a salary of 25s. per week. He was distinctly and repeatedly told that upon no account was he to sell any poisons or drugs. The doctor had three different consulting hours per day, during which time he dispensed all the drugs which he prescribed for patients. In the intervals between these hours the accused was left in charge. The doctor did not sell more than 5s. worth of drugs in a day. The shop which was in a poor locality at the corner of High Street, was an old-established one. It was a distinct convenience to the locality, and the class of people who came about it were of the poorest. The lady detective whom the Society had engaged was quite an attractive-looking woman, and the accused was drawn off his guard, and sold her two pennyworth of laudanum. It was a technical more than an actual breach of the Act. He asked his Lordship to admonish the accused, who had now been dismissed, and a qualified assistant put in his place.

The Sheriff remarked that he did not see any ground for distinction in the case over the previous one, and imposed the same penalty of £2 12s. 6d., including expenses.

Margaret McBride, assistant in the shop of Dr. Joseph Green, at 133, Castle Street, admitted selling, on September 16, a quantity of laudanum or tincture of opium.

Mr. James Stewart, writer, on behalf of the respondent, said all he had to point out in the case was in connection with the methods of getting a breach. In this girl's case Mrs. McKellar had come on more than one occasion before the act libelled was committed to the shop, and made certain purchases, with the view of ingratiating herself with the girl. On the third occasion she came and made a purchase, and then asked for two pennyworth of laudanum. The girl refused to give her it, whereupon Mrs. McKellar said she could get it on the other side of the street any time she liked. The girl was taken unawares, and consented to give her one pennyworth. He would like to mention that the employer gave the girl strict injunctions not to sell any poisons, and to prevent a recurrence he had put these drugs under lock and key, so that this would not occur again. It appeared to him that if this very bad practice was a common one in Glasgow, it was a singular commentary that the Society should make an attempt to get cases by means of this kind. He asked his Lordship to distinguish it from the other cases, and impose a small penalty.

Mr. Morison pointed out that it was not the practice of the Registrar at all to seek chance sales. In no case did the Registrar act unless a complaint was made. The only way to get hold of people who were breaking the law was to take detective methods. Unless a sale was got they could not prosecute. They did not act unless a particular complaint was made.

A fine of £2 12s. 6d., including expenses, was imposed.

William Stoddart, assistant in the shop of J. McCowan, chemist, 141, Garogad Road, pleaded guilty to having, on September 16, sold a quantity of laudanum or tincture of opium.

Mr. Morison: This is a chemist's assistant, not a doctor's—the only difference in the case.

A fine of £2 12s. 6d., including expenses, was imposed.

Janet McGuire, assistant in the shop of J. McCowan, chemist, 49, Alexandra Parade, admitted having, on September 16, sold a quantity of laudanum.

She was fined £2 12s. 6d., including expenses.

Hugh Thomson, assistant in the shop of William Thomson, chemist and druggist, 8, Partick Mansions, admitted having, on October 19, sold a quantity of chloroform liniment.

An agent stated that accused was a man who had been for eleven or twelve years a chemist's assistant, and was on the eve of being qualified. There was no danger here.

A fine of £2 12s. 6d., including expenses, was imposed.

William Sievwright, assistant in the same shop, admitted having, on October 21, sold a quantity of chloroform liniment.

An agent pointed out that one assistant in the shop was proceeded against one day, and forty-eight hours later another assistant was charged.

A fine of £2 12s. 6d. was imposed.

George Robertson, assistant in the shop of Drs. Greig and Glen, at 466, Duke Street, admitted having, on September 16, sold a quantity of laudanum.

A fine of £2 12s. 6d. was imposed.

John Rae, assistant in the shop of William Thomson, 9, Rokeby Terrace, pleaded guilty to having, on August 13, sold a quantity of chloroform liniment.

A fine of £2 12s. 6d. was imposed.

John Tait, assistant in the same shop, admitted having, on August 27, sold a quantity of chloroform liniment.

Accused explained that the offence was committed in the absence of Mr. Thomson, who was on his holidays.

Sheriff Boyd: How long were you in charge of the shop?

Accused: About three weeks.

Sheriff Boyd: And you are not qualified?

Accused: No.

Mr. Morison: He is attending classes now, but had no qualification at the time of the sale.

Sheriff Boyd: This must have been done with the connivance of the owner.

Mr. Morison: One would have expected a chemist to have avoided this.

The Sheriff remarked that he was considering the question whether he ought not to increase the penalty in this case. Accused, however, had been frank, and the seriousness of the case was apparent to him. In the hope that he would take it as a warning—but he must at the same time feel that he was being dealt with very leniently—he would make the fine the same as the others—£2 12s. 6d.

Joseph Boyle, carrying on business under the name or style of J. and R. Rodman, chemists and druggists, 285, Duke Street, was charged with three offences under the Act—(1) selling opium, (2) keeping an open shop for retailing poisons, and (3) using the title "chemist," he not being a registered chemist and druggist.

He pleaded guilty to all the offences.

Mr. Morison stated that the accused was unqualified, and for a long time he was an assistant in the employment of J. and R. Rodman, who were chemists.

Accused: I was with them for twenty-five years.

Proceeding, the Agent for the Society said that Boyle purchased their business, and although not qualified, he continued to carry on the business under the old name and keep open shop. He was liable in a penalty of £5 for each offence.

A fine of £1 for each offence, with £1 2s. 6d. of expenses—£4 2s. 6d. in all—was inflicted.

Sale of Food and Drugs Acts.

Cinnamon.

On Monday, November 9, 1903, in the Aberdeen Sheriff Court, J. H. Findlay, grocer, New Byth, King Edward, was charged with having on October 31, by the hand of his daughter, supplied Inspector Bruce with ¾ lb. of an article which was not of the nature, substance, and quality of cinnamon demanded. It was alleged that the article sold contained 11·2 per cent. mineral constituents, being an excess of 5 per cent. Accused pleaded guilty.

Mr. Aitken stated on behalf of the accused that the cinnamon was ordered in the ordinary way, but the invoice bore the name of cassia, which the accused understood was synonymous with cinnamon. The girl in the shop sold the article, and had Mr. Findlay himself sold it it would have been at a lesser price.

After hearing the Procurator Fiscal, the Sheriff imposed a fine of £3, including expenses.

Cream of Tartar.

On Friday, November 6, 1903, at Bournemouth, the Liverpool Chemical Company, Limited, was summoned by Inspector Christie for having given a false warranty. Mr. H. Trevanion appeared for the company.

Mr. Rodgers conducted the prosecution, stating that proceedings arose out of a case before the Bench on October 13 last, in which Alfred Thrift, grocer, Southcote Road, was summoned for selling cream of tartar not of the nature and quality demanded. Defendant then relied on a warranty, and was acquitted. Proceedings were now taken against the wholesale firm.

It appeared from the evidence that a sample of cream of tartar was shown upon analysis to be adulterated by the addition of calcium sulphate and other ingredients, while the warranty supplied to Mr. Thrift by the defendant company represented that the cream of tartar forwarded by them was of full strength (98 per cent.) as laid down by the British Pharmacopœia. The defendants supply cream of tartar in different grades, and it was stated by Mr. Thrift, while under cross-examination, that the defendant company (after he had informed them that the sample had been taken) wrote saying that he had received a keg of "patent" phosphate cream of tartar in error, and requested him to return the same. Mr. Trevanion pleaded that the defendants had sent the wrong article in error, and expressed regret that the mistake should have occurred.

The Mayor said the Bench felt that the public must be protected against these mistakes. The defendant company would have to pay £10 and costs.

High Court of Justice.—Chancery Division.

A Trade-mark Action.

On Monday, November 16, 1903, before Mr. Justice Kekewich, Mr. Sebastian, on behalf of the plaintiffs in the action of Christy *v.* Tipper, applied that the date of the hearing of the action might be fixed for a day when his witnesses from Scotland and America could attend.

His Lordship thought that the time had not yet arrived for making any order.

A Saccharin Action.

On Tuesday, November 17, 1903, before Mr. Justice Farwell, Mr. A. R. Kirby, appearing for the Saccharin Corporation, moved for judgment in default of defence in this action. He said his clients had brought this action to restrain the defendant (Mr. Monnet) from competing with the plaintiff company in the manufacture of saccharin. The defendant had been a party in previous proceedings, and on the hearing an injunction had been granted against him till the trial.

His Lordship asked if the defendant appeared on this occasion.

Mr. Kirby was not sure that he would, but they had a letter from him to the effect that he would concur in any steps that might be taken to make the injunction perpetual. The position was this. There were two companies formed for the manufacture of saccharin—one in France and one in London—and litigation ensued between them, which ended in a compromise, the terms of which were embodied in an agreement, dated April, 1897, the parties to which were the directors of the two companies; and Mr. Monnet was a director of the French company. It was then agreed to register a new company—that of the plaintiff's—and to sell to it the goodwill of the French company, it being provided that so long as the new company made certain payments, the French company should not manufacture or sell any saccharin, or engage in any business which might compete with the plaintiff company in Great Britain or the Colonies.

His Lordship, remarking that the order asked for seemed to be right, granted it accordingly.

A Bovril Action.

On Friday, November 13, 1903, before Mr. Justice Joyce, Mr. R. Younger, K.C. (Mr. Waggett with him), moved for an injunction to restrain Mr. McPhail, of the White Star Hotel, Rainford Gardens, Liverpool, his servants and agents, from supplying, selling, or offering for sale as Bovril any liquid preparation of meat which was not of the plaintiffs' manufacture, or in any manner representing or passing off any liquid preparation of meat not of the plaintiffs' manufacture, as and for the goods of the plaintiffs. The learned counsel stated that the evidence showed that on three separate occasions when applications were made for cups of Bovril, defendants served the customers with a preparation of a rival manufacturer, without saying that he was doing anything but selling Bovril. Immediately above the counter the word "Bovril" was written. It was a serious case of passing off, and the plaintiffs must have suffered from it. Defendant did not justify what had happened, and he was willing to submit to a perpetual injunction and to pay the costs, plaintiffs waiving any account of damages.

Mr. Higgins, for the defendant, consented to the order and with costs.

Mr. Justice Joyce made a perpetual injunction.

County of London Sessions.

Charge of Theft.

On Friday, November 13, 1903, at Clerkenwell, before Mr. Loveland Loveland, K.C., a man named Robert Dibb surrendered to his bail to answer an indictment for having stolen a number of bottles of scent and a quantity of soap, the property of the Crown Perfumery Company (Limited).

The defendant had been in the service of the prosecutors, and it was alleged that he had been stealing his employers' goods and selling them to friends of his own. He went into the witness-box and swore that all the goods which he sold had been purchased by him from the prosecutors, under a system by which they allowed persons on their staff to buy from them at less than the ordinary retail price.

The jury acquitted the defendant.

Receiving Stolen Pills.

On Thursday, November 12, 1903, and the two following days, before Mr. McConnell, K.C., Chairman, James Lloyd Davies, chemist and druggist, recently carrying on business as Thomas and Co., Mare Street, Hackney; Arthur Levy, general dealer; and William Fordham, traveller, were charged with feloniously receiving 3,468 boxes of Beecham's Pills, 2,274 boxes of Dr. Williams' Pink Pills, and 1,260 boxes of Scott's Liver Pills, the property of the Co-operative Wholesale Society, Limited, of Leman Street, E., well knowing them to have been stolen.

Mr. Chas. Mathews was counsel for the prosecution, while Fordham was represented by Mr. Whipple and another, Levy by Mr. Lincoln Reed, and Davies by Mr. E. Marshall Hall, K.C., M.P., and Mr. Curtis Bennett.

The prosecuting Society deals only wholesale, their customers being other co-operative concerns. The case put forward by the defendants was as follows: For some time Davies had advertised in trade journals all sorts of proprietary medicines for sale at a price below or the same as the wholesale one. When Detective-inspector Divall and Detective-sergeants Wensley and Lee visited him, he said he sold one sort at 3d. below what he paid for them, simply as an advertisement. The police, however, searched the stock, and seized a large quantity of proprietary pills which it was said had been stolen from the prosecutors. Davies afterwards told Inspector Divall that he had purchased them as a job line from a man named "Peake," who turned out to be Fordham. The latter, upon being questioned, said he had only sold the pills on commission for Levy, who maintained that he had received them from another man for a bad debt. All denied any knowledge that they were stolen.

A number of witnesses were called to identify the pills on behalf of the respective manufacturers. Fordham and Davies gave evidence on their own behalf, but except for several witnesses to character, Davies called no witnesses on his behalf. On the advice of his counsel, Levy did not go into the box. An incident of the evidence was a short passage between Mr. Marshall Hall and a juror. When the former was discussing the intrinsic value of certain of the pills, which, he said, was very low, apart from the fictitious value due to advertising, the juror said that to enter into that question was a waste of time.

Mr. Whipple having addressed the Court on behalf of Fordham, Mr. Charles Mathews, on Saturday, made his closing speech for the prosecution. He commented on the very irregular system of book-keeping on the part of Davies, who had not made any entry of the purchase or sale of any of the pills. Moreover, slip-labels had been pasted on the boxes, apparently with a view of concealing the distinguishing mark put on the boxes by the makers.

Mr. Lincoln Reed having spoken on behalf of Levy,

Mr. Marshall Hall addressed the jury in favour of Davies. There was no evidence, he said, that Davies knew the pills to have been stolen. In fact, he had paid by cheque, and had put his slip-labels on the boxes, showing that there had been no attempt at concealment. Davies had been accustomed for four years to buy goods, such as combs, from Fordham, who, as far as he knew, was a very respectable man. Chemists, unfortunately, were often sundriesmen now. With regard to the price at which the pills were bought, they knew, in these days of keen competition, how reasonable a thing it was that Beecham's Pills might be offered wholesale at 8s. 6d. a dozen boxes. The tendency was always, when a market was flooded with a large supply, for the price to come down to a figure approaching the intrinsic value, which, in this case, as he had said before, was very small. It was that point which he had wished to make when a juror had interposed. The weakness of the case for the prosecution was shown by the fact that they had that "past-master in the art of theatrical advocacy—Mr. Mathews," straining every nerve to make the case look as black as possible, while the prosecution had been unable, with all their energy, to find anything to the discredit of Davies' character in his antecedents. Davies, unfortunately, was an "arrant moral coward," and had not told the truth throughout, but there was no reason to believe that he knew the pills to have been stolen. Moreover, his whole future career as a chemist was ruined if they found him guilty.

After consideration the jury convicted all the prisoners, but recommended Fordham and Davies to mercy.

Sentences were postponed.

It has subsequently been stated in the Press that the case was only saved from a very sensational end by the alertness of the prison officials. In the course of the customary searching of prisoners who surrendered to their bail, the warders found concealed about Davies' person a phial of poison. Dr. Scott, of Brixton Gaol, was at once telephoned for, and he, it is understood, declared that the poison was prussic acid, and of sufficient quantity to kill several persons.

Davies was kept under close surveillance in the cells, and also in the van on its way to Brixton Prison.

Aberdeen Police Court.

Shebeening.

On Friday, November 13, 1903, before Baillie Meff, William Duffus, chemist, was charged with having, on the previous Sunday, in the shop occupied by him in Spital, trafficked in whisky or other excisable liquors without having a certificate. A previous conviction of shebeening was recorded against accused, who pleaded not guilty.

James Milne, scavenger, Leadside Road, stated that on Friday, he was passing along Spital a little after twelve in the morning, when he met two men under the influence of drink. His attention was directed to the men by one of them saying to the other, "We'll awa' and get twa pints." The men then entered the druggist's shop. He (witness) stood up at the door of the shop, and he noticed that there was a woman in the shop. The two men went into a side place off the shop, and the woman followed them with two pints of Bass. At least, he noticed that there were Bass labels on the bottles.

Other evidence having been given, Detective Cameron stated that accused's place was by habit and repute a shebeen. About half-past twelve on Sunday he saw Duffus pour out glasses of whisky for two men named Masson and Davidson. Detective Smith and he then entered the shop, and charged Davidson and Masson with drinking in a shebeen. Davidson replied that the whisky was his. They then searched the shop, and found two pints of whisky, two pints of stout, and seven pints of Bass. They afterwards charged Duffus with trafficking in excisable liquors.

The magistrate found the charge proven. It was quite evident that the place was a shebeen. It had been found to be so, and accused had been punished recently. On the previous occasion accused had been fined £14. Accused would now have to pay £15, with 32s. 6d. of expenses, and, failing payment, he would have to undergo two months' imprisonment.

Blackburn County Court.

Claim by Unregistered Dentists.

On Monday, November 16, 1903, Messrs. J. B. Heenan and Company, artificial teeth manufacturers, Eanam, sued Councillor J. T. Duckworth, of Blackburn, for five guineas, the price of a set of false teeth supplied in April last. Mr. H. Backhouse appeared for the plaintiffs, and defendant was represented by Mr. H. Duckworth.

Mr. Duckworth took a preliminary objection under Section 5 of the Dentists Act, 1878, that the plaintiffs, not being registered dentists, could not recover.

The case for the plaintiffs was that the teeth were supplied to defendant's order, that he did not pay for them at the time, and that he said he would call a few days later. He did not call, however, and when seen he complained that they did not fit satisfactorily. Plaintiffs had repeatedly offered to make them right, but he had never been to their rooms with the teeth since.

For the defence, Mr. Duckworth urged that Heenan and Company, not being registered dentists, were not entitled to recover any fee for a dental operation. The Dentists Act was intended to protect fully-qualified men, and prevent such as the plaintiffs from carrying on the business of dentists by not allowing them to recover their fees,

Evidence as to the teeth not fitting properly was given by Mr. J. T. Duckworth (plaintiff) and Mr. F. W. Bromley, a registered dentist, of Darwen. In reply to Mr. Backhouse, the latter witness said he was not aware there was a good deal of feeling amongst registered dentists, of Darwen, against the plaintiffs. He was not aware that Mr. Shorrock had gone so far as to send out circulars against them.

Judge Coventry said it was clearly laid down in the Dentists Act that a person not being a registered dentist was not entitled to recover fees for "operations." The word "operation," he considered, meant a scientific or surgical operation, and the making of teeth, which were sometimes supplied ready-made, could not be regarded as such an operation. There was, however, certain work done by the plaintiffs in trying to make the teeth fit which might be regarded as an operation, and this the defendant was not entitled to recover. He assessed the value of this work at a guinea, and gave a verdict for the plaintiff for the amount claimed, less the guinea to which they were not entitled by reason of being unregistered dentists.

Mr. Duckworth asked for leave to appeal, which his Honour granted, with the remark that he thought a benefit would be done to the public if the case went forward.

POISONING CASES AND INQUESTS.

The deaths by poisoning reported during the seven days ended Wednesday, November 18, 1903, numbered eight:—

Poison.	Accident.	Suicide.	Uncertain
Belladonna Liniment	1	—	—
Carbolic Acid	1	1	—
Laudanum	1	1	1
Morphine	—	1	—
Potassium Chlorate	1	—	—
Total	4	3	1

Belladonna Liniment.—A man at Poplar died from heart failure, accelerated by a dose of belladonna liniment, which was taken in ignorance of its poisonous nature.

Carbolic Acid.—A man at Manchester committed suicide by taking carbolic acid, and a woman at Stratford took a draught in mistake for beer. Although in the latter case a local chemist promptly supplied olive oil and ipecacuanha, the dose of carbolic acid proved fatal.

Laudanum.—A woman at Wellingborough died from an accidental overdose of laudanum. Replying to a juror, the coroner is reported to have said at the inquest that there was no restriction on the sale of the drug, which in this instance had been bought from a branch of a limited company of so-called "cash chemists."——A man at New Marske committed suicide by taking laudanum.——An inquest was held on Thursday last, at the Police Station, Stanley, County Durham, touching the death of Esther Williams, a widow, forty-nine years of age, who died on the preceding Tuesday. Alexander Dunn, who described himself as a drug store proprietor, Front Street, Stanley, said that the deceased called at his shop about four o'clock on the previous Monday afternoon, and asked for five-pennyworth of laudanum. She said that she wanted it for a liniment, and had got the other ingredients required. He did not want to sell laudanum to her, so he told her that he had none in stock. William Clough, drug store proprietor, South Moor, said that he knew the deceased, but did not remember her ever being at his shop. The coroner asked the witness to examine the bottle, and the latter at once stated that it had been sold from his establishment, but not containing laudanum. There were, he thought, four labels on the bottle, one of which was his. The piece of red paper remaining on the bottle was, he believed, part of a poison label. He had no recollection of the deceased bringing the bottle to his shop, or of anyone coming to his shop recently and getting laudanum in a bottle similar to the one produced. The jury returned a verdict to the effect that death was due to the taking of laudanum, but whether with intention to allay pain or to commit suicide the evidence did not prove.

Morphine.—It now becomes necessary to include the death of Miss Hickman among those due to suicide by taking morphine.

Potassium Chlorate Pellets.—A child at Snaith, who had eaten twenty five-grain pellets of potassium chlorate, died from the effects.

Non-fatal Cases.—A great many of these are reported. A woman was charged at Bow Street on Tuesday with threatening to commit suicide. She had been to two chemists' shops to ask for arsenic, but in each case had been met with a refusal. Alcohol, carbolic acid, laudanum, and other "poisons" were the causes of the appearance in the police courts of various persons. A young man at Manchester has been charged with attempting to murder his illegitimate child by administering carbolic acid. According to the lay press, there is no little excitement in Brewood, Staffordshire, owing to a large number of cases of ptomaine poisoning having occurred as the result of eating brawn. The brawn is to be analysed.

SCHOOL AND COLLEGE NEWS.

School of Pharmacy Football and Athletic Club.—The annual smoking concert in connection with the above club will be held in the Crown Room, Holborn Restaurant, on Tuesday, December 15, and will commence at 8 p.m. precisely. Mr. J. Humphrey, Editor of the *Pharmaceutical Journal*, has consented to take the chair. It has been decided to devote a considerable proportion of the proceeds to the Benevolent Fund. For tickets, price 2s. each, apply to Mr. Alfred Wade, Hon. Sec. Concert Committee, 17, Bloomsbury Square, W.C.

Inter-Pharmacy Football League.—London College *v.* Pharmaceutical Football Club: Played at Acton, Saturday, November 14. The Square kicked off down hill, and for a time looked dangerous, but failed to score. Mid-field play occurred until the London forwards—then one man short—broke away with great speed and put in their first goal. About twenty minutes after the kick-off London's eleventh man joined them, and another goal was added to their credit before half-time. The passing of the Square forwards was good, but the London men showed greater speed and shooting powers, and ultimately won the match by six goals to nil. The goals were scored by Evans (3), Sherren (2), and Bollen (1).

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

Royal Photographic Society.—At a technical meeting on November 24, at 66, Russell Square, W.C., at 8 p.m., Mr. Theodore Brown will read a paper on "Direct Stereoscopic Projection."

Will.—Mr. W. J. Walsham, F.R.C.S., surgeon to St. Bartholomew's Hospital, and formerly a chemist and druggist, whose death was recently recorded in these columns, has left property to the gross value of £31,245.

Leeds and District Chemists' Association.—The annual dinner of this Association will be held at Powolny's, Bond Street, Leeds, on Thursday, November 26. Particulars may be obtained of Mr. F. C. Long, Headingley Pharmacy, Leeds.

Royal Geographical Society.—At an evening meeting, on Monday, November 23, 1903, in the Theatre, Burlington Gardens, W., a paper is to be read on "Recent Exploration and Economical Development in Central and Western China," by Lieutenant-Colonel C. C. Manifold. Sir Clements R. Markham, K.C.B., F.R.S., President, will take the chair, at 8.30 p.m.

Anti-Vivisection.—The persons who are wont to agitate against physiological experiments on animals, whether anæsthetised or not, will have received a timely lesson by the action in which Mr. Stephen Coleridge, a leader of the Anti-Vivisection movement, has been mulcted in £2,000 damages and the costs of a long trial for having libelled and slandered a respected professor.

Deficient Spirit of Nitre.—On Wednesdty, at Accrington, Richard Sagar Farnworth, of 70, Avenue Parade, Blackburn, was summoned for selling deficient sweet spirit of nitre. The certificate of the analyst showed that it contained less than half the necessary quantity of ethyl nitrite. The Bench fined defendant 2s. 6d. and costs, and advised him to get his stock in smaller bottles, and so avoid some of the evaporation.

The Usual Strength.—Under the Sale of Food and Drugs Acts, last quarter, samples of six kinds of drugs were taken in Staffordshire. Of nine samples of camphorated oil, two were deficient in camphor to the extent of 62 and 21 per cent. respectively. In one case the manufacturers of the oil were fined £10 and costs. The bottle in this instance was labelled, "Camphorated Oil. Three times the usual strength."

Chemist and Traveller.—On Saturday, the 13th inst., at Abergele, a man named Edwards, who had been employed by Mr. Owen Jones, chemist and druggist, as an agent for the sale of a proprietary cattle food, called "Ellis's Food," was charged by Mr. Jones with obtaining 15s. by false pretences. Defendant had produced to prosecutor an order for the food which was repudiated by the customer, and the action was to recover the commission paid by the prosecutor. The case was dismissed.

The Radium Treatment of Cancer.—The Paris correspondent of the *Times* writes:—At the last sitting of the Académie des Sciences, a communication was read from Dr. Biraud, of Poitiers, as to the treatment of cancer by the Röntgen rays. The cancerous nature of a malignant tumour, operated upon for the first time three years ago, was, it is said, clearly recognised on diagnosis by specialists. The new growth was subjected to a series of applications of the Röntgen rays, which have resulted thus far in a reduction of the tumour to one-fourth of its original size.

Robbing a Chemist.—A youth named Henry Hilks, employed by Mr. E. Wheeler, chemist and druggist, Bristol, was charged on November 10 with stealing £1 5s. from his employer's till. It appeared that between the previous Saturday night and Monday morning the money was taken from the till, and as the prisoner was seen loitering near the shop he was arrested. At first he denied the theft, but later he admitted entering the shop on the Sunday by means of a latch-key, and taking the money.—The Bench sentenced him to one month's imprisonment in the second division.

Glasgow University.—At a meeting of the Glasgow University Court on Thursday, November 12, Sir John Neilson Cuthbertson moved: "That as the building for the advanced chemistry department will shortly be ready for occupation, the Court advertise for a special lecturer to conduct courses in organic and physical chemistry at a salary of £400 per annum." He remarked that some people said the building was not very elegant, but he thought that when it was finished it would not look so bad. At all events, it would be the finest chemical laboratory in Scotland. What was proposed might at first involve a little risk, but he had no doubt it would be a step in the right direction, and for the credit of the University it would be worth making the experiment.—Sir James King seconded, and the motion was adopted.

Satisfactory Drugs at Birmingham.—The latest report of the Birmingham City Analyst, Mr. J. F. Liverseege, F.I.C., Ph.C., is in every way complimentary to the pharmacists in the city. Of ten samples of camphorated oil analysed during the quarter all were genuine. They were prepared with olive oil, and contained from 20·6 to 22·6 per cent. of camphor. Mr. Liverseege points out that the theoretical figure for camphorated oil, prepared according to the B.P., is 21·4 per cent. of camphor. None of ten samples of Friar's balsam was adulterated. The solid matter present amounted to 166 to 210 Gm. per litre. In each case a proper amount of alcohol was present. Four samples of tincture of iodine were also genuine. The quantity of iodine varied from 24·9 to 25·5 Gm. per litre, and the quantity of potassium iodide from 23·0 to 25·8 Gm. per litre.

A New Anti-Tuberculous Serum.—An important communication was read by Dr. Marmorek in Paris on Tuesday evening before the Academy of Medicine. According to Marmorek, the tuberculin of Dr. Koch is not the specific toxin of the tuberculosis bacillus. It is but a kind of stimulant, which, by reacting upon the bacilli, aids them to secrete another poison still more virulent—the true toxin, whose effects are powerfully pernicious. Thus, the poison being found, Dr. Marmorek allotted himself the task of discovering the antidote, which he believes that he has at last found by immunising first the calf and then the horse. It is the serum of the latter which constitutes the curative serum. After experimenting with this serum for nearly over a year, the doctor is convinced that he is on the road to success, although up to the present he has obtained no results in tuberculous meningitis. One advantage the serum possesses is that it is innocuous.

The Duty on Alcohol.—At the last meeting of the Manchester Chamber of Commerce the Chemical Section reported that the Association of Chambers of Commerce, at their March meeting in London, adopted the following resolution, moved by the Manchester Chamber:—"That the provisions of Section 8 of the Finance Act, 1902, requiring the payment of duty on imported pure spirit for manufacturing purposes at a rate equivalent to the difference between the Customs and the Excise duty on spirit, adds about 50 per cent. to the original value of such spirit, and that this addition places British manufacturers who use it in a position of serious disadvantage in relation to their Continental competitors, who are enabled to purchase it entirely duty free; and that representations be made to the proper governmental department with a view to the removal of this disadvantage." The Chemical Section of the Manchester Chamber proposed to take up the subject again, and to initiate such action as may be deemed best fitted to secure a removal of the disability set forth in the foregoing resolution.

Guardians and their Stock of Drugs.—Yarmouth Board of Guardians on November 11 considered a proposal that the salary of the medical officer should be increased to £250 a year, so that he could supply drugs, and that the doctor should have the use of the drugs in store at the workhouse. Several members objected to the proposal on the ground that it was a bad principle to permit the doctor to have the supply of drugs in his own hands.—The Chairman said the Board had no power to sell the drugs stored at the workhouse if the doctor did not take them. The stock was worth about £100.—Mr. Case explained that the proposal was in consequence of a long series of expensive drug bills.—Mr. J. M. Headley expressed the opinion that great economy would be effected in future. There was now a better check on the supply and distribution of drugs, and the doctor had suggested that some other list than that of Apothecaries' Hall should be adopted, with a tendency to reduce the drug bill.—Eventually the Board decided to continue to find the drugs, and to increase the doctor's salary by £25 a year.

A Possible Danger.—The Departmental Committee appointed by the Board of Agriculture to inquire into the working of the Fertilisers and Feeding Stuffs Act, 1893, sat on Tuesday and Wednesday. Evidence was given by Mr. J. Bowen-Jones, representing the Royal Agricultural Society of England; Mr. W. Ozzard, Mr. Christopher Middleton, and Dr. R. Shirra Gibb, representing the Highland Agricultural Society of Scotland. Some of these persons have been heard of before, and would, one may be sure, seize any opportunity of ventilating the familiar grievance that horticulturists are not qualified to sell poisons. It may be remembered that Dr. T. E. Thorpe is a member of this Departmental Committee. It is to be hoped that by now his eyes have been opened to a perception of the real nature of the alleged grievance of the Highland Agricultural Society with regard to poisonous fertilisers and the like. It would be a pity if this Committee should come to the conclusion that it is a part of its duty to grind the axe of any firm of horticulturists' sundriesmen which has been convicted, quite recently, of breaking the provisions of the Fertilisers and Feeding Stuffs Act, as well as of the Pharmacy Act.

Administration of the Sale of Food and Drugs Acts.—The annual report of the Local Government Board for the year 1902 shows that the number of samples analysed in 1902 was 72,321, an increase of 4,480 samples over the previous year. In London one sample was analysed for every 252 persons, and in the provinces one for every 515 of the population. In most cases, it is stated, the local authorities have become increasingly active in carrying out their duties under the Acts. 6,281 samples were certified as unsatisfactory, and legal proceedings were instituted in 3,556 cases. Penalties were imposed in 2,928 cases, amounting in the aggregate to £7,064 5s. 4d., excluding costs in most instances. There was one fine of £90, three of £50 each, one of £40, one of £30, one of £25, twenty-nine of £20, nineteen between £10 and £20, ninety-six of £10, twenty-nine between £5 and £10, and 326 of £5 each. In 164 cases the fine did not exceed 2s. 6d., seventy-seven being of 1s. and under. During the year the attention of the Secretary of State for the Home Department was drawn to the fact that local authorities complained of the inadequacy of the penalties imposed by Justices for breaches of the provisions of the Sale of Food and Drugs Acts, and he subsequently addressed a circular letter to clerks to the Justices of the petty sessional divisions throughout the country, asking that the matter might be brought to the notice of the Justices, in order that they might give special consideration to the question whether the penalties imposed in the cases coming before them were such as would be likely to deter offenders from repeating and other persons from committing the offence. Except in the case of sweet spirit of nitre, there was a lower percentage of adulterated drugs among all the samples examined. 2,353 samples of drugs were analysed, and of those 223 were found to be adulterated.

TRADE NOTES.

Chemists' Publishing Almanacs should send to Messrs. Southall, Bros. and Barclay, of Birmingham, for particulars concerning "Puritan" Marking Ink. This is an article which the firm is prepared to advertise in chemists' almanacs and annual price-lists. It is an excellent preparation, and its price is protected.

A Handy Set of Apparatus for the estimation of alcohol, urea, and ammonia is supplied by the Rebman Publishing Company, Limited, 129, Shaftesbury Avenue, London, W. This set of apparatus is a very ingenious contrivance for the application of the Barker Smith thermometric method, and consists of thermometer, tables, measure and phial, and the price is 6s.

Hetraline is a new derivative of hexamethylenetetramine, being, in fact, a dioxybenzolhexamethylenetetramine, containing 60 per cent. of hexamethylenetetramine. It crystallises in needles and, according to Dr. R. Ledermann, dissolves in hot water in the ratio of 1 : 4, and in cold water in the ratio of 1 in 14. It is quite stable in air, keeps well, and does not decompose until a temperature of 160° C. is reached. It has been successfully administered in cases of urethral disorders, and is likely to be largely prescribed. Fuller particulars and samples may be obtained from Messrs. Chas. Zimmermann and Co., 9, St. Mary-at-Hill, London, E.C.

"Pears' Christmas Annual" for 1903 is now ready for sale. It is a most readable and artistic production, and the following particulars give a good idea of the extensive character of the work entailed in its publication. Its circulation is said to be 500,000 copies, and the whole weighs 326 tons. Its distribution, etc., requires 700 horses—350 vans of two horses each. Packed one above the other, it reaches 7,104 ft. The surface of paper required is 534 acres. The pages and the pictures, placed in a line, are equal to 6,858 miles. The coloured plates alone, without the book, represent 25,300,000 separate pulls, and have taken one year to print. From beginning to end the whole has been done in the British Isles.

Hopogan and Ektogan are the names of two medicinal peroxides, for internal and external use. Chemically, hopogan is a peroxide of magnesium of high percentage, and consists of MgO_2 in combination with MgO. The therapeutic value of this compound depends on its capabilities of disengaging active oxygen when it comes in contact with readily oxidisable substances. Hopogan is an impalpable white powder, tasteless, odourless, and non-poisonous, and is prescribed in cases where increased oxidation in the tissues is required. Ektogan (ZnO_2) is for external application only, and has been found of great service in ulcerations and obstinate skin diseases. Samples of these preparations have been submitted to the *Pharmaceutical Journal*, and they are undoubtedly very fine pharmaceutical products. The British Druggists, Limited, 86, Clerkenwell Road, London, E.C., will be pleased to forward full particulars and samples for trial by medical men on application.

The "Mysteries" Almanack.—Certainly one of the most novel things in the way of chemists' illustrated almanacks that has ever been offered to chemists and druggists is issued by Mr. A. C. Wootton, Barrymore, North Finchley, London, N. Not only is the matter contained in the booklet most readable, but it is also entertaining and instructive. Without going into a detailed description of its contents, it might be mentioned that it tells the reader how to perform a number of simple and interesting experiments, which should prove a source of amusement for winter evenings. In addition, it contains a calendar of an interesting character, as well as advice concerning certain drugs, chemicals, and accessories retailed by pharmacists. The little book is profusely illustrated, and is well printed on best quality paper. It is the sort of thing which is sure to be preserved and constantly referred to and is an excellent means whereby the chemist can keep his name before his customers.

Sensitised Post-cards.—The demand for sensitised post-cards bearing Christmas greetings has prompted Messrs. Geo. Houghton and Son, Limited, to introduce 1s. packets of twelve post-cards with appropriate designs printed on the address side of the card, leaving the whole of the back for the photographic print. While referring to these cards, mention may be made of the "Marriott" post-card printing-frame, which has been introduced to facilitate the operation of post-card printing; also that Messrs. Houghton and Son have now a series of calendars, mounted on cards, provided with openings of various sizes, into which unmounted photos can be slipped in the usual manner, and are then very suitable for Christmas cards.

Seasonable Goods.—In a handy little illustrated price-list issued to chemists and druggists, Messrs. Bourne, Johnson, and Latimer, 34 and 35, Furnival Street, London, E.C., enumerate, with particulars as to terms, a list of articles which are in constant demand at this time of the year. Among these are several to which particular attention should be given, for this firm is able to supply them at exceptionally reasonable prices. Bronchitis kettles of various shapes and sizes, which can also be used as ordinary kettles, are goods about which readers would do well to obtain further particulars. Walter's hair soles, again, are articles the sales of which are increasing each winter; they are manufactured with horsehair, and keep the feet warm and comfortable; one customer writes to say that they are the best selling line he ever had. Foot warmers, hot water bottles, chest protectors, respirators, loin belts, inhalers, sprays, are among the other goods, and both the quality and price of these "sundries" should certainly meet wishes of customers, who should apply to the firm for a price-list.

Wright's Coal Tar Specialties have been before the public notice for nearly forty years, and every attempt has been made by the manufacturers, Messrs. Wright, Layman, and Umney, Limited, 48 to 50, Southwark Street S.E., to make their handling profitable, and they should be worth the attention of every retail pharmacist. The advertising of Wright's Coal Tar Soap has been extended very considerably during the last two years, and is very up to date. In addition to Liquor Carbonis Detergens and Wright's Coal Tar (toilet) Soap, the proprietors have also introduced, comparatively recently, Wright's Coal Tar Shaving Soap, Wright's Coal Tar Tooth Powder (Sapo Carbonis Detergent Dentifrice), and their very latest novelty is Wright's Coal Tar Shampoo Powder. This shampoo powder is packed in envelopes, seven in a box, to retail at 1s. The price is protected, and the profit on it is an excellent one. In order to introduce this to the notice of chemists, they are prepared to send three boxes—that is to say, twenty-one sample powders, to any chemist in business sending his card. The firm is also prepared to give very handsome show-cards to chemists for display, and full particulars of these terms for window display will be sent on receipt of request; these terms leave the chemist a profit of practically 40 per cent.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. Walter Hartle, chemist, of Hanley, has been elected a member of the Hanley Town Council.

Mr. N. C. Hewitt has taken over the business recently carried on by Mr. H. W. Pound, chemist, at Station Road, Harpenden

Alderman Lamb, chemist and druggist, last year's Mayor of Chatham, has been appointed Deputy-Mayor of the borough for the ensuing year.

Mr. Thomas Maddocks Phillips, chemist, Castle Square, Haverfordwest, has been chosen as High Sheriff of that town. Mr. Phillips is a Conservative in politics.

Mr. Walter Gibbons, pharmaceutical chemist, King Street, Manchester, has been appointed Senior Deacon of the "Manchester" Lodge of Freemasons, No. 2,554.

Mr. James John Anning has retired from the firm of J. J. Anning, chemist and druggist, of 145, Woodhouse Lane, Leeds. The business will be continued alone by his partner, Mr. Geo. Jackson.

Mr. J. R. Birkett, chemist and druggist, has signalised his appointment as Mayor of Morecambe by presenting a mayoress's chain to the borough. He has also given a cheque for £400 to the free library fund.

Mr. Arthur Neal, of Sheffield, who has frequently acted as solicitor for the Pharmaceutical Society in prosecutions at Sheffield under the Pharmacy Act, has been elected to the City Council of that town at a bye-election, the unsuccessful candidate being Mr. J. M. Furness, chemist.

AMERICAN NOTES.

(*By Our Special Correspondent.*)

A number of things of interest and importance have transpired in American pharmacy during recent weeks. Chief among them was the annual meeting of the National Association of Retail Druggists, held last month in Washington. Until within a year, the *modus operandi* of the National Association of Retail Druggists has been

The So-Called "Tripartite Plan."

By the terms of this arrangement the manufacturer, the jobber, and the retailer formed an alliance for the purpose of preventing the "aggressive cutter" from securing supplies. The cutter who refused to be good and join the ranks of the local branch association of the National Association of Retail Druggists was, in effect, blacklisted, and all three branches of the trade stood together in seeing that his lot was made a hard one.

Unfortunately, however, the tripartite plan has never proved quite so beautiful in practice as in theory. The dishonesty of human nature entered into the equation and changed the final results very markedly. A movement was consequently got under way a year ago to fortify the tripartite plan with what was known as "the direct-contract and serial-numbering method." The latter contemplated a contract between the manufacturer on the one hand and the retailer on the other, the jobber acting as the manufacturer's agent and passing the contract along to the retailer. By the terms of this contract the retailer agrees to sell the manufacturer's goods only at full printed prices, and if later on he sells any of them at less than the printed price he is then violating the contract and may be moved against in courts of law. The legal aspect of the plan won for it a great many admirers, and it came to be felt generally that here was a method of enforcing honesty on the wavering members of the three branches of the trade. One manufacturer (the Dr. Miles Medical Company) put the plan into operation a few months ago, and it has worked very satisfactorily.

The Washington Convention has incidentally given birth to a controversy which threatens to provoke floods of printer's ink during the next few months. This is not with reference to the cut-rate evil, but to

The Granting of Patents and Trade-marks.

For years American pharmacists have been dissatisfied with their patent and trade-mark laws. The general dissatisfaction was expressed last month by a special committee of the National Association of Retail Druggists, which called upon President Roosevelt, at the Executive Mansion, and urged him to insert a recommendation in his forthcoming message to Congress. The President was very cordial to the visitors, but intimated that their course was to see the Commissioner of Patents and the appropriate committees of Congress. The papers which the Committee left with Mr. Roosevelt were turned over by him to Patent Commissioner Allen, and since then the latter gentleman has issued an opinion which, from the standpoint of the National Association of Retail Druggists, is nothing less than startling. He attacks the National Association of Retail Druggists' position at every point, and shows most conclusively that (if the Commissioner truthfully depicts the American policy) the National Association of Retail Druggists will simply have to give up the fight.

Regarding patents, the chief contentions of the National Association of Retail Druggists were that they should not be given on the drug itself, but should be confined to processes of manufacture, thus avoiding monopolies which permit patentees or manufacturers to exploit the public to the limit; and, secondly, that foreigners should not be granted privileges in this country which are denied them in the country of their residence. Of course, the specific instance which the National Association of Retail Druggists had in mind was phenacetin. It is well known that this drug sells in Germany, or even in Canada, for about twenty-five cents an ounce, whereas the American druggist is made to pay $1 for it. This has always been a sore point in the United States, particularly in view of the fact that the monopoly had its parentage, not in America, but in a foreign country.

Replying to these objections, however, the Commissioner declared that it has been from the outset the American policy to give inventors absolute and exclusive rights in their inventions for a limited period (seventeen years), and then to throw them open to the public free from any restrictions whatsoever. This policy is expressed in the constitution itself, and has been supplemented over and over again by statutory legislation. The result has been that American invention, given this stimulus and this protection, has thriven remarkably; and the success of the system is the best argument in its favour. As for the objection that foreigners (the German manufacturers of phenacetin) are given patent rights in this country which they do not get in their own, Commissioner Allen declared that we can make no discrimination between foreign and domestic inventors or manufacturers. An International Treaty, concluded in Paris in 1883, and ratified by the President of the United States in 1887, binds each nation entering the agreement to accord to the citizens of any of the other nations all the privileges which it should grant by law to its own citizens. The Commissioner takes up other points at considerable length, but it seems scarcely necessary to mention them in this place. Suffice it to say that he repudiates the contention of the National Association of Retail Druggists, and does it with such determination that many leading pharmacists believe the cause will have to be abandoned. Meanwhile, we may confidently expect that all the orators and writers of the drug trade will jump into the arena during the next few months and wage mortal combat with Commissioner Allen.

The recent act of British chemists in perpetuating

The Memory of William Martindale

by the presentation of a marble bust to the Pharmaceutical Society has been noted with gratification on this side of the ocean. A similar event was witnessed here last month. A bronze memorial tablet of Dr Charles Rice was unveiled with appropriate ceremonies in the hall of the New York College of Pharmacy. Dr. Rice is, of course, known to British chemists as chief editor of the United States Pharmacopœia of the last three revisions, as a philologist of renown, and as a pharmacist of varied equipment. A few months ago prominent pharmacists gathered from all over the country at the unveiling of a monument over the grave of Dr. Rice—a monument purchased by contributions made in every State in the Union. This later tribute to the memory of so great a man, taken in conjunction with the earlier act, indicates the gratifying fact that American pharmacists do not intend to permit the memory of so distinguished a representative of their calling to sink into oblivion.

Great interest and concern have been aroused during the last two or three years over the fearful

Growth of the Cocaine Habit.

Beginning first among the illiterate negroes of the South, it is gradually spreading over the North like a terrible plague, and it calls eloquently for immediate and radical correction. Pharmacists are, of course, peculiarly involved. In every city there are always a few black sheep in the profession who pander to the cocaine trade, and bring disgrace upon their fellows. To punish these criminals, and to surround the sale of the drug with proper restrictions, has seemed to be a vital necessity; and anti-cocaine measures have been passed by a number of State legislatures. Most of these legislatures will soon be convening again in annual session, and the leading pharmacists of several States—States in which no laws have yet been enacted—are making preparations to introduce bills. In this connection it is interesting to note that the municipality of Chicago is thinking very strongly of passing an ordinance preventing the sale of carbolic acid except upon a physician's prescription. It seems that carbolic acid is used for suicidal purposes to a far greater extent than any other poison. So many instances have occurred in Chicago during the last year or two that the authorities are moved to take some action in the matter. The druggists of the city, however, are arraying themselves against the proposed ordinance. They argue that carbolic acid is used for a great many legitimate purposes, and that to surround its sale with so severe a restriction would be to hamper trade to an inexcusable extent.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

General Markets.

London, Thursday, November 19, 1903.

This has been one of the dullest weeks of the year as far as the markets in Drugs and Chemicals are concerned. The only cause to which this slackness can be attributed is the same which accounts for the general bad state of trade. The demand for consumption is, if anything, less than it was last week, whilst even speculators seem to be holding aloof for the time being. The cold weather is certainly creating a slight consumptive demand for a few articles which enter into the composition of winter remedies, but this has apparently not increased the volume of business. Contrary to anticipation, quotations for Cod Liver Oil come lower; but at present little information can be given with regard to the future movements of this article. Balsam of Tolu is dearer, this is said to be caused by the demand in America, where the stocks are small. Menthol is somewhat depressed, and quotations to arrive come lower. Quinine is also rather cheaper; whilst American Peppermint Oil seems rather easier, there seems little probability of the value decreasing, at any rate for the present. The price of Ergot has advanced since last week's sales.

ACID CITRIC.—1s. 0½d. per lb.

ACID TARTARIC.—English on the spot, 1s. 1d.; foreign, 1s. to 1s. 0½d.

ARROWROOT.—200 barrels St. Vincent were offered at Wednesday's sales, and all bought in.

BALSAM TOLU.—With inquiries from New York, and the consequent sale of some 30 or 40 cases, prices are now dearer. Good quality is quoted at 1s. 3d. in large tins, 1s. 4d. in small tins, and business has been done at these prices.

BISMUTH CARBONATE.—8s. 1d. per lb.; subnitrate, 7s. 4d.

BLEACHING POWDER.—English, £5 5s.

BORACIC ACID.—Crystals, 22s. 6d.; powder, 24s. 6d.

BORAX.—Crystals, 13s. 6d. to 14s. 6d. per cwt., according to quantity; powder, 15s. 6d. to 16s. 6d.

BROMIDES.—Unaltered.

CARBOLIC ACID.—Crystals, 39-40°, 5d.

CASTOR OIL.—Quiet. Belgian 1sts, £20 2s. 6d.; 2nds, £18 12s. 6d.

CINCHONA BARK.—The London auctions were held on Tuesday. The total of all descriptions offered only amounted to 1,400 packages, more than half of which consisted of Calisaya and African quills. There was a good demand, and the bulk sold at dearer rates, the average unit being 1½d., as compared with 1 7/16d. at the previous sale. The result shows an advance of ⅛d. on the last Dutch sale.

CITRONELLA OIL—Is dearer; 11¼d is the c.i.f. price.

CLOVES.—Fair bright, picked Penang sold at 10¾d. at Wednesday's sales; for fair Zanzibar 7⅜d. to 7½d. was paid. The receipts of Zanzibar during the first half of October were 1,300 bales, as against 6,700 bales during the corresponding period of last year.

COCAINE.—13s. 6d. to 14s. per oz. for the hydrochloride, according to quantity. For the pure alkaloid the price is 16s. to 16s. 6d.

COCOANUT OIL.—Ceylon spot, £25 10s.; Cochin spot, £30 10s.

CODEINE.—The quotations are as follows:—8s. 11d. per oz. for the pure alkaloid, 7s. 11d. for the muriate and sulphate, 7s. 1d. for the phosphate, with a slight reduction for large quantities.

COD-LIVER OIL—Is lower. It is difficult to give a definite quotation, but good brands can be had from 460s. upwards. A quotation received this week from Norway comes lower than this even.

ERGOT.—The price has again advanced, and there is now nothing to be had on the spot under 1s. 6d.

GLYCERIN.—68s. per cwt. for ½-ton lots.

IODIDE OF POTASSIUM.—The convention price is unchanged at 8s. 9d. per lb.

IODINE.—9s. 9d. to 10s. per lb. for the resublimed, according to quantity.

IODOFORM.—11s. 8d. per lb. for the pure crystals or powder.

MENTHOL—Is being depressed; it can be bought at 21s for Kobayashi, in five case lots, and the price is also lower for shipment.

MERCURIALS.—Calomel, 2s. 8d.; corrosive sublimate, 2s 4d.; red precipitate, 2s. 11d.; white precipitate, 2s. 11½d.; mercuric sulphate, 2s. 4d. per lb.

MORPHINE—Is unchanged at 4s. 6d. to 4s. 8d. per oz. for the hydrochloride.

OPIUM—Is flat. There is neither business nor change in price to report.

OXALIC ACID.—2⅝d. to 2⅞d., delivered free London.

PEPPERMINT OIL.—Business has been done at 13s. 6d. for H.G.H. on the spot. To-day there were a few small lots offered for less than this, but the price for New York comes at about 14s.

PEPPER, PIMENTO, CAPSICUMS, NUTMEGS, MACE, and **GINGER** were all slow of sale at Wednesday's Spice auctions, and values are practically unchanged.

PODOPHYLLUM ROOT.—There are only a few bales on the spot, for which about 60s. is asked. The small stock in the States seems to be concentrated in one hands, and 52s. 6d. c.i.f. was the price eight days ago.

QUICKSILVER.—£8 7s. 6d.

QUININE—Is rather easier in second hands, and small sales have been made at 1s. 0¼d. for December.

SAFFRON—Still continues very firm, and although those who bought in the early part of the rise are induced to take their profit at about 37s. 6d., finest new cannot be bought to arrive under 40s.

STAR ANISEED OIL—Is firm, and tending higher; 4s. 9d. to 4s. 10d. are the prices quoted.

PATENTS AND TRADE MARKS.*

New Patent Applications.

PROCESS AND APPARATUS FOR THE THERAPEUTIC TREATMENT OF THE HUMAN BODY BY ABSORPTION THROUGH THE SKIN (No. 26,953, of 1902).—J. Lütje, Gr. Bergstrasse 244¹, Altona, Germany. The object of this invention is to increase the capacity of medicaments for transference through the intact skin into the blood, by inclosing the parts of the body which are to be subjected to treatment in an air-tight chamber, and then raising the pressure within the said chamber, whereby the transference of the medicaments through the skin is promoted. The absorbent capacity of the skin may at the same time be increased by heating same, so as to open the pores as much as possible. Suitable apparatus for carrying this process into effect is described and shown both for local treatment and for the treatment of the whole body.

IMPROVED VACCINE AND PROCESS FOR PURIFYING THE SAME (No. 19,356, of 1903).—H. H. Lake, 45, Southampton Buildings, London, W.C. (communicated by Parke, Davis and Co., Campau Avenue, Detroit, Michigan, U.S.A.). In carrying out this invention the vaccine is taken from the animal in the ordinary way, usually including the scab, pulp, or lymph, or any one of them as may be desirable, and thoroughly triturated. To the triturated vaccine is then added a small percentage of tri-chlor-tertiary-butyl alcohol, or its solutions, adding any desired quantity, but usually 1 per cent. of the weight of vaccine is found sufficient. This mixture is then allowed to stand long enough to kill the foreign germs. This has been effected in four hours, but it is customary to allow it to stand twenty-four to forty-eight hours.

Note.—Opposition to the grant of any of the above-mentioned patents must be filed at the Patent Office, on or before December 28, 1903.

New Trade Mark Applications.

"**DEXA,**" for an ointment for human use, by A. Stewardson, 17, Elswick Road, Newcastle-on-Tyne. 257,526.

"**DARLING'S INFALLIBLE EMBROCATION**" label, for an embrocation for human use, by J. Darling, Oaklands, Addlestone, Surrey. 251,580.

"**DIMILO,**" for an ointment for human use, by J. Stewart, School House, Port St. Mary, Isle of Man. 257,650.

"**LITTLE MARY,**" for chemical substances prepared for use in medicine and pharmacy, by F. Palmer and Co., 32, Snow Hill, E.C. 257,676.

"**MOTORITIES**" ("Motor" disclaimed), for philosophical instruments, scientific instruments, and apparatus for useful purposes, instruments, and apparatus for teaching, by A. Dunhill, Limited, 145-147, Euston Road, N.W. 257,809.

"**TAKYR,**" for photographic apparatus, by A. E. Krauss, 21 and 23, Rue Albouy, Paris. 258,010.

DEVICE OF A SWAN HOLDING A RING IN ITS BEAK, for an anti-rheumatic ring and bracelet, both being contrivances (not medicated) for curative purposes, by J. Eddie, 140, Shaftesbury Avenue, W.C. 257,308.

Note.—Opposition to the grant of registration on any of the above applications must be filed at the Patent Office, on or before December 11, 1903.

"**FAN**" and device, for chemical substances used in manufactures, photography, or philosophical research, and anti-corrosives, by F. Ash, Limited, 11, Queen Victoria Street, E.C. 256,180.

"**B**" and device of owl in sand glass, for (1) celluloid films, and (2) dry plates, both chemically prepared for use in photography, by Elliott and Sons, Limited, Talbot House, Park Road, Barnet. 256,154-5.

"**SELTZOIDS**" ("Seltz" disclaimed), for a chemical preparation for the production of carbonic acid gas, by J. Eugster, 2, Gresham Buildings, E.C. 257,668.

"**LICTOR,**" for veterinary preparations, by Waller, Malvine and Co., 12, Castle Street East, W. 257,377.

"**PERKRESAN,**" for a liquid antiseptic for disinfecting, by Chemische Werke vorm. Heinrich Byk, 64, Luisenstrasse, Berlin, Germany. 253,056.

"**WILBURINE**" ("Wilbur" disclaimed), for petroleum or mineral jelly, by Wilburine Oil Works, Limited, 11, Broadway, New York, U.S.A. 255,523.

"**BRANDRETH'S PILLS**" label, for pills for human use, by Allcock Manufacturing Co., 22, Hamilton Square, Birkenhead. 255,470.

COAT OF ARMS label, for chemical substances used in medicine and pharmacy, but not including ointments or taraxacum, by W. A. Jones and Co., 51, North John Street, Liverpool. 257,097.

"**REXIA**" ("Rex disclaimed), for medicinal and pharmaceutical preparations, by J. W. Simpson, Crown Pharmacy, Crown Road, St. Margaret's-on-Thames. 257,222.

"**SUBRANDY,**" for a medicinal preparation for human use, by A. J. Ridge, Glenrosa, Potter's Road, New Barnet. (257,349.)

Device of two boilers, crossed, for a skin cream for eczema, by C. Bridges, Wrotham Water, Wrotham, Kent. 257,367.

"**HEMOS,**" for an ointment for human use, by E. O'Hare, 23, High Street, New Oxford Street, W.C. 257,665.

"**RENASTYPTIN,**" for a preparation for medicinal use, by Willows, Francis, Butler, and Thompson, 40, Aldersgate Street, E.C. 257,900.

"**SANACINE**" ("Sana" disclaimed), for chemical substances prepared for use in medicine and pharmacy, by Ashton and Parsons, Limited, 17, Farringdon Road, E.C. 257,961.

"**THROTOIDS**" **AND DEVICE OF GIRAFFE** ("Throat" disclaimed), for chemical substances used in medicine and pharmacy, by J. E. Garratt, 124, Southwark Street, S.E. 257,765.

"**KOLA CARDINETTE**" ("Kola" disclaimed), for chemical substances prepared for use in medicine and pharmacy, by the Palisade Manufacturing Co., 100, Palisade Avenue, Yonkers, New York, U.S.A. 258,030.

"**QUERETTE,**" for philosophical instruments, scientific instruments, and apparatus for useful purposes, etc., by Querette (Parent) Company, Limited, 17 and 18, Telegraph Street, E.C. 256,646.

"**TRILBI,**" for dental appliances and compositions, by J. Rona, 47, Kiraly-utcza, Buda Pesth. 257,332

Signature, "**J. G. STYLES AND CO.,**" for belts for the treatment of rheumatism, sciatica, and neuralgia, by J. G. Styles and Co., 55, Albion Street, Birmingham. 257,781.

"**TATTONETTE**" ("Tatton" disclaimed), for instruments, apparatus, and contrivances, not medicated, for surgical or curative purposes, etc., by H. T. Sykes, 280, Regent Street. W. 257,790.

"**PYOLIO,**" for a liquid dentifrice and tooth soap, by W. Farley, 16, Rue de la Paix, Paris. 257,348.

"**LILITH,**" for toilet preparations, by E. J. Browning. Harcourt Mansions, Croydon Road, Anerley. 257,410.

"**LEHCARESOR,**" for perfumery, etc., by A. S. Butler, 23, Somerset Street, Portman Square, W. 257,958.

Note.—Opposition to the registration of any of the above-mentioned Trade Marks must be filed at the Patent Office on or before December 18, 1903.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and 'Patent Notes for Inventors' free on application.

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

The Privileges Attaching to a Professional Qualification.

The article in this week's *P.J.*, under the above heading, is extremely pleasing, more especially with regard to the paragraph dealing with the sale of spirituous preparations and the statutory exemption in favour of chemists. But the most striking, and at the same time most gratifying, feature is the recognition of the fact that "it is the business of the Pharmaceutical Society to ensure that the exemptions accorded by Parliament to the pharmaceutical calling . . . are not overlooked by departments of the State." That this is one of the duties of the Society is clearly shown in the Charter of Incorporation, which distinctly states that it was formed, *inter alia*, "for the protection of those who carry on the business of chemists and druggists." If the Society can induce the authorities to enforce the Spirits Act, it will have rendered the best service to the trade since its incorporation, and would no doubt be the means of obtaining a very much larger membership, as a result of the benefit accruing to every registered chemist.

When one pauses to consider the tremendous number of preparations (including many so-called "patent" medicines) which contain more than 2 per cent. of alcohol, equivalent to less than ten minims in each fluid ounce, the far-reaching effect of this Act, if enforced, and its exemptions are astounding. Comparatively few liquids in the pharmacy are under the limit. The vexed question of the sale of "paregoric substitute" by grocers would also be settled. I am not overlooking the fact that "paregoric" is a B.P. synonym; but unfortunately the Foods and Drugs inspectors do. The present position with regard to the Spirits Acts is an anomalous one; John Jones, chemist, along with James Brown, grocer, may not make or sell herb beer containing more than 2 per cent. of proof spirit; yet I suppose J.J. may sell this to a "lame" person for his (or her) relief, provided, of course, he can prove that it does give relief, in which case I suppose he will have to affix a P.M. stamp or publish the formula in 'P. J. F.' Whilst, on the other hand, poor J. Brown is absolutely prohibited from selling, yet the said J. B. is allowed to sell sweet nitre (usually deficient in $C_2H_5NO_2$) or sal volatile *ad lib.* Of course, no one would ever dream of taking sal volatile as a beverage, though they might get intoxicated on herb beer (perhaps).

November 14, 1903. "Rusticus" (253/6).

Liability to Stamp Duty.

I notice in this day's Journal your list of non-dutiable titles for medicine labels you have purifying stomach and head pills. I had a letter a few weeks ago from Somerset House; they tell me they will not allow more than two names duty free.

Bromley, November 14, 1903. Albert Clarkson.

The names in the list published last week have been marked "Not Liable" by the Somerst House authorities.—[Ed. *P.J.*]

The Pharmaceutical Journal Formulary.

Enclosed please find P.O. value 5s. 6d. for a copy of the 'Pharmaceutical Journal Formulary.' I also enclose a list of my own formulæ. I regret I am so late, but somehow I got it into my head that your list closed at the end of November. I trust you will find room for them, and personally thank you for helping the subscribers to the Society so handsomely.

November 13, 1903. "A. D." (232/45).

I enclose P.O. value 5s. 6d. for a copy of the 'P.J.F.' when ready. I am much obliged to you for the trouble you are taking in compiling such a useful work, as no doubt it will prove to all who purchase it.

November 11, 1903. "W. W. S." (252/21).

I enclose P.O. 5s. 6d. for copy of 'P.J.F.' I am sure your work in this matter is one which every chemist throughout the kingdom appreciates, and on my own behalf allow me to congratulate you.

November 13, 1903. "R. H. M." (252/46).

I enclose P.O. 5s. 6d. for 'P. J. F.,' which I should be glad to have at your earliest. I am sure the whole of the profession will thank you for your efforts on our behalf. Please accept my warmest thanks.

November 14, 1903. "L. R. W." (253/25).

Please find 5s. 6d. enclosed with order form for the 'P. J. F.' It will undoubtedly be an inestimable boon to every chemist and druggist in business.

November 13, 1903. "W. R. G." (253/26).

I certainly think that thanks, for once at any rate, are due to the *Pharmaceutical Journal* for so promptly tackling the new phase of the "patent medicine" trade. I see some do not think the formulæ scientific enough, but in a large number of cases they have been made for such a length of time that any alteration would mean stopping the sale, as it would be no use telling a customer whose grandparents, say, had used it, that you had improved the formula.

November 14, 1903. "J. J. P." (254/3).

Enclosed pleased find P.O. for 5s. 6d. in payment for 'Pharm. Journ. Form.' when ready. I think the publishing of the said book is a step in the right direction, and will tend to bind the members firmer to the Society, showing, as it does, that the Society is alive to the interest of each member.

November 16, 1903. "J. L. J." (254/6).

In enclosing subscription form for 'P. J. F.,' allow me to express my high appreciation of the valuable practical help you have given us in overcoming the "stamp" difficulty. I wish the Inland Revenue authorities could be induced to restrict the sale of spirituous preparations to authorised persons.

November 13, 1903. "J. T. B." (252/48).

Herewith I have pleasure in sending cheque value 5s. 6d. for a copy of the 'Pharm. Journal Formulary.' You have earned the gratitude of chemists and druggists by the prompt and efficient manner in which you have dealt with this matter.

November 11, 1903. "J. H." (252/16).

Enclosed is 5s. 6d. P.O. for 'Pharm. Journ. Form.' I thank you for the effort you are making to assist the trade.

November 11, 1903. "W. H. S." (252/8).

I enclose 5s. 6d. P.O. for 'P. J. Form.,' and join with many others in thanking you for the splendid idea. It will save us a lot of expense in labels—as I see we can use old labels by getting a rubber stamp with "P.J.F." on. Again thanking you,

November 16, 1903. "H. R. B." (254/8).

Kindly reserve me a copy of 'Pharm. Journ. Form.,' for which I enclose P.O. 5s. 6d. I hope the prompt action of the Society in this matter of stamp duty may lead to a stronger membership in the near future.

November 16, 1903. "W. W." (254/9).

Enclosed please find P.O. 5s. 6d. and subscription form for 'P. J. F.' Congratulations on the eminently satisfactory results of your efforts on behalf of the profession.

November 16, 1903. "W. D. S." (254/7).

Enclosed find P.O. for 5s. 6d. for a copy of the 'P.J. Formulary.' This is a great work, and will benefit every registered chemist in the universe. The Society has my sincere thanks and congratulations.

November 16, 1903. "J. F." (254/21).

I enclose P.O. 5s. 6d. for copy of the 'P.J.F.' when ready. My recipes were sent some time ago. Methinks you will have a deal of work in tabulating the recipes, and that you deserve the warmest thanks of the trade (or profession?) for undertaking same.

November 16, 1903. "C. D." (254/20).

I am glad to see your efforts to assist chemists in reference to the recent application of stamp duties are receiving general recognition, and I trust it may lead very many to join the Society. I enclose subscription form and P.O. for 'Formulary.' If not too late, it may be of service to insert enclosed formulæ.—With best wishes.

November 16, 1903. "R. J. E." (254/15).

I enclose herewith 5s. 6d. for a copy of your new publication. I trust that this laborious work you are undertaking on our behalf will bring many "outsiders" into membership with that Society to which we owe so much. I hope, too, that there will be a greater liberality towards the Benevolent Fund. I long for the day when there will be a deeper feeling of brotherhood amongst us as a body. With kind sympathy in all the work of the Pharmaceutical Society, and with all its members.

November 17, 1903. "R. R. P. H." (254/50).

I have great pleasure in herewith enclosing 5s. 6d. for a copy of 'P.J.F.,' when published. I think the thanks of all registered chemists are due to you for your efforts on our behalf. It is no use non-members harping any more upon the old string of never deriving any benefit from the Society by becoming members. I think that fallacy has been knocked on the head for good. With best wishes for the Journal's success.

November 16, 1903. "J. A." (255/3).

I have much pleasure in sending you P.O. and stamps value 5s. 6d. for the 'P.J.F.' I am sure the great body of chemists and druggists throughout the country owe you a debt of gratitude, which they can, in some measure, repay by closing up their ranks and joining the Pharmaceutical Society. "Unity is strength," and I venture to assert that never in the history of pharmaceutical politics was there more need for action and combined effort than at the present time. It is not a case of "Stand at ease" any longer. If we wish to save our position and to win back what has been lost through apathy on the part of the rank and file, then it must be "Right about face."

November 16, 1903. "G. N." (254/45).

Enclosed please find 5s. 6d. P.O. for the copy of 'P.J.F.' It will prove a great boon to chemists, and you deserve the best thanks of every chemist for the great work you are doing for their good.

November 17, 1903. "A. McH." (255/8).

As one of the very first to suggest such a collection of formulæ as is now offered in 'Pharmaceutical Journal Formulary,' allow me to congratulate you on having undertaken such a useful work and publishing it with such celerity. I for one feel grateful to you for the amount of trouble you have taken for the body of chemists, and which is involved in the compiling of such a huge 'Formulary.' I think it will be the means of adding greatly to the membership of the Society. I enclose P.O. for 5s. 6d. for copy of 'P.J.F.'

November 17, 1903. "W. J. A." (254/27).

Enclosed find P.O. for 5s. 6d. for a copy of 'P.J.F.' Allow me to congratulate you on the same. It ought to prove a very valuable asset to any chemist's business.

November 16, 1903. "J. H. T." (255/5).

A Disclaimer.

In connection with the recent pharmacy prosecutions in Glasgow, a Mrs. McKellar gave evidence as to the purchase of poisons. The name is not a common one here, and I have received several inquiries if my wife was the party above named. May I be allowed to state she is not, and has no interest in the subject?

ARTHUR MCKELLAR.

Ibrox, Glasgow, November 16, 1903.

DEATHS.

Docker.—On November 16, James Docker, Chemist and Druggist, Greenock. Aged 41.

Green.—On November 12, John Green, Chemist and Druggist, Christchurch. Aged 79.

Hopper.—On October 15, Richard Hopper, Chemist and Druggist, Jarrow-on-Tyne, formerly of Bishopwearmouth, Sunderland. Mr. Hopper had for many years been a generous subscriber to the Benevolent Fund of the Pharmaceutical Society.

Johnson.—On November 11, Frederick Johnson, Chemist and Druggist, Henley-in-Arden. Aged 76.

Llewellyn.—On November 15, Richard Llewellyn, Chemist and Druggist, Merthyr Tydvil. Aged 59. Mr. Llewellyn had been connected with the Pharmaceutical Society as an associate and latterly as a member for many years, and had acted as Divisional Secretary for the Society, being re-appointed to that office at the November meeting of the Council.

Todd.—On November 12, Charles Todd, Chemist and Druggist, Harrington, formerly of Kendal. Aged 40.

Toone.—On November 1[illegible], William Toone, Chemist and Druggist, Hipperholme, formerly of Woolshops, Halifax. Aged 67.

Warren—On November 11, at Detroit, William M. Warren, general manager of Messrs. Parke, Davis, and Co.'s works. Mr. Warren's death was entirely unexpected by the representatives of the firm in this country, and no details have yet come to hand, but we understand that it will not involve any change in the policy or working of the firm.

PUBLICATIONS RECEIVED.

Photograms of the Year 1903.—A Pictorial and Literary Record of the Artistic Photographic Work of the Year. Compiled by the editors and staff of the *Photogram*, assisted by A. C. R. Carter. Pp. 172. Price 2s. net. London: Dawbarn and Ward, Limited, 6, Farringdon Avenue, E.C. 1903. This is a beautifully printed collection of the photographs exhibited during the year, and is supplemented by literary matter contributed by writers in various parts of the world. It is a book which should interest every photographer.

A Manual of Medicine. Edited by W. H. Allchin, M.D. (Lond.), F.R.C.P., F.R.S., (Ed.). Vol. V. Pp. XII. + 687. London: Macmillan and Co., Limited. 1903. From the Publishers.

Matriculation Directory (with The Calendar of University Correspondence College, 1903 and 1904). No. XXXV., September, 1903, with list of Text-Books for use under the New Regulation. Pp. 131. Price, 1s. net. Cambridge University Tutorial Series, Burlington House. From the Publishers. This well-known publication is a most efficient students' guide to the London Matriculation, and a striking testimony to the success in all the examinations of London University of students who have been prepared by the U.C.C.

Bakteriologie und Sterilisation im Apothekenbetrieb. Von Dr. C. Stich. Mit 29 Text-figuren und 2 lithogr. Tafeln, Pp. 83. Price, 4 marks. Berlin: Verlag von Julius Springer, 1904. From the Publisher.

Schule der Pharmazie. Herausgegeben von Dr. J. Holfert, Prof. Dr. H. Thoms, Dr. E. Mylius, Dr. K. F. Jordan. I. Praktischer Teil, bearbeitet von Dr. E. Mylius. Mit 122 in den Text gedruckten abbildungen. Pp. 260. Dritte verbesserte Auflage. Berlin: Verlag von Julius Springer. 1903. From the Publisher.

Schule der Pharmazie. Herausgegeben von Dr. J. Holfert, Prof. Dr. H. Thoms, Dr. E. Mylius, Prof. Dr. E. Gilg, Dr. K. F. Jordan. IV. Botanischer Teil, bearbeitet von Dr. Ernst Gilg. Mit 556 in den Text gedruckten abbildungen. Pp. 468. Berlin: Verlag von Julius Springer. 1904. From the Publisher.

BANKRUPTCY INTELLIGENCE.

Re Spencer Street, Chemist and Druggist, Bexhill.

This debtor, a chemist and druggist, of 37, St. Leonards Road, Bexhill-on-Sea, at his examination, held at the Hastings Court, stated that his liabilities were £604 1s. 3d. and assets £456 14s. 10d. His capital was £600; £400 from his father and £200 borrowed. His takings at first made the business a living one, but on opening a branch shop he lost money, taking only about £50 in eighteen months. He was recommended by his parents and by a solicitor to close the branch, as trade was very bad. The case was closed for the signing of notes.

Application for Discharge.

An application for discharge was made on November 17, before Mr. Registrar Linklater, sitting in the Court of Bankruptcy, by Thomas Irwin Wallas, formerly carrying on business as a chemist and druggist at 9, Great Marylebone Street, W. The debtor filed his petition on June 27, 1900, and it appeared that his estate had realised £1,751 12s. 4d., and that a first and final dividend of 7s. in the pound had been paid on proofs amounting to £2,890 3s. 2d.

The Official Receiver reported that the assets were not equal to 10s. in the £ on the unsecured liabilities, and that the bankrupt had not kept proper books of account.

His Honour suspended the order of discharge for two years.

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Wart-Wort (W. S. T.—101/5).—Yes; *Euphorbia helioscopia.*

Winter Cream (J. V.—101/2).—It is not liable to stamp duty.

Chinese Wood Oil (B. J. K.—101/13).—See the *P.J.* of September 19, 1896, page 255.

Nit Ointment (S. S.—101/14).—The ointment is not rendered liable by the handbill you send.

Medical (E. P. S.—101/6).—The answer to both your questions is in the negative.

Arrowroot (C. P.—101/15).—It is understood to be more digestible than other starches.

Inhaler (R. P. H.—254/50).—It will be liable unless you disclose the composition of the medicament.

Emulsion (L. E.—253/37).—Your formula will be published unaltered, but without your name attached.

Ingredients of Mixture (J. J. C.—101/25).—It is impossible to say without subjecting the liquid to analysis.

Godfrey's Cordial (F. E. D.—253/43).—You may make it and sell it, but must not label it "Godfrey's Cordial."

Lavender Oil, Etc. (R. H. R.—100/11).—(1) It keeps better when diluted with spirit. (2) Use carmine of good quality.

Mixture (C. P.—101/17).—The phenazone is precipitated as an insoluble salicylate, though forming a clear solution at first.

Dispenser (C. P.—101/18).—A medical man is at liberty to employ whom he likes as a dispenser, whether qualified or not.

Book for Student (M. C.—101/22).—White's book is much more accurate and comprehensive than the other work you mention.

Stains on Prints (C. P.—101/16).—You will find particulars of various methods in the second series of Spon's 'Workshop Receipts.'

Spectacle Trade (G. W. S.—101/10).—You will find full particulars in the 'P.J. Photographic and Optical Supplement,' published March 28 last.

Labels (A. S.—243/46).—All your labels, except that for hair restorer, will incur liability unless you indicate that the formulæ appear in the 'P.J.F.'

Neuralgia Mixture (W. M.—101/4).—It will not be liable if you state the names of all the active medicinal ingredients, or publish the formula in the 'P.J.F.'

Labels (J. S.—101/3).—The label for Blaud's pills will not incur liability if you print the letters "B.P." after the name. The stomach and liver mixture is not rendered liable by the label you send.

Names in Formulary (W. J.—101/12).—This is a question we are not prepared to answer; it should be addressed to the Secretary of the Inland Revenue, whose reply we shall be glad to have communicated to us.

Dispensing Queries (G. C. J.—101/8).—The first prescription is quite impracticable, and cannot be dispensed. We should be glad to know what constitutes the difficulty in the second prescription, and whether you use a or β-eucaine.

Label (J. C.—101/27).—As the powder consists of an entire drug, it is exempt from duty. See the paper at page 737 *et seq.* of this issue, where information on the point is given.

Formulary (W. J. A.—249/26).—The error will be corrected. We cannot give a definite answer to your question about names. If you adopt some other name than that published you may experience difficulty in identifying the preparation.

Foreign Pharmacopœias (C. L. T.—101/21).—English translations are not published, but you will find the substance of both books in Braithwaite's 'Pharmaceutical Formulary' (Churchill, 6s. 6d.). The 'P.J. Formulary' is not likely to be ready by the date you mention.

Calf Meal (H. F. W.—101/24).—Mix barley meal, 2; crushed linseed, 1; and wheat meal, 2. Two tablespoonfuls of the mixture should be made into a thin paste with cold water, after which sufficient boiling water, or a mixture of milk and water in equal parts, must be added to make about a quart.

Labels (W. W.—252/50).—Certainly, publication of the formulæ, and a reference to that fact upon the labels, will enable you to use labels which would otherwise render it necessary to stamp the packages. The Easton's Syrup will be considered liable unless you indicate that it is a B.P. preparation.

Malaria (F. H. W.—101/19).—The reports to the Malaria Committee of the Royal Society, published periodically by Harrison and Sons, should meet your requirements. The last volume—the 8th series—was published last month (price 2s.). The last edition of Quain's 'Dictionary of Medicine' was issued in 1902 (Longmans, Green, 21s. net).

Formulary (J. F. L.—100/35).—No free copies of the 'P.J. Formulary' will be supplied to any one, whether officers of the Pharmaceutical Society or not. The production of the work is a business enterprise, and will be carried out on strictly business lines. In answer to your second question, members may still send recipes, but they will be reserved for a supplement to, or a subsequent edition of, the 'Formulary.'

Acidum Aceticum Dilutum, etc. (L. E. J.—101/1).—(1) The strength of this preparation was fixed in order to correspond, in acid strength, to vinegar. Your statement with regard to Acid. Sulph. Dil. is incorrect. (2) The letters are printer's marks referring to the consecutive sheets. (3) The scum has no definite chemical composition, but forms on many liquids when heated. Dirt in the borax is one of the causes in this instance.

Labels (A. S.—101/9).—The label for carbolic tooth-powder will render the preparation trebly liable, because (1) your name appears in the possessive case, (2) you say the powder is prepared "only" by yourself, and (3) it is said to arrest decay. Publication of the formula will not help you in this case unless you alter the label in respect of (1) and (2). The antiseptic dentifrice may be rendered liable by the references to decayed teeth. The quinine and iron tonic is not liable.

Toilet Cream (R. S. D.—101/7).—Try the following and report results:—Curd soap, 3; white beeswax, 1; lard, 7; almond oil, 1; distilled water, 12; perfume, *q.s.* Dissolve the soap in the water; then add the wax, lard, and oil, previously melted together, after which add the perfume, and stir till cold. The following makes an excellent toilet cream:—Hard paraffin (m. p. 55° C.), 22; prepared suet (or lard), 3; soft soap, 2; tragacanth, in powder, 2; glycerin, 2; oil of lavender (or other essential oil, 1; boiling water, 68. Melt the paraffin and suet in a vessel surrounded by hot water, add the soap and boiling water, and beat the mixture vigorously until a smooth white emulsion is obtained. Remove the surrounding hot water, add the tragacanth gradually, and continue the beating and stirring as the mixture cools. When nearly cold add the glycerin and perfume.

Correction.

In the description of Mr. Martindale's exhibits at page 711 of last week's issue, *for* γ *read* a.

Calendar for the Week (November 22—28, 1903).

Days of		Events of the Week.	Sun	
M	W		Rises	Sets.
22	S	Twenty-fourth Sunday after Trinity.	7.30	4.2
23	M		7.31	4.1
24	Tu	Bradford Chemists' Association, at 9 p.m.—Smoking Concert.	7.33	4.1
25	W	Forfarshire Chemists' Association, Mather's Hotel, Dundee, at 4 p.m.—Tea, followed at 4.30 by meeting.	7.35	3.58
		Edinburgh Chemists', Assistants', and Apprentices' Association, at 9.15 p.m.		
26	Th	Barnsley and District Chemists' Association, at 7 p.m.	7.36	3.58
		Chemists' Assistants' Association, at 8.30 p.m.—"Trichromatic Photography," by F. Goldby.		
		Dover Chemists' Association, at 9 p.m.—Annual Meeting.		
		Leeds and District Chemists' Association, Bond Street, Leeds.—Dinner at 8.15 p.m.		
		Liverpool Chemists' Association, Hotel St. George, at 7.45 p.m.—Hot Pot Supper and Smoking Concert.		
		Midland Pharmaceutical Association.—"Cod-liver Oil and its Adulterants," by E. W. Mann.		
		Sheffield Pharmaceutical and Chemical Society, at 7.30.—Smoking Concert.		
27	F	◗First Quarter, 5.37 a.m.	7.38	3.56
		Cambridge Pharmaceutical Association, at 9 p.m.—Lecture on Radium.		
		Northampton Chemists' Association.		
28	S	Football.—Metros. *v.* Lorn Athletic R.	7.40	3.56

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Allen, Alexander, Anderson, Andrews, Aplin, Appleyard, Averill, Armitage, Ashton, Austin, Axe, Backhouse, Bagnall, Baillie, Bain, Baker, Balkwill, Bannister, Barber, Barker, Barrie, Bathe, Bates, Bayley, Beer, Bedford, Bell, Bennett, Beresford, Betty, Billington Bingham, Bird, Blackman, Blain, Bolsover, Booth, Botham, Bowden, Brackenbury, Broad, Brooks, Broomfield, Browell, Brown, Buckley, Burns, Burrell, Cammell, Campkin, Cannon, Carmichael, Casson, Chadwick, Chaplin, Chapman, Charles, Chater, Chatterton, Cherry, Christie, Clarke, Clay, Clayton, Cocks, Coleman, Colebrook, Coles, Cooper, Cope, Cornhill, Cotterill, Coull, Cowap, Cox, Crane, Craske, Craven, Crook, Culverwell, Dampney, Dann, Davies, Davis, Dawson, Dean, Dickinson, Dier, Dodd, Doig Doring Dowdy, Drayton, Duckworth, Dudderidge, Dunlop, Dunn, Dutton, Dyson, Eastman, Easton, Eden, Elliott, Ennson, Essam, Evans, Everett, Ewell, Fairman, Faraday, Fawcett, Fearnley, Featherstone, Felton, Ferguson, Fernie, Fielding, Firth, Fisher, Flanders, Foden, Fowler, France, Francis, Fraser, Freeman, Gaitskell, Gardner, Gartside, Gateley, Gaubert, Gibbs, Gibson, Glass, Gledhill, Glew, Goldby, Gossop, Gravill, Gray, Green, Gregory, Gresty, Griffiths, Grisbrook, Grose, Groth, Gutteridge, Hairsine, Hales, Hall, Hallaway, Hamblin, Handford, Hands, Hankinson, Hardman, Harg, Hargreaves, Harley, Harriss, Harwood, Hawkins, Heath, Heaton, Hearnshaw, Henry, Heywood, Hick, Higgs, Hill, Hillidge, Hilton, Hines, Hirst, Hislop, Hodge, Hodgson, Hodgkinson, Holford, Holmes, Holroyd, Hornby, Hoyle, Hudson, Hughes, Hulme, Hutchinson, Hutton, Insull, Jackson, James, Jenkins, Jenner, Jephson, Johnson, Johnstone, Jones, Keller, Kendrew, Kent, Kerr, Kingsford, Kirk, Kirkland, Laing, Latham, Laurie, Laverack, Lawman, Laybourn, Le Fevre, Legat, Lennox, Lincoln, Livesey, Lloyd, Lockwood, Long, Lorimer, Low, Macauley, McDiarmid, McHarg, Mackenzie, Mackie, MacMaster, Maddison, Marsden, Marshall, Marshallsay, Martin, Mason, Matcham, Matthews, Mawer, Mayson, Meck, Meynett, Miles, Milestone, Morris, Mortimer, Mullinger, Muskett, Naylor, Nelmes, Newton, Nicholls, Noble, Nock, Northey, Olive, Ough, Owain-Jones, Owen, Page, Paine, Palmer, Park, Parlby, Partington, Patey, Pattison, Peach, Peck, Pentney, Phillips, Philp, Pilkington, Piquet, Pitman, Plowright, Polygreen, Pratt, Powell, Prebble, Priestley, Prince, Pritchard, Raffan, Ranken, Reade, Reith, Richards, Richardson, Riches, Ridyard, Robbins, Roberts, Robertson, Robinson, Rogers, Ross, Rowell, Rundles, Russell, Sampson, Sawyer, Scott, Seaborne, Seebleur, Senior, Seymour, Shannon, Shaw, Shepherd, Simco, Simpson, Singleton, Skidmore, Skinner, Skipworth, Smart, Smith, Smithies, Snow, Southern, Speedie, Spencer, Squire, Stanley, Stiles, Stokes, Stooke, Stratton, Sturch, Sutcliffe, Taplin, Taylor, Tebb, Temple, Thompson, Todd, Tomlin, Toon, Toplis, Turner, Tweedie, Twinberrow, Varley, Wade, Walker, Wall, Walsham, Walton, Ward, Warren, Watson, Wearing, Weaver, West, Wharton, Whitaker, Whitlamsmith, Williams, Williamson, Wilson, Winfield, Winterbottom, Wood, Woodman, Woodward, Yates.

Telegrams: "PHARMACEUTICAL JOURNAL LONDON"
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The Journal circulates widely in the United Kingdom, France, Germany, Austria, Italy, Russia, Switzerland, Canada, the United States, South America, India, Australasia, South Africa, etc. It is supplied regularly to the majority of the Chemists and Druggists in business in England, Scotland, and Wales, and to the whole of the members of the Pharmaceutical Society of Great Britain. Orders for Advertisements or for Copies of the Journal should be addressed to the Publishers, 8, Serle Street, London, W.C.

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Annual Subscription, 20s. Post Free; Single Copies, 4d. each, by Post, 4½d.

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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, November 26, 1903.

The Results of Investigations on Oxymel Scillæ, performed in the laboratories of Messrs. John Bell and Co., appear this week.

The First Examination Paper in connection with the Students' Columns, and full particulars of the competition, appear this week.

A Firm of "Company Dentists" in Ireland has succeeded in proving that a limited company is outside the scope of the Dentists Act.

A Member of the Pharmaceutical Society gives his personal views on things pharmaceutical in general. His opinions make very interesting reading.

An Unqualified Assistant to a chemist at Hamilton has been fined for selling laudanum in contravention of Section 15 of the Pharmacy Act, 1868.

In the Second Instalment of an article entitled "Southern and Eastern Sketches," Mr. Druce gives some interesting particulars of a holiday spent in the South of Italy.

The Tariffs on Medicines imported into France vary between 5 per cent. and nearly 200 per cent. *ad valorem*. An importer has given some particulars of the French import regulations to a Journal interviewer.

Such Titles as "Blood Purifier," "nerve tonic," "liver invigorator," "aperient liver mixture," etc., etc., involve liability to Medicine Stamp Duty; teething powders are also liable to duty. This is the latest decision of the Inland Revenue authorities.

Specimen Pages of the 'Pharmaceutical Journal Formulary' will be found at the end of this week's Journal. Members of the Pharmaceutical Society who wish to take advantage of the special subscription offer should fill in the form to be found in this issue at once.

The Medicine Stamp Duty Acts, arranged in a convenient form for reference, are printed in this issue. A schedule of dutiable medicines is appended, whilst, by referring to the concise synopsis appearing at the end of the article, readers can see at a glance when medicines are liable to duty and when they are not.

One of the Earliest Members of the Pharmaceutical Society, Mr. Samuel Negus, of Northampton, has passed away at the ripe old age of ninety-seven. The deceased pharmacist had been a member of the Society for sixty-one years. Probably no other living chemist has attained such a great age as Mr. Negus; it would be interesting, however, to learn of any other who has so nearly reached the century.

"Tabloids" have occupied the attention of Mr. Justice Byrne, sitting in the Court of Chancery, during the last six days. Mr. Wellcome gave evidence and was cross-examined on Friday and Saturday of last week, and a number of prominent pharmacists have been called, both by the plaintiff, Mr. Wellcome, and by the defendants, Messrs. Thompson and Capper. Counsel for the defendants delivered his closing speech this afternoon. A report of the case, so far as heard, will be found in this issue.

Absolute Identification of the Formula from which a recommended medicine is prepared is now insisted on by the Board of Inland Revenue. This ruling is directly contrary to that given in the Board's letter of October 7, and again renders it necessary that chemists who are making use of the 'P.J. Formulary' should give the registered number of the recipe as well as the reference "P.J. Form," in order to avoid liability to Medicine Stamp Duty.

The Market in Drugs and Chemicals continues very quiet. The drug auctions, at which only a moderate supply of new goods were offered, were held to-day.

Vol. 71. No. 3397. (4th Series, Vol. 17. No. 1744.)

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MORE MEDICINE STAMP DIFFICULTIES.

Up to the present, the Board of Inland Revenue has been fairly successful in its attempts to unravel the medicine stamp duty tangle, with a due regard for consistency, but it is a cause for regret that the Board has now embarked upon a course which is likely to cause considerable confusion, by continually reversing its decisions as to what names of medicines do or do not constitute dutiable descriptions. As recently as November 3, a letter was received from the Board, enclosing a duplicate list of medicines which had been submitted by the Editor of the *Pharmaceutical Journal* for consideration. The whole of the names in that list were officially marked "L" or "NL" respectively, and among those marked "NL" were "Blood Purifier," "Blood Purifying Pills," "Liver and Blood Purifying Pills," "Purifying Blood Pills," and many others which were included in the list of assumed non-dutiable titles published at page 738 of last week's Journal. Within less than three weeks, however, the Board has seen fit to reverse its decision with regard to several of the names included in the list submitted to it, as will be seen on referring to the following letter:—

> Inland Revenue,
> Somerset House, London, W.C.
> November 23, 1903.
>
> Sir,—I am directed by the Board of Inland Revenue to state that the decision conveyed to you in their letter of the 28th ultimo may be regarded as applying to adjectival as well as substantival forms of names of organs of the body in the title of a medicine, and they agree therefore to the modification which you suggest should be made in the terms of that letter.
>
> I am, however, to state that this ruling must not be taken as applying to medicines, the descriptions of which contain not only a reference to an organ of the

body, but also include a reference to the manner in which the medicine acts upon the organ. The Board would regard such titles as Blood *Purifier*, Nerve *Tonic*, Liver *Invigorator*, Aperient Liver Mixture, etc., etc., as involving liability to duty.

I am, at the same time, to point out that the word "Teething" cannot be regarded as merely an adjectival form of the substantive "Teeth," and the title "Teething Powders" would, in the Board's opinion, constitute a dutiable description.

I am, Sir,
Your obedient servant,
(Signed) E. E. Stoodley,
Secretary.

The Editor,
Pharmaceutical Journal.

The reference in the first paragraph of the foregoing letter to a suggested modification of the terms of the Board's letter of October 28 is based upon a misapprehension, as no such suggestion has been made by the Editor. Apart from that, however, and in view of the great inconvenience caused by a continuance of the existing state of uncertainty as to what constitutes a dutiable description, a reply has been sent to the Board's letter, in which reference is made to the fact that, as recently as November 3, 1903, the Board marked "not liable" the names "Blood Purifier" and others in a list specially submitted, by arrangement. No further communication on the subject had been received at the time of going to press, but the earliest opportunity is taken of informing readers of the Journal that the names on some labels which they have been led to consider "non-dutiable" must now apparently, in the opinion of the Board of Inland Revenue, be regarded as constituting dutiable descriptions. Among such should be included the following:—

Aperient Liver Mixture.
Blood Purifier.
Blood Purifying Pills.
Brain and Nerve Tonic.
Liver and Blood Purifying Pills.
Liver Cleanser.
Liver Invigorator.
Nerve Tonic.
Nervine Tonic.
Purifying Blood Pills.
Purifying Stomach and Head Pills.
Skin and Blood Purifier.

◆

A CONCESSION WITHDRAWN.

A further striking example of the uncertainty which seems to prevail at Somerset House is afforded by the following official communication, received almost at the moment of going to press:—

Inland Revenue,
Somerset House, London, W.C.
November 25, 1903.

Sir,—I am directed by the Board of Inland Revenue to refer you to their letter of the 7th ultimo, and to the second paragraph thereof, which deals with the case of several formulæ appearing in a recognised book of reference under the same name. That decision related to medicines that were described by reference to the ingredients such as "Quinine and Iron Tonic," and cannot be regarded as applying to medicines such as Cough Mixture, which are described on the label by reference to the ailment or ailments they are intended to relieve. Such labels must contain a specific reference to the particular formula in accordance with which they are prepared if it is desired to claim the benefit of the exemption.

I am also to state that the Board do not consider that a reference to a formula by means of the initials of the book from which it is derived would, as a general rule, be sufficient to bring the medicine within the category of "known, admitted, and approved" remedies. The reference should be in a form which is intelligible to persons outside the circle of professional experts.

The Board would, however, regard the letters 'B.P.' as sufficiently indicating that the medicine is prepared in accordance with a formula in the British Pharmacopœia; inasmuch as, in their opinion, the meaning of those letters is generally understood.

I am, Sir,
Your obedient servant,
(Signed) E. E. Stoodley,
Secretary.

The Editor,
Pharmaceutical Journal.

The effect of this latest decision of the Board of Inland Revenue is practically to nullify the concession announced in the *Pharmaceutical Journal* of October 17 last, as chemists and druggists who have sent their recipes for publication in the 'P.J. Formulary,' or elsewhere, will now be obliged to quote the registered numbers of those recipes if they desire to claim the benefit of the special exemption. In this connection, it is only fair to state that, when the Board's letter of October 7 was received, publication of the communication was purposely delayed until the Editor had explained to the Inland Revenue officials what the effect would be of the decision then intimated. Thus, the Board's letter stated that, "As regards the cases in which several different "formulæ for a preparation appear in a recognised book "of reference under the same name, the Board will not "insist on a disclosure of the precise formula from which "the preparation is made up." Particular pains were taken to make the Inland Revenue officials understand clearly that this would enable any chemist to avoid identifying his preparations absolutely, but, in spite of that, a further communication, dated October 13, was sent, in which the Board confirmed the decision already communicated.

With regard to the second paragraph of the letter just received, it is important to note that the use upon labels of the initials of the name of a book in which a formula is published will not, in all cases, be regarded by the Board as a sufficient reference, in the case of medicines which it is desired to bring within the category of known, admitted, and approved remedies. In the case of the British Pharmacopœia, the use of initials will be sufficient, and in the case of the 'Pharmaceutical Journal Formulary' the Board has previously intimated (*vide P.J.*, November 7, p. 659) that "the words 'P.J. Form.,' "stamped on a label, will be accepted as a sufficient indi-"cation of the source from which the formula for the pre-"paration is taken, so as to bring the preparation within "the exemption from Medicine Stamp Duty in favour of "'known, admitted, and approved remedies.'" It is still probable that the use of the initials 'P.J.F.' will be found sufficient in the case of very small labels; in the circumstances, however, chemists are advised to use the contraction 'P.J. Form.,' together with the registered number of the recipe, where necessary.

FACTS AND PHRASES.

"Skill is a personal matter, and in this mainly consists the difference between a profession and a trade." Thus Mr. R. Brudenell Carter, F.R.C.S., in a very interesting book issued within the past ten days ('Doctors and Their Work'; Smith, Elder and Co.). The book is written with the object of bringing to the public mind a "better understanding of medical objects and methods than now commonly prevails." Pharmacists are well aware that great need exists for a book which will achieve that end, and it may at once be granted that the greater part of the work under notice is well calculated to serve its avowed purpose. The passage quoted above must not be understood to be the keynote of Mr. Carter's book, although he does complain with some feeling of the manner in which the profession of medicine is regarded and treated by the public. Mr. Carter has little sympathy with the commercially-minded practitioner—the medical trade-union leader who refuses, perhaps, to attend a poor patient without having been paid beforehand—and reminds his readers that while "merchandise is a matter of human invention, intended to be bought and sold as a means of getting gain," skill is a gift which it is not honourable to withhold from suffering fellow-creatures. The chapters on Medical Grievances, The Wishes of the Patient, and the Hindrances to Medicine, are devoted in great measure to deprecating the commercial spirit among medical men, and, of course, to anathematising the practice of quackery and self-drugging in every form. It is a remarkable coincidence that Mr. Carter's book contains a reference to the word about which so much dispute has recently arisen. Medical men, says Mr. Carter, "frequently suffer the prescribing to be done for them by an advertising manufacturing druggist, whose 'tabloids' or other messes are made to suffice for every case which presents itself. The medicine is no longer adapted to the patient, but the patient is expected to adapt his ailments to the medicine." Much stress is laid on the fact that chemistry is nowhere in England taught to medical students in such a way as to enable them to understand either the chemistry of digestion or "the very words in which the conclusions of that chemistry would be technically expressed."

Mr. Brudenell Carter, in the character of a self-constituted authority on the English language, is no stranger to pharmacists, as those who were privileged to listen to the address which he delivered at the opening of the Session of the School of Pharmacy in 1896 (*P.J.*, [4] **3**, 309) will readily admit. In 'Doctors and Their Work,' he again urges as the first requirement of preliminary education, a knowledge of the English language, including grammar and composition, and he inveighs against the illiterate use of the word "reliable" and of the phrase "under the circumstances." But, while one may agree with Mr. Carter on those points, it becomes necessary to point out to him that his own language is by no means free from equally grave faults of literary style. Mr. Carter speaks of "forces which can never be exactly estimated," forgetting apparently that an estimation is a mental operation which can never, *in* any circumstances, be more than a tolerably good "guess." Further, he employs the vulgarism "firstly," while the highly objectionable phrase "and which," occurs over and over again. It is with some surprise that the reader, who has, perhaps, been impressed by Mr. Carter's condemnation of inexact expression, meets with the following sentence: "Catarrh of the nasal mucous membrane constantly occurs when no previous exposure to a low temperature can be traced." Without wishing to dispute the accuracy of that which Mr. Carter doubtless intended to convey, one may be permitted to ask, with all respect, whether he regards "constantly" and "frequently" as synonymous terms. Criticism on these points may seem trivial, but is surely excusable, in the light of Mr. Carter's own dictum that the boy who is to be a medical man can learn nothing more important than the power of saying or writing exactly what he means.

Early in the history of the medical treatment of disease, the doctor was considered to be entirely subordinate to the medicine. And, as Mr. Carter remarks with some truth, it was a natural consequence "that one compounder of medicine was as highly regarded as another. It was by reason of the doctor's medicine that the patient got well, and he would be just as likely to get well if the medicine were that of a quack or of a druggist. Such, at any rate, was the condition of opinion, not only among old women who believed in witchcraft, but in the House of Commons, which passed the Medical Act of 1858." The point is by no means happily expressed, and may, it is to be feared, lead the public into the very mistaken belief that medicine compounded by a druggist is on a level with medicine compounded by a quack, and inferior to medicine compounded by a medical man. Mr. Carter must himself be well aware of the futile absurdity of any such contention. And the author of 'Doctors and Their Work,' is a little unfortunate in another reference which he makes to pharmacy. At page 232 certain statements are made with reference to the sale of quack medicines by chemists and druggists. Mr. Carter, not unnaturally, wonders why chemists sell quack medicines at all, and proceeds to put forward by way of explanation, the false hypothesis that there is more profit to the retailer on A's Blood Potion, or B's Real Cure, than the druggist could make if he himself were to mix the same ingredients as those concoctions contain and to sell the mixtures at the same price. Counter-prescribing, as might have been expected, is hinted at in the book. In tracing the history of the Society of Apothecaries, a body which is treated throughout the book with great consideration, the author remarks that the apothecaries have existed (*sic*) as sellers of drugs "and also as medical practitioners, a function probably thrust upon them by the public, who, then as now, were apt to believe that the mere handling of medicines must convey, by absorption through the skin presumably, some information with regard to their characters and uses." This apt reference to a common tendency of public opinion must not be held to imply that Mr. Carter would deny to the pharmacist all knowledge of pharmacology and therapeutics, for in another passage he writes that "a qualified dispensing or 'pharmaceutical' (why the inverted commas?) chemist would, as a rule, and always might, know of what ingredients any particular quack medicine was composed, and would, therefore, know that it was not calculated to produce on the human body any of the effects claimed for it in the advertisements." The author means to be fair in his references to pharmacy, although in a few instances, as has been shown, he has been unfortunate in his selection of facts or phrases. 'Doctors and Their Work,' if it cannot be said to show great profundity, is both interesting and amusing, and has many a useful lesson for that most remarkable entity, the British public. Will no one attempt to do for pharmacy that which Mr. Brudenell Carter has sought, in this book, to achieve for the medical profession?

GENERAL MEDICAL COUNCIL.

At the opening of the seventy-eighth Session of the General Medical Council on Tuesday, November 24, the President, Sir William Turner, delivered an address, in which pharmaceutical matters were referred to. Sir William Turner stated that, in accordance with the request of the General Medical Council, he had called the attention of the Lord President of the Council to the Pharmacy Bill then before Parliament, in which the rights of the medical profession as safeguarded by existing Pharmacy Acts appeared to be encroached upon. In reply he had been assured that the Council of the Pharmaceutical Society had no intention of interfering with medical practice, and that it had prepared a clause for insertion in a future Bill to ensure that it should not interfere with or abrogate any of the rights reserved in the Pharmacy Acts, 1868 and 1869. A communication to the same effect had been received directly from the Secretary to the Pharmaceutical Society. Later in his address the President said that a number of registered medical practitioners in Glasgow had presented to the Lord President of the Council a petition respecting the action of the Pharmaceutical Society of Great Britain, and of the General Medical Council, with reference to the sale of scheduled poisons by unqualified assistants. The petition had been transmitted by the Lord President for the information of the General Medical Council. The remainder of the address was principally occupied with educational matters to be brought before the consideration of the Council.

A WARNING.

Correspondence has been received at the office of the Pharmaceutical Society, proving that chemists in the southern counties of England are peculiarly subject to the visitation of a worthless person who falsely and fraudulently represents himself to be "Thomas Connell Smith, of Edinburgh." The two most recent victims of this impostor are well-known pharmacists in Kent and Hampshire, and this official warning is inserted with a view to rendering the future operations of the self-styled Smith more and more unremunerative. If we might venture a suggestion to pharmacists about to engage assistants or managers, it would be to the effect that reference to the administrative department of the Pharmaceutical Society is easier, more economical, and less wearing to the nerves than exploitation by a *mauvais sujet*.

UNTRIMMED LAMPS.

If the Pharmaceutical Society is without honour in its own country—among those who practise the business or calling of a chemist and druggist—it may comfort itself with the assurance that some other persons are proposing to model their actions on the past actions of the Society. Our contemporary the *Grocer* has discovered that the chemists and grocers present a distinct resemblance to the Wise and Foolish Virgins. "It is better," says the *Grocer*, "to keep your man in health by feeding him wholesomely than to make him sick with bad food and then try to cure him with drugs," and our contemporary proceeds to regret that while druggists have to pass examinations and join themselves to a "kind of modern guild," grocers are left to their own devices, a mere orderless mob. "It is all obviously wrong, and the reason is that the chemists sixty years ago were like the Wise Virgins in providing for eventualities, while the grocers were but foolish in their day and generation and let things slide. Trained and organised, the chemists now score while the grocer 'grunts and sweats,' like Hamlet, under a weary load of cheap competition, which he never ought to have been exposed to, but which, under present conditions, must continually grow worse."

If the grocer were to acquire a knowledge of chemistry, and particularly of physiological chemistry, for that is what is meant, it is indeed possible that there would be less demand for the services of the chemist and druggist than in present circumstances. But the undoubted fact has to be faced that if the grocer's scientific knowledge of his business were simply and solely devoted to the improvement of "the people's food," without any trespass on the province of the chemist and druggist, the latter's loss would be the public's gain. No chemist would wish to take any steps which might prove an obstacle to the public gain, but it may reasonably be doubted whether the proper business of a grocer is one which lends itself at all to scientific study, except with regard to the prevention of chemical adulteration of foods. And adulteration may be avoided by honest men, whether or not they have been examined and subscribe to a guild.

THE DIGEST OF RESEARCHES.

During the past week a booklet, entitled 'The Digest of Researches and Criticisms,' has been issued. The Digest bears on the revision of the British Pharmacopœia, 1898, and has been prepared, by direction of the Pharmacopœia Committee of the General Medical Council, by Mr. W. Chattaway, F.I.C., who deals with criticisms published during the four years from the beginning of 1899 to the end of 1902. The quotations are taken mainly from contributions which have appeared from time to time in the *Pharmaceutical Journal*, including the "valuable investigations recently carried out in the Research Laboratories of the Pharmaceutical Society of Great Britain." The book differs from the digests previously issued by the authority of the General Medical Council in respect that no personal criticisms by the compiler have been introduced.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

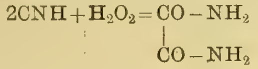
A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Mercuric Oxycyanide.

This salt, according to Lehmann's recent researches, appears to be about equal to mercuric chloride in disinfectant and bactericidal properties, when tested upon *Micrococcus pyogenes*, anthrax spores, and *Bacillus mesentericus*. It possesses, however, one great advantage over corrosive sublimate, viz., that bright metal instruments may be immersed in a 1 or 1½ per cent. solution of the salt containing ½ per cent. sodium carbonate or bicarbonate without damage to their polish or cutting edges. —*Œsterr. Zeit.*, 1903, 851.

Antidote for Hydrocyanic Acid.

Hertig recommends hydrogen peroxide solution as an antidote for poisoning by hydrocyanic acid owing to the formation of oxamide, which is stated to be harmless, by the direct combination of the two substances, according to the equation—



$$2CNH + H_2O_2 = \begin{array}{l} CO-NH_2 \\ \,| \\ CO-NH_2 \end{array}$$

—*Südd. Apot. Zeit.*, 1903, 216; through *Schweiz. Woch.*, 1903, 330

Arsenical Antidote.

The opportunities for testing the action of antidotes in actual ases of poisoning are so few that it is difficult to arrive at a reliable conclusion with regard to their value. Test-tube experiments are only of limited value in this connection, because the conditions can only approximate to those of actual poisoning cases. Dr. L. de Busscher has investigated the usual arsenical antidote — freshly precipitated ferric hydroxide, usually a mixture of magnesia with ferric chloride solution—by determining the toxic dose for rabbits and other animals, and then administering the antidote after injection of the poison. He finds that it is unable to save life, even if given mixed with the poison; and is probably harmful in the case of arsenious anhydride, since the symptoms of poisoning in this case appeared to be hastened and more pronounced. The administration of sulphur compounds appears to be equally useless, because the easily assimilable sulpho-arsenite is produced, and not the insoluble sulphide, as has been assumed.—*Apot. Zeit.*, 1903, 182; through *Schweiz. Woch.*, 1903, 257.

eroxides in Ether.

The British and Swiss Pharmacopœias contain a test for hydrogen peroxide, depending upon the formation of perchromic acid, which dissolves in the ether, giving it a blue colour. The German Pharmacopœia directs the ether to be treated with one-tenth its volume of a 10 per cent. solution of potassium iodide, the mixture to be placed in a stoppered bottle completely filled, and set aside in the dark, with occasional agitation for one hour; the mixture under these conditions should not become yellow. M. Jorissen, in the *Journal de Pharmacie de Liège*, recommends, as better than either of the foregoing tests, one performed by means of a reagent prepared as follows:—0·2 Gm. of vanadic acid are heated with 2 C.c. sulphuric acid, and allowed to cool. The product is then diluted with water to 50 C.c., forming a blue-green liquid, which retains its properties for a long time. To perform the test, 1 or 2 C.c. of the reagent are agitated with 5 to 10 C.c. of the ether; in the presence of hydrogen peroxide the lower layer takes on a rose to blood-red tint, according to the quantity of impurity present. The test is said to be more delicate than the B.P., and quicker than the Ph.G.—*Schweiz. Woch.*, 1903, 211.

Hexamethylene-Tetramine as a Preservative.

G. Marpmann finds this substance, known also as formin and urotropin, to be a most efficient preservative for milk. The addition of 0·1 per cent. prevented the milk from souring for two days. It also appears to preserve meat from alteration during twenty-four hours in the proportion of 0·15 per cent. These results do not appear so striking as the author concludes, since milk and meat may be kept, without any antiseptic addition, for the times stated, if stored under proper conditions. It does not appear to offer any advantage over the use of formaldehyde in its simpler form.—*Pharm. Zeit.*, 1903, 606.

Caffeine-Ethylene-Diamine.

The search for new diuretics proceeds apace. According to the Germ. Patent, 142,896, of Meister, Lucius and Brüning, a compound having the above-mentioned composition may be obtained by the action of chlor caffeine upon ethylene diamine. Equal parts of the two substances are heated together for half-an-hour in 10 per cent. aqueous solution. The filtrate is evaporated to dryness, re-dissolved in water, the liquor made alkaline, and shaken up with chloroform. The chloroform is separated and evaporated, and the residue of caffeine-ethylene-diamine purified by re-crystallisation from alcohol.—*Pharm. Zeit.*, 1903, 574.

Hydrogen Peroxide in Crystals.

Molecular combinations of hydrogen peroxide with various salts, in which the former appears to replace water of crystallisation, have been described by R. Willstätter. Thus, if ammonium sulphate be dissolved in a 30 per cent. solution of hydrogen peroxide and placed over sulphuric acid in a desiccator, beautiful prisms crystallise out, having the composition $(NH_4)_2SO_4.H_2O_2$. The crystals smell like ozone, and, though they effloresce in air, and more quickly in a vacuum, they keep well in closed vessels. A similar compound with sodium sulphate, having the formula $Na_2SO_4,H_2O,\frac{1}{2}H_2O_2$, has also been obtained, and also with alum, aluminium sulphate, borax, and sodium acetate. These compounds may, perhaps, replace the persulphates and percarbonates for technical purposes, and for medicinal purposes they offer some advantage, in that their strength and composition can be easily determined. They also give up their hydrogen peroxide to ether and other solvents, and may, therefore, facilitate the carrying out of reactions with peroxides in indifferent solvent media.—*Ber.*, **36**, 1828.

Silajit, an Ancient Eastern Medicine.

There are two chief varieties of silajit, a medicine which David Hooper has recently investigated. One is a brown, more or less pure, native aluminium sulphate, and the other, black, silajit, a dark substance, probably of vegetable origin, although it contains a large quantity of mineral matter. The chief ingredients of the ash are calcium, magnesium, potassium, and sodium, combined as carbonates. The bulk of the organic material consists of an acid which is related to humic acid. A third variety, white silajit, was found by the author to be of animal origin, being, indeed, crude urea or inspissated urine in the solid state. The therapeutic uses of silajit are most varied, it having been quite recently recommended as a digestive and laxative, suitable for dyspepsia, diabetes, diseases of the liver and spleen, to regulate the action of the heart, and as a good respiratory stimulant and expectorant. As Hooper remarks with truth, before European physicians can prescribe white, black, or brown silajit for any disorder, it will be necessary to ascertain the nature of the chief active ingredients, and to procure a regular supply of a uniformly-prepared medicine.—*Journ. Asiatic Soc., Bengal*, **72**, 2, No. 3.

Factitious Cod-Liver Oil.

The high price of cod-liver oil has given rise to numerous attempts to provide a substitute. Most of these aim at producing a substance approximating as nearly as possible to the genuine oil in its physical and chemical constants. Sesame oil and olive oil, containing sufficient iodised oil or iodipin to bring the iodine content to 0·003 per cent., have been suggested, sometimes with the addition of ferrous iodide. To this may be added one-fifth of cod-liver oil in order to impart the characteristic odour and flavour. The addition of oleic acid has also been recommended as assisting the emulsification of the oil by the alkaline juice of the intestine.—*Pharm. Zeit.*, 1903, 561.

Bosnian Belladonna Leaves.

In Buda Pest University a sample of Bosnian belladonna leaves has been found to contain 50 per cent. of the leaves, twigs, and flowers of *Phytolacca violácea.* The leaves somewhat resemble those of belladonna, but their upper surface is without hairs and brighter than that of belladonna leaves. The detection of this adulteration is interesting in view of the discovery already announced (*P.J.*) of phytolacca root as an adulterant of belladonna root.—*Pharm. Post,* 1903, 377.

Preparation of Metallic Peroxides.

The following process is given for preparing substances of this nature:—To an aqueous solution, *e.g.*, of zinc and aluminium salts a sufficient quantity of hydrogen peroxide solution is added to convert the metallic oxide to peroxide; then sufficient alkali to precipitate the metallic peroxide. In this way the zinc peroxide is precipitated with the alumina in very fine combination. The product exhibits very active oxidising properties, having the further advantage of the solid form, and consequently an advantage over the liquid forms of hydrogen peroxide.—*Pharm. Zeit.*, 1903, 436.

Detection of Nitric Acid in Sulphuric Acid.

The diphenylamine reaction is much more delicate than that given by ferrous sulphate, and it has been suggested that the former should replace the latter in the official tests in the various pharmacopœias. It must be however remembered, that, while diphenylamine is a much more sensitive test than ferrous sulphate, the production of the blue colour is not an absolutely certain test of the presence of nitric acid. It does not appear to be very well known that diphenylamine reacts also in a similar manner with nitrous acid, hydrochloric acid, hydriodic acid, and selenic acid, and it is not therefore desirable to rely on the diphenylamine test alone as indicative of the presence of nitric acid.—*Apot. Zeit.*, 1903, 739.

Volatile Oil of the Bark of Cinnamomum Pedatinervium.

E. Goulding has found that the bark of *Cinnamomum pedatinervium,* a tree indigenous to Fiji, on distillation with steam, yields nearly 1 per cent. of a volatile oil which is almost colourless when first distilled, but gradually assumes a yellowish-brown colour. This oil has a sweet, aromatic odour, a pungent, spicy taste, sp. gr. 0·964 at 15°/15°, $[a]_D$ $-4·96°$ and n_D 1·4963. Its chief constituents are: (i.) a terpene, $C_{10}H_{16}$, which has a sp. gr. 0·8659 at 15°/15°, $[a]_D$ $-17·72°$, and yields an uncrystallisable dibromide, $C_{10}H_{16}Br_2$; (ii.) linalool; (iii.) safrole; (iv.) eugenol; and probably (v.) eugenol methyl ether. The quantitative composition of the oil is approximately as follows: terpene, 15-20 per cent.; alcohols, 30 per cent.; esters, 1·5 per cent.; safrole, 40-50 per cent.; eugenol, 1 per cent.; and 3 per cent. of eugenol methyl ether (?).—*Proc. Chem. Soc.*, **19**, 201.

OXYMEL SCILLÆ.

BY E. W. LUCAS.

If samples of oxymel of squills are obtained from different makers it will probably be found that they vary considerably. Some may be pale and slightly opalescent, while others will be clear and of a pale sherry colour. In addition, no two specimens will agree in viscidity.

The Pharmacopœia directs 2½ oz. of squill to be macerated for seven days in a mixture of 2½ oz. of acetic acid and 8 fl. oz. of water, pressed and filtered. The product—which is said to measure about 10 fl. oz.—is then mixed with sufficient clarified honey to produce a density of 1·320.

An experimental batch of eight times the B.P. quantity was set on. The filtrate had a density of 1·07 and measured 76 fl. oz. The specific gravity of the clarified honey was 1·041, so that, mixed in the proportion of 9 to 25, 211 oz. were required to produce a gravity of 1·32 in the finished product. The press used was only a small hand one, so that the proportion of expressed and filtered liquid mentioned in the Pharmacopœia is slightly too high. Working on much larger quantities, and using a powerful hydraulic press, the proportion is increased. New Chilian honey was used, the product being of a pale straw colour, which poured readily from a narrow-necked bottle.

From this it would appear that if oxymel were always prepared with pale honey, and the gravity carefully adjusted, the samples met with in trade would vary but little, but, as the Pharmacopœia permits the use of honey from any country, of all shades from pale yellow to brownish-yellow, and as considerable heat is employed during manufacture, it is easy to see how colour differences [illegible] Were this all, no particular interest would attach to the preparation, but it is a fact that, owing to the meagre official description and lack of tests, honey that has been sophisticated with glucose is not infrequently met with.

Practically all genuine honey imported into this country is lævo-rotatory, the direct polarimetric readings ranging from $-2°$ to $-15°$ on the sugar scale, and it is only rarely that honey of coniferous origin, or that produced by bees fed on cane-sugar, comes into the market. At any rate, genuine honey with a + reading is not often seen, especially in bulk.

Even if slightly dextro-rotatory honey should be used in the manufacture of oxymel of squills, the product could not have a + reading, as squills contain a lævo-rotatory sugar which more than neutralises any sucrose that may be present. Experiments made on various batches of the strong vinegar of squills show an average deviation of about $-28°$ on the sugar scale.

Nearly all honey being lævo-rotatory, or at most only slightly dextro-rotatory, and the vinegar of squill being strongly lævo-rotatory, it might naturally be expected that all oxymel of squills in commerce would behave in the same manner, no matter whence the origin of the honey; any samples having a + reading would be considered suspicious, and glucose or cane sugar looked for.

The presence of the latter would be at once indicated by the indirect reading. For the detection of glucose two fairly good qualitative tests are available. One dependent upon the fact that the dextrinoid bodies of glucose are more insoluble in strong alcohol than the carbo-hydrates of genuine honey, the other upon the colour reaction of glucose when treated with dilute iodine solution. These tests may be conveniently performed as follows:—

One volume of honey or oxymel is mixed with four volumes of water, and filtered through animal charcoal, the filtrate being returned until it passes through nearly colourless. It is divided into two portions. To one is added five volumes of absolute alcohol. Genuine honey gives only a slight opalescence, while an opaque precipitate forms at once if glucose be present, even as little as 20 per cent. To the second portion of filtrate is added one drop of volumetric iodine solution. Pure honey is unaffected; if glucose is present the iodine is at once bleached, as the former rarely contains less than 0·05 per cent., and frequently as much as 0·1 per cent. of sulphurous acid. If more iodine is added, drop by drop, the slightest excess gives rise to a reddish-brown colour, due to the amylo and erythro dextrins present. In the polariscope honey containing glucose is strongly dextro-rotatory.

Eleven samples of oxymel of squills were purchased and examined for density, acidity, deviation before and after inversion, and for glucose. The annexed table gives the results :—

Density at 15·5° C.	Gm. of Real Acetic Acid in 100 C.c.	Alcohol Test.	Iodine Test.	Cupric Reducing Power.	Direct Reading.	After Inversion.
(1) 1·310	1·92	Nil.	Nil.	49·1	— 15·5	— 20·4
(2) 1·323	1·87	Nil.	Nil.	53·2	— 16·3	— 21·6
(3) 1·336	1·08	Nil.	Nil.	56·1	— 15·7	— 19·1
(4) 1·326	2·46	Nil.	Nil.	53·0	— 11·0	— 14·8
(5) 1·318	1·06	Nil.	Nil.	49·2	— 15·1	— 16·7
(6) 1·322	0·36	Nil.	Nil.	55·4	— 14·0	— 15·7
(7) 1·327	0·53	Nil.	Nil.	52·3	— 12·1	— 16·9
(8) 1·303	1·20	Nil.	Nil.	53·2	— 13·9	— 15·7
(9) 1·325	1·05	Heavy ppte.	Deep Red Brown.	45·6	+ 27·4	+ 23·9
(10) 1·350	0·26	Nil.	Nil.	57·5	— 12·1	— 17·4
(11) 1·321	1·81	Heavy ppte.	Deep Red Brown.	46·2	+ 26·4	+ 23·6

These, calculated to cane sugar, invert sugar and glucose, are as follows :—

No.	Percentage reckoned as Sucrose.	Percentage reckoned as Invert Sugar.	Percentage as Glucose.
1	3·6	48·5	Nil.
2	3·9	53·4	—
3	2·5	55·6	—
4	2·8	51·8	—
5	1·18	48·9	—
6	1·25	54·3	—
7	3·5	51·5	—
8	1·3	52·3	—
9	2·57	36·1	19·1
10	3·9	56·4	—
11	2·06	36·8	18 8

Some of the samples being very dark, they were all treated as follows :—65·12 Gm. of oxymel of squills (two and a-half times the normal sugar weight) were introduced into a 250 C.c. flask, lead oxyacetate, alumina cream, and slight excess of sodium sulphate added, made up to bulk and filtered through animal charcoal, but *not* made up again afterwards. For titration of the acid the samples were simply diluted with water and decolourised with charcoal. All readings were taken on the sugar scale at 16° C.

The very large variations in density and acidity are unaccountable as the Pharmacopœia directs the filtered squill vinegar to be added to honey which has already been clarified and which is presumably cold, while the density should of course, be adjusted when the product has attained the normal temperature.

In Nos. 9 and 11 it will be noticed that the cupric reducing power is low, also both are strongly dextro-rotatory. This can only be explained on the assumption that sophistication with glucose has taken place during manufacture, or that honey adulterated with glucose has been used. The latter is more likely, and an amended and much amplified description of honey seems to be called for in the official monograph. No honey should be recognised which shows a + deviation; when tested as described with absolute alcohol not more than a faint white cloud should appear at once, and when treated with one drop of volumetric iodine solution no decoloration should take place, and the augmentation in colour should only be such as results from the diffusion of the unaltered iodine through the liquid.

The method adopted for the calculation of the percentage of glucose is that described by L. K. Boseley.

In the absence of glucose—

$$\text{Cane Sugar} = \frac{(\text{direct} - \text{invert reading})\ 100}{144 - \dfrac{t^\circ\ \text{C.}}{2}}$$

$$\text{Invert Sugar} = \frac{(\text{cane sugar} - \text{direct reading})\ 100}{44 - \dfrac{t^\circ\ \text{C.}}{2}}$$

If glucose is indicated by the invert reading being + instead of −, it is necessary to determine the cupric reducing power.

13·024 Gm. pure sucrose are inverted and made up to 100 C.c. in the usual way; 10 C.c. of this solution are neutralised and diluted to 100 C.c. = Solution A.

20 C.c. of the solution used for direct reading are diluted to 100 C.c. = Solution B.

Two flasks, each containing 50 C.c. fresh Fehling's solution, are plugged with cotton and heated in a water bath until the temperature is constant. To one is added 10 C.c. solution A to the other 10 C.c. of solution B, the cotton plug replaced, and heat continued for exactly ten minutes. Each is filtered rapidly, washed with boiling water, dried, and ignited. The complete oxidation of the copper is ensured by moistening with pure nitric acid, and again igniting.

$$\left.\begin{array}{r}\text{Cupric reducing power, calculated}\\ \text{as percentage of invert sugar....}\end{array}\right\} = \frac{\text{CuO from B}}{4\ \text{CuO from A}} \times 100.$$

The formulæ then become—

$$\text{Cane Sugar} = \frac{(\text{direct} - \text{invert reading})\ 100}{144 - \dfrac{t^\circ\ \text{C.}}{2}}$$

$$\text{Invert Sugar} = \frac{\text{Cane Sugar} - \text{direct reading} + 4\ \text{C.r. power}}{4 + \dfrac{44 - \dfrac{t^\circ\ \text{C.}}{2}}{100}}$$

$$\underline{\text{Glucose}} = 2\,(\text{C. r. power} - \text{Invert Sugar}).$$

In these calculations it is presumed—(*a*) that glucose contains on an average 20 per cent. water; (*b*) that the deviation of glucose solids is 133·98, or about twice cane sugar; (*c*) that the cupric reducing power of solids = 53·31, or about half cane sugar, which is 105·3; (*d*) that the direct and inverted readings of glucose are practically identical. The *composition* of glucose is not taken into account, the calculations being based entirely upon the deviation and cupric reducing power.

Much of the analytical work has been done in John Bell and Co.'s laboratory by Mr. D. Dick, of whose work the author desires to record his appreciation.

Toilet Ammonia.

Solution of ammonia (10 per cent.), 250 fluid parts; green soft soap, 120 parts; oleic acid, 10; oil of myrcia acris, 1; oil of rosemary, 1; oil of verbena, 5; water to produce 1,000 fluid parts. Dissolve the soap in warm water, 500. When cool, add the ammonia, the essential oils, the oleic acid, and lastly enough water to make up the volume.—*Amer. Drugg.*, **42**, 314.

HOW TO MAKE A WATER-DRYING OVEN.

BY ARTHUR W. NUNN.

The following is the description of a water-oven which will answer the requirements of students, and if made in sheet-tin will be inexpensive. I believe 1s. 6d. will cover everything, tools, of course, excepted, and will last for several months, even with constant use; sheet copper can, if preferred, be used, and, although the cost will be accordingly increased, the durability will be much greater.

The tools required will be a copper bit for soldering, a tenon saw, a pair of tinman's snips, pliers, a rule, a square, and, in addition, some soldering solution, which is made by "killing" hydrochloric acid with a few pieces of zinc, allowing it to settle and pouring off the supernatant liquor; and some solder.

The size of that about to be described is small, but will answer all the requirements of the student, and is suitable for drying precipitates, etc., and for making experimental quantities of chemicals. In order to get the necessary squareness make two cubes of wood out of ¾-in. floor boarding, the outside dimensions of the larger cube to be 5½ × 5½ × 4¼ in, and the smaller, 4½ × 3¾ × 2¾ in.

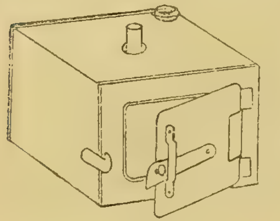


Fig A

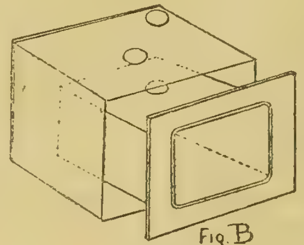


Fig. B

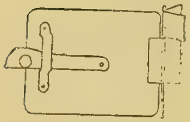


Fig C

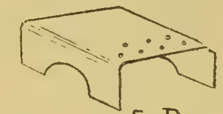


Fig D

Having made the cubes perfectly true and smoothed them with round sand-paper, take the larger one and bend a piece of sheet-tin 5½ inches wide and of sufficient length to pass round and over lap about half an inch, fix the work by means of a heavy weight, and proceed to solder the two ends together.

Perhaps a hint in soldering may be of use. Having made the copper bit sufficiently hot to melt the solder, file the end of the bit clean with a good rough file, dip the bit in the soldering solution, and "tin" the end by coating it with solder, which will be found to be an easy matter after having plunged the hot bit in the soldering solution.

The bit is then ready for use; now, with a camel-hair pencil apply some soldering solution along the edge to be joined, and run solder along by means of the bit. The solder will set almost immediately, and a sound water-tight joint will be the result. Before proceeding further and before removing from the block, make two round holes (see Fig. B) in the side opposite the soldered joint (which for neatness will form the bottom of the outer casing), by means of a narrow sharp chisel and a hammer, and finishing with a half-round file; the centre hole is to be ¾ in. in diameter, and the corner one, which is to take a screw cap for filling, must be of such a size that the threaded part of the cap will just fit in. Still keeping the tin on the block, fit the back and front by taking two pieces of tin plate, 4¾ × 6 in., and bending the edge over all round like a box lid, The back piece can now be soldered on, being very careful at the corners to guard against leaks.

We now turn our attention to the other piece of tin which is to form the front piece of the oven, and while still on the block and using a sharp chisel and hammer as before, cut out a square hole, 3¾ in. long × 2¾ in. wide (see Fig. B), the end of the smaller wood cube will form the guide. This hole must be carefully and cleanly cut, as it is to take the oven or inner tin box, which can now be made.

Proceed just as in making the larger one, but there will be the back only required to be fixed on in this case, as the oven door will form the other end.

Having made the tin case and soldered on the back end, before removing from the block cut a round hole on that side which will form the top of the oven, the hole to be of sufficient size to allow a piece of brass tube 1¾ in. long and ½ in. diameter to fit in comfortably. The tube must be soldered in carefully, and is used to take a thermometer in order to ascertain the temperature of the oven when in use. Slide the oven off the block, and having passed the open end through the square hole in the larger piece of tin (Fig. B) turn the edge out about 1/16th in. all round by means of wide pincers, so that it will form a flange, thus allowing it to be soldered to the large piece or lid of the outer tin case. Now fit the whole together and solder round the edge as before (Fig. A). It will be noticed that the brass tube projects through the hole previously made in the larger tin, and that there is an opening of about 1/16th in. all round; this is to allow for escape of steam. Carefully solder on the thread of the screw cap and test the oven for leakage by filling with boiling water.

Being satisfied on that point, the next step will be to make and fix the oven door (Fig. C). If, however, a saving of time be required it is only necessary to cut a piece of tin rather larger than the opening and suspend from the top by bending the edge. It will make a better job, however, to construct the oven door as follows: Cut a piece of tin about ¼ in. larger all round than the opening it is to cover, leaving a piece projecting on one side to form the centre part of the hinge (Fig. C). Fit the latch by riveting one end into the centre of the door and solder on to the side of the oven a catch to take it (Fig. A).

The hinge is made by soldering a piece of stout wire on to the door and bending back the projecting piece of tin, as indicated in Fig. C, and fixing with solder. The top and bottom pieces are tin bent over the two projecting ends of the wire and soldered on to the oven. The latch can have a small button, fastened to facilitate opening and shutting. The latch and catch should be made of rather stouter tin than that used for making the oven.

Fig. D is made from one piece of tin or copper by bending to the shape indicated, and is to slide into the oven to form a shelf.

THE NEW CHEMISTRY.*

Just what shall be done with the newly-discovered radio-active substances is a problem that perplexes every thinking physicist. They refuse to fit into our established and harmonious chemical system; they even threaten to undermine the venerable atomic theory, which we have accepted unquestioned for well-nigh a century. The profound mathematical deductions of the modern school of English physicists, based upon the startling phenomena presented by the Röntgen and Becquerel rays, as well as by the emanations of radium and polonium, may compel us to change our notions of ultimate units to such an extent that the old-time atom may be compelled to give place to something infinitely smaller. The elements, once conceived to be simple forms of primordial matter, are boldly proclaimed to be minute astronomical systems of whirling units of matter. This seems more like scientific moonshine than sober thought: and yet the new doctrines are accepted by Lodge, Crookes, and by Lord Kelvin himself.

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* Reprinted from the *Scientific American*.

The abandonment of the atom, at first faintly advocated, is now seriously discussed. When it is considered that radium, despite its prodigious radio-activity, loses an inappreciable amount of its mass—an amount calculated by Becquerel to be one gramme in a billion years per square centimetre of surface —the enormity of the atom and its utter inadequacy to account for the phenomena presented become manifest. Radium does emanate particles of some kind—this much, at least, is certain. These particles cannot be atoms; for atoms are so large that the active substance would rapidly lose in weight. The necessity of abandoning the atomic theory was long ago discussed by Crookes. His study of the phenomena of the vacuum tube at high exhaustions had led him to formulate his "radiant matter" theory, for which he was compelled to bear not a little ridicule. To him it seemed that the luminous, electric, or mechanic phenomena of the vacuum tube could be accounted for only by assuming the existence of something much smaller than the atom—fragments of matter, ultra-atomic corpuscles, minute things very much lighter than atoms, and, indeed, the foundation stones of which atoms are themselves composed. Prof. J. J. Thomson, Sir Norman Lockyer, and Lord Kelvin later adopted some of his views. The discovery of the radio-active substances has placed the radiant matter theory on a firmer footing.

If we must discard the atom, what are we to accept in its place? Two new conceptions have been found necessary—the "ion" as the unit of matter, the "electron" as the unit of force. The new chemistry holds that matter and force are different manifestations of the same thing. Inertia is the characteristic, indeed the indispensable, property of both matter and electricity. What could be simpler than to assume that the ultimate particles of each are one and the same? Prof. Fleming has declared that "we can no more have anything which can be called electricity apart from corpuscles, than we can have momentum apart from matter." And Sir Oliver Lodge has given it as his opinion that the Dalton atom, which was once an axiomatic conception of chemistry, may consist of a certain number of electrons rapidly moving in orbits.

Vague though many ideas of the modern chemist must necessarily be when his science is passing through an important transition stage, still he has calculated with no little nicety the masses of ions and electrons. Sir Oliver Lodge puts it thus: If we imagine an ordinary-sized church to be an atom of hydrogen, the electrons constituting it will be represented by about 700 grains of sand, each the size of an ordinary full stop, rotating, according to Lord Kelvin, with inconceivable velocity. Crookes puts it still more graphically. The sun's diameter is about one and a-half million kilometres, and that of the smallest planetoid about twenty-four kilometres. If an atom of hydrogen be magnified to the size of the sun, an electron will be about two-thirds the diameter of the planetoid.

If the electrons of all elements are exactly alike, or, in other words, if there is but one matter, just as there is but one force, and if the elements be but the various manifestations of that one matter, due to a different orbital arrangement of electrons, it would seem that we are fast returning to the conceptions of the middle-age alchemist. The transmutation of metals involves but the modification of the arrangement of electrons.

Many an old chemist looks askance at these modern views on matter. Few, indeed, venture to accept them without qualification. Of one thing at least we are certain—the atomic theory, if it is not a theory of the past, must be satisfactorily modified to account for the phenomena of radio-activity.

PARIS SKETCHES.

(3) A TARIFF QUESTION.

French Duties on Imported Medicines.

To say that Mr. Chamberlain's proposals are creating nearly as much interest in foreign parts as they are at home would not be strictly the truth. But there can be little doubt that the progress of his campaign is being very carefully watched by competing countries. At any rate, this is the case in France, and it was particularly noticeable to a Journal representative that Paris chemists and manufacturers of proprietary medicines were keenly interested in this matter. There is, perhaps, no class of goods whose import regulations are so intricate as proprietary medicines; and to know how to steer these articles safely through the French Customs requires long and careful study, whilst the vagaries of the Customs House authorities would tax the patience of the most patient man ever born.

Perhaps no person in Paris better understands the ins and outs of the Customs House authorities than does Mr. Birnie Scott, of the firm of Messrs. Scott and Co., and probably no firm imports more English and American specialties into France than does his firm; their Paris premises are situated behind the Madeleine, and are overlooked by the Lavoisier statue, whilst they have branches in New York and London. It was on Mr. Scott that a Journal interviewer called in order to get a few particulars of the tariff system existing in France. There is no equivalent in France, it appears, for medicine stamp duties, and the French chemist has

No Somerset House to Deal With.

But, on the other hand, foreign medicines manufactured abroad have to pay to the Customs comparatively enormous duties. In some cases (where possibilities of sufficiently large sales warrant it) some English manufacturers, in order to avoid these duties, prepare their specialties in France, which means, of course, an outlay of capital in a foreign country which would otherwise be expended at home. In the event of Mr. Chamberlain's proposals becoming law, Mr. Scott, who had been explaining all this, was of opinion that French manufacturers who did anything like a large trade with this country might, in many instances, find it profitable to transfer some of their plant to England, to the benefit of British labour. "But," continued the medicine importer, "a 10 per cent. tax is not enough to do any good. Why, the duty on some preparations coming into France is as much as nearly 200 per cent.!"

"Two hundred per cent.! Surely that must be an exceptional case?" suggested the interviewer.

"Well, perhaps it is," admitted the importer, "but, in any case, the average duty on proprietary medicines is certainly more than double that proposed by Mr. Chamberlain. But the tax varies so much that it is impossible to say what the average is. The duty on some medicines is considerably more than their cost price, whilst on others it is only a twentieth part of their value."

"I suppose all this is worked out on a definite system?"

"Not at all. Things are taxed erratically. There is no general plan, or, if there is, it is so involved that nobody understands it. It is certain the Customs officials do not," was the reply from a man who had evidently had dealings with them.

"Then, again," proceeded Mr. Scott, warming up to his subject,

"Any Rubbish can be Dumped Down

in England, whereas there are a large number of preparations they will not have here at any price. Some English and

American patent medicines which enjoy a large sale in Great Britain are not even allowed to enter France, neither are quite a number of special preparations of simple drugs."

"Do you mean to say," asked the *P.J.* inquirer, "that some proprietaries are forbidden?"

"Certainly! Not because they are rubbish," he hastened to explain, "and goodness knows why. All medicines not specifically tariffed are prohibited, so that if you do not find the name of the medicine in any of these volumes," and here he pointed to half-a-dozen huge tomes of the *Tarif des Douanes de France*, "you may take it for granted it is prohibited. Some medicines, however, are specifically prohibited."

"Some articles, I suppose, are not tariffed because the proprietors have not applied for permission?"

"That is so. In every case permission has to be obtained before any proprietary medicine can be imported into France. In the first place, the would-be importer sends samples to the Minister of Commerce, who submits them to the School of Pharmacy. After analysis, the School sends back a report to the Minister, and from this report he decides whether to allow it to come in or not. But if he refuses he gives no reason for it."

"But it does not often happen that an English proprietary is refused admission?"

"Oh, yes, it does. In fact, some patent medicines which have an enormous sale in England and America are forbidden here. For instance . . . . " And here Mr. Scott mentioned the name of a very popular English patent which is

NOT ALLOWED TO ENTER THE FRENCH PORTS.

But the Journal representative had actually seen a large display of this article in the window of a high-class pharmacy, and he asked Mr. Scott how he could account for this; but he could not account for it.

"It is certain that this article is prohibited," he explained, "and it is just as certain that it comes here in spite of the prohibition; but by what means it gets there I cannot say, unless it be that the importer has obtained a special permission in spite of the fact that it is definitely marked 'prohibited' in the tariff books."

Mr. Scott then proceeded to give some examples of the discrepancies in the way various articles are taxed.

"Some of Burroughs and Wellcome's products," he proceeded, "are very heavily taxed. For instance, a bottle of phenacetin tabloids, which costs about 4d., has to pay duty to the extent of 7½d. On the other hand, chlorate of potash tabloids are taxed by the kilogramme and chlorate of potash and borax pay about 8d. per lb., which makes the duty on each bottle a mere fraction of a penny. The hypodermic products of the same firm pay a duty of 50 per cent. *ad valorem*, which amounts to about 3d. per tube."

The tariffs on other English proprietaries vary very considerably. For instance, Holloway's Pills pay a duty of 6d. per box, whilst on the 1s. 1½d. size box of Beecham's Pills the tax is 3d. A duty of about 1s. 2d. per lb. is charged on Kutnow's Salts. Bishop's effervescing preparations are taxed to a similar extent. The very high duty of 16s. per lb. is charged for lactopeptin, and Elliman's Embrocation pays 2d. for a 1s. 1½d. bottle. These few examples selected from the many others cited by Mr. Scott will serve to show how very wide are the discrepancies in the French system of tariffs. The interviewer then went on to ask particulars of medicines other than proprietaries. It seems that homœopathic tinctures pay about 9d. per ounce, and compound rhubarb pills prepared according to the B.P. pay 7f. 50c. per kilogramme, or about 3s. per lb. Rubber goods are taxed according to weight, and the duty amounts to about 1s. per lb. A yard of adhesive plaster pays an impost of 7½d., whilst the same length of soap plaster only pays 6d.

Chemicals are classed as *produits chimiques*, and pay 5 per cent. of the invoiced price. Raw materials, such as senna leaves, cardamoms, and so on, are duty free. Turpentine capsules, for some unknown reason, are prohibited, but you can import tons of turpentine.

All these particulars were mentioned in the course of conversation, and the interviewer, recalling the favourite phrase,

"THE MOST FAVOURED NATION,"

which keeps cropping up on his own side of the Channel in connection with the fiscal discussions, put the question:

"Does the most-favoured-nation clause in the commercial treaty between the United Kingdom and France in reality give a noticeable preference to England in the matter of drugs and chemicals?"

And the answer came very promptly, "Yes, most decidedly," and forthwith Mr. Scott proceeded to enumerate a number of examples, but it will suffice to mention here the case of quinine. This article, imported from America, is charged with a duty of nearly 6d. per ounce, whilst that coming from an English port pays less than 4½d. per ounce.

Satisfied that Great Britain was really "the most favoured nation," at any rate as regards medicines, the Journal representative, not wishing to encourage an argument on the fiscal question, changed the subject; for the importer of medicines showed evident symptoms of having different views on the matter to those held by his questioner. So, reluctantly leaving quinine and politics in the background, Mr. Scott gave vent to his feelings by expressing his opinions about Customs House officials generally. It appeared that that morning he had been having a dispute with them about some tin lozenge boxes; for the containers are taxed as well as the articles. It happened in this wise:—It appears that if a tin box is hermetically sealed it is allowed in duty free. Now, the Customs took it into their heads to say that certain boxes, although the importer had declared them to be hermetically sealed, were soldered in such a manner that they could be used again. They therefore demanded a fine of 60f., which really did seem rather absurd.

"But shall you pay this?" asked the *P.J.* representative.

"There is no way out of it," was the exasperated reply, "unless I like to take the loss of the goods. Of course, I could apply for an *expertese*, which means a fee of 25f. each to two arbitration officials."

"You might lose even then?"

"Quite possible!"

Sachet Powders.

Heliotrope.—Tonka beans in powder, 100; powdered benzoin, 30; powdered orris root, 100; powdered rose leaves, 100; vanillin, 3; geranium oil, 1; heliotropin, 10; musk residues, 5. *Rose.*—Powdered orris, 100; powdered rose leaves, 100; lignaloe wood sawdust, 100; powdered benzoin, 30; geranium oil, 5; artificial rose oil, 3. *Violet.*—Powdered orris root, 250; sandalwood sawdust, 50; ylang ylang oil, 1; powdered benzoin, 15; musk residues, 5; ionone, 3; concrete orris oil, 1. *Lily of the Valley.*—Powdered orris root, 600; sandalwood sawdust, 100; powdered benzoin, 60; musk residue, 16; muguet, 20; ylang ylang oil, 1; lignaloe oil, 4. *Chypre.*—Sandalwood sawdust, 1,000; powdered rose leaves, 1,000; cedarwood sawdust, 1,000; lavender flowers, 300; artificial musk, 3; lignaloe oil, 30; artificial neroli oil, 5. *Lilac.*—Powdered orris root, 600; powdered benzoin, 40; terpineol, 16; musk residues, 20; artificial jasmin oil, 1. *Peau d'Espagne.*—Powdered orris root, 200; sandalwood sawdust, 100; cedarwood sawdust, 100; powdered benzoin, 30; artificial neroli oil, 3; lavender flowers, 100; musk residues, 10; civet residues, 5; bergamot oil, 8; verbena oil, 2; artificial jasmin oil, 2.—*Seifensieder Zeit.*, **30**, 404.

THE STUDENTS' COLUMNS.

[PRIZE COMPETITION.]

Conditions.

The following examination-paper is based on the articles which have been appearing each week in the Students' Columns since September 5. One or more prizes of books, according to the merits of the answers received, will be awarded to those Student-Associates of the Pharmaceutical Society whose replies to the questions shall be adjudged to be the best. Only Student-Associates of the Society who have never sat for the Minor Examination may compete. Any books may be used in answering the questions, but each competitor will be required to sign a declaration that no assistance has been given him by any person whatever, either by way of answering the questions or of recommending books to be consulted, and that the competitor has never sat for the Minor Examination. Replies must be addressed to the Editor of the *Pharmaceutical Journal*, 17, Bloomsbury Square, London, and will be received up to Monday, December 21. Any apprentice, otherwise eligible, who shall apply to be elected a Student-Associate before that date will be allowed to compete. Pseudonyms or initials may be adopted, but the full name and address of the competitor must in every case be sent, together with the signed declaration already referred to. The names of competitors who succeed in gaining prizes will be published in the *Pharmaceutical Journal*, but the names of unsuccessful candidates will not appear.

Examination Questions.

1. Draw a diagram to scale to illustrate what you consider to represent a No. 16 sieve. State where the official definition relating to the size of sieves is to be found, and criticise this statement.

2. By means of a pestle and mortar, reduce small quantities of the following materials to powder:—

Nux vomica seeds
Asafetida
Ipecacuanha
Hard soap
Calumba root.

Relate your experience and make observations upon the operations and their results.

3. State the reasons for drying fresh vegetable drugs:—

(1) As quickly as possible;
(2) At a temperature as low as possible.

What means may be utilised to facilitate the process?

4. Mention five important indigenous drugs and state what you know relative to the merits of these and the same drugs imported from foreign countries.

5. Write the following in unabbreviated Latin:—

Take of—

Potassium iodide	10 grains
Potassium bicarbonate	10 grains
Syrup	20 minims
Water ....to	1 ounce

Make a mixture; to be taken twice daily after meals. Send twelve doses.

6. Criticise the following prescriptions:—

(1)

℞	Potass. chlorat.	gr. 10
	Acid. hydrochlor.	♏3
	Aq ....ad	℥j.

M. s. a.

(2)

℞	Tinct. aurant	ʒss.
	Syr. limonis	ʒj.
	Mist. cretæ ....ad	℥j.

(3)

℞	Potas. iodid	gr. v.
	Liq. fer. perch.	♏x.
	Inf. quassiæ ....ad	℥j.

7. Convert the quantities in the following formula into approximately equivalent metric quantities; show the working in full:—

℞	Rochelle salt	2 drachms
	Sodium bicarbonate	2 scruples
	Tartaric acid	38 grains
	Syrup	160 minims
	Water	½ pint

8. Nearly fill two test tubes with cold water. By means of a small gas flame or spirit lamp heat one near the upper surface of the water and the other at the bottom. Record your observation of what occurs, and explain the causes of the phenomena.

9. State what you know about the variability in medicinal activity shown by vegetable drugs collected at different seasons of the year; and illustrate your answer by reference to specific examples.

10. Explain the occurrence of hydrocyanic acid in the galenical preparations of cherry-laurel leaves, bitter almonds, wild black-cherry bark; and point out in what way the official directions for the various preparations are framed with a view to securing the best results.

11. Discuss the available means for producing fine powders of vegetable drugs; and describe the best methods which should be adopted to secure the best results in any three examples selected by yourself.

12. Describe in simple terms from your own observations any plant available for examination at the present season of the year. The plant selected may be wild or cultivated, and the description should include the whole plant from root to flower or fruit.

13. Take 149 grains of tartaric acid dissolved in one fluid ounce of distilled water; add gradually 99·5 grains of potassium bicarbonate. Describe what occurs; evaporate the product on a water-bath, and state what reasons there are for considering the product to be a chemical compound, and not a mechanical mixture of the tartaric acid and potassium bicarbonate.

14. All prescriptions for "mixtures" may be classified under the following heads:—

(1) Combinations of miscible fluids.
(2) Solutions of solids in a fluid vehicle.
(3) Insoluble solids suspended in a fluid vehicle.
(4) Combinations of fluids which are immiscible without special treatment.
(5) Combinations including any two or all of the foregoing possible cases.

Write five prescriptions to illustrate the foregoing five typical cases.

15. Why are freshly prepared infusions preferable to so-called concentrated infusions? What precautions may be adopted to prolong the time during which a freshly-made infusion may be kept in good condition?

16. How are plants able to absorb from the soil the various mineral substances found in them, although these substances may occur in the soil in a condition insoluble in water?

17. Describe digitalis and coca leaves in simple language, avoiding the use of technical terms.

18. State how you can prove that carbon, hydrogen, and nitrogen are constant constituents of all vegetable tissues.

THE ASSAY OF CRUDE COCAINE.*

BY WILLIAM GARSED,
Salters' Company's Research Fellow (1900-1903).

Four distinct alkaloids, cocaine, truxilline, cinnamyl-cocaine, and tropa-cocaine, are known to exist in coca leaves, though all four may not be present (except, perhaps, in minute quantity) in every sample. Of these cocaine is the most important. In the process of purification of the crude alkaloid a certain amount of uncrystallisable substance is always obtained; at one time this was called "amorphous cocaine," and from it the other alkaloids mentioned above were subsequently isolated by various workers. Truxilline was originally called cocamine and isatropyl-cocaine by two of its investigators, but the name truxilline is now more generally used.

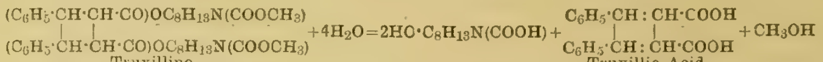
Cocaine, truxilline, and cinnamyl-cocaine are derivatives of ecgonine. When heated with strong acids or alkalis they undergo hydrolysis, yielding ecgonine and methyl alcohol, and respectively benzoic, truxillic, and cinnamic acids. The production of ecgonine from each of the alkaloids has considerable commercial value, for the process of hydrolysis can be reversed, and from ecgonine, benzoic anhydride and methyl alcohol, cocaine can be prepared, the reaction being almost quantitative. After crystallising out the cocaine as far as possible from the crude alkaloid, the amorphous portion is subjected to hydrolysis, and from the ecgonine thus obtained, more cocaine is prepared. The whole of the alkaloid contained in the leaves becomes in this way commercially valuable.

Tropa-cocaine is not a derivative of ecgonine, but of pseudotropine. On hydrolysis it yields the latter substance and benzoic acid.

The following equations illustrate these hydrolytic decompositions:—

$$\underset{\text{Cocaine.}}{(C_6H_5CO)OC_8H_{13}N(COOCH_3)} + 2H_2O = \underset{\text{Ecgonine.}}{HO{\cdot}C_8H_{13}N(COOH)} + \underset{\text{Benzoic Acid.}}{C_6H_5COOH} + \underset{\text{Methyl Alcohol.}}{CH_3OH}$$

$$\underset{\text{Cinnamyl-Cocaine.}}{(C_6H_5{\cdot}CH:CH{\cdot}CO)OC_8H_{13}N(COOCH_3)} + 2H_2O = HO{\cdot}C_8H_{13}N(COOH) + \underset{\text{Cinnamic Acid.}}{C_6H_5{\cdot}CH:CH{\cdot}COOH} + CH_3OH$$



$$\underset{\text{Truxilline.}}{\begin{array}{l}(C_6H_5{\cdot}CH{\cdot}CH{\cdot}CO)OC_8H_{13}N(COOCH_3)\\ \quad\;\; | \quad\;\; | \\ (C_6H_5{\cdot}CH{\cdot}CH{\cdot}CO)OC_8H_{13}N(COOCH_3)\end{array}} + 4H_2O = 2HO{\cdot}C_8H_{13}N(COOH) + \underset{\text{Truxillic Acid.}}{\begin{array}{l}C_6H_5{\cdot}CH:CH{\cdot}COOH\\ \qquad\;\; | \qquad | \\ C_6H_5{\cdot}CH:CH{\cdot}COOH\end{array}} + CH_3OH$$

$$\underset{\text{Tropa-cocaine.}}{(C_6H_5CO)OC_8H_{14}N} + H_2O = \underset{\text{Pseudotropine.}}{HO{\cdot}C_8H_{14}N} + \underset{\text{Benzoic Acid.}}{C_6H_5{\cdot}COOH}$$

Liebermann proved the existence of two isomeric kinds of truxilline, which he named α-truxilline and β-truxilline respectively. They can scarcely be distinguished from each other, except that on hydrolysis they yield respectively isomeric α- and β-truxillic acids, which have different melting points, and form barium salts of different solubility in water. α-Truxilline constitutes the greater part of natural truxilline. In addition to the four alkaloids already mentioned, the discovery of others has from time to time been announced, but their presence requires confirmation. In any case, they occur only in very minute quantities, and for the purposes of this paper may be disregarded. Tropa-cocaine is much less toxic than cocaine, otherwise its action is similar; moreover, it is found only in very small quantity, hence it need not receive much consideration in an assay process. The chief alkaloid cocaine, and the two secondary ones, cinnamyl-cocaine and α-truxilline, are thus left to be dealt with. The determination of the last-named is particularly important, for it has been shown by Liebreich and by Stockman to be much more toxic than cocaine.

In a previous paper, in conjunction with Professor Collie,[1] the behaviour of pure cocaine hydrochloride towards a large number of reagents was described. Since that time the behaviour of several small samples of crude alkaloid (obtained from commercial samples of liquid extract of coca examined by the author[2]) towards the same and other reagents has been studied in the hope that the secondary alkaloids in the crude material might reveal themselves by the exhibition of some characteristic property not possessed by cocaine. In its behaviour the crude alkaloid was found to differ slightly in several respects from pure cocaine, but the differences were not sufficiently pronounced to form a foundation for a separation process. The quantity of material at hand was, moreover, very small, and it became apparent that if any further progress was to be made it would be necessary to obtain pure materials on which to work.

Samples of tropa-cocaine, cinnamyl-cocaine, truxilline, and truxillic acid were, therefore, obtained from E. Merck, and a systematic comparative study of the properties of the four alkaloids commenced. As might be expected with substances so closely allied in constitution, they were found closely to resemble each other in chemical behaviour; so much so, in fact, that no assay process, based directly on the properties of the alkaloids themselves, could be devised. Attention was then directed to the acid products of hydrolysis, namely, benzoic, cinnamic, and truxillic acids, the idea being that if, after hydrolysing the alkaloids, the respective proportions of each acid in a mixture of the three could be determined, then the respective percentages of the three alkaloids originally present could be calculated.

The paper is divided into two sections, each of which is subdivided in the following manner:—

Section I.

A direct comparison of the chemical and physical properties of cocaine, cinnamyl-cocaine, truxilline, and tropa-cocaine.

(*a*) Behaviour towards reagents in aqueous solution.
(*b*) Solubility in organic liquids.
(*c*) Oxidation experiments with potassium permanganate.

Section II.

A comparison of the chemical and physical properties of the hydrolytic acid products of the four alkaloids, namely, benzoic, cinnamic, and truxillic acids.

(*a*) Oxidation experiments with potassium permanganate.
(*b*) Experiments on the absorption of bromine.
(*c*) Steam distillation experiments.
(*d*) Solubility experiments.
(*e*) The assay of mixtures of the acids.
(*f*) Experiments on the hydrolysis of the alkaloids.
(*g*) Assay of the crude alkaloid obtained from different kinds of coca leaves.

Communicated to the Pharmaceutical Society of Great Britain, at an Evening Meeting in London, November 10, 1903.

[1] "On the Determination of Cocaine"—*P.J.* [4], **13**, 232.

[2] "Liquid Extract of Coca"—*P.J.* [4], **14**, 214.

Chemical and Physical Properties of Cocaine, Cinnamyl-cocaine, Truxilline, and Tropa-cocaine.

The cocaine used in these experiments was a well-crystallised specimen; it answered satisfactorily to all the usual tests for cocaine, including the ammonia test (Maclagan's test) and the permanganate test. The cinnamyl-cocaine and the tropa-cocaine were also good, crystalline specimens and their melting-points were found to agree well with those given by Giesel, the discoverer of both. When dissolved in dilute acid, precipitated with ammonia, and extracted with ether, each alkaloid was quantitatively recovered on evaporation of the ethereal solution. The cinnamyl-cocaine in acid solution instantly reduced potassium permanganate.

Truxilline, like its salts, is an amorphous substance, having no definite melting-point. When dissolved in dilute acid, and re-extracted as above described, the sample under investigation was not quantitatively recovered, there being a loss of 8 per cent., due to the presence of about 1·5 per cent. of moisture, and about 6·5 per cent. of an impurity extremely soluble in water, but insoluble in dry ether. The truxilline was freed from this impurity, and the purified substance used in all the experiments hereafter described. Like cocaine, it did not perceptibly reduce permanganate.

Behaviour Towards Reagents in Aqueous Solution.

The hydrochlorides of cocaine and tropa-cocaine, and the sulphates of truxilline and cinnamyl-cocaine, were used in solutions of gradually decreasing strength:—1 part of base in 100 of solution, 1 in 500, 1 in 1,000, 1 in 5,000, and 1 in 10,000.

Five per cent. solutions of the reagents were generally used (in the case of picric acid a saturated solution was employed). In every experiment a neutral solution of alkaloidal salt was first employed, then one acidified, so as to contain about 3 per cent. of HCl. The acid solutions were frequently found to be more sensitive than the neutral ones.

The following reagents were not sensitive in a dilution of 1 in 100:—Neutral potassium oxalate, Rochelle salt, ferric chloride, cupric sulphate, chlorine water.

The following were either only just sensitive or not sensitive at all in a dilution of 1 in 1,000:—Potassium thiocyanate, potassium ferrocyanide, potassium ferricyanide, potassium iodide.

The same remark applies to the following in a dilution of 1 in 5,000:—Borax, bromine water, mercuric chloride, potassium cyanide, potassium permanganate.

In a dilution of 1 in 10,000 the following were about equally sensitive to all four alkaloids:—Mercuric potassium iodide, iodine in potassium iodide, phosphomolybdic acid, and picric acid. This is what might be expected, since these four are very generally employed as alkaloidal reagents.

In general the truxilline salts were found to be rather less soluble than those of cocaine, the corresponding salts of cinnamyl-cocaine and tropa-cocaine lying, as a rule, between the other two. The greatest divergence was found in the case of the chromates, and the results obtained are shown in the following table:—

Reagent.	Cocaine.		Truxilline.		Cinnamyl-cocaine.		Tropa-cocaine.	
—	Neutral.	Acid.	Neutral.	Acid.	Neutral.	Acid.	Neutral.	Acid.
	One part in		One part in		One part in		One part in	
Chromic Acid............	500	1,000	10,000	10,000	1,000	5,000	1,000	5,000
Potassium Chromate	100	1,000	1,000	10,000	1,000	5,000	100	5,000
Potassium Dichromate ..	100	1,000	5,000	10,000	5,000	5,000	1,000	5,00

From this it will be seen that in neutral solution the cocaine salt is twenty times more soluble than that of truxilline. For the purposes of quantitative separation, however, this cannot be regarded as a very great difference; moreover, the truxilline salt is not by any means an insoluble substance. A neutral solution containing equal parts of cocaine and truxilline hydrochlorides was diluted so as to contain less than 1 in 500 of the former salt, and then precipitated with chromic acid. The precipitate (presumably truxilline chromate) was removed by filtration through a small filter paper. Theoretically, the filtrate should contain all the cocaine and only a little of the truxilline, but when the alkaloid was extracted by making the solution alkaline with ammonia and shaking out with ether, only 70 per cent. of the cocaine known to be present was recovered. Evidently truxilline chromate carries cocaine chromate down with it in considerable quantity, and no hope of a quantitative separation by this method can be entertained; moreover, the fact that the solubility of cinnamyl-cocaine chromate lies between that of the other two salts introduces a further source of difficulty.

Solubility Experiments.

The following seven organic liquids were tried:—Alcohol, acetone, acetic ether, benzene, chloroform, ether, and petroleum ether. All four alkaloids are readily soluble in the first six of these solvents; cocaine and tropa-cocaine are also readily soluble in petroleum ether, but truxilline and cinnamyl-cocaine are only sparingly soluble in it. The solubility of the two latter alkaloids in petroleum ether was accordingly determined. For this purpose an excess of alkaloid was placed in a stoppered bottle with petroleum ether, and left, with occasional agitation, for two days. A measured quantity of clear solution was then drawn off, the solvent evaporated on a water-bath, and the residue weighed. In the case of truxilline a second determination was made, on different lines. A weighed quantity (0·10 Gm.) was dissolved in dilute acid, ammonia added until alkaline, and the whole well shaken with 10 C.c. of petroleum ether; the whole of the alkaloid did not dissolve, part remaining as a sticky mass on the side of the separator. The petroleum ether was separated and evaporated on a water-bath. The residue weighed 0·0546 Gm. (about half the amount originally taken).

Solubility in Petroleum Ether.

Cinnamyl-cocaine	1 in 333
Truxilline (Method No. 1)................	1 in 234
Truxilline (Method No. 2)	1 in 228

It is evident, therefore, that no separation based on the use of petroleum ether as an extracting agent can have any claim to accuracy.

Oxidation Experiments with Potassium Permanganate.

The fact that potassium permanganate is instantly reduced by cinnamyl-cocaine is well known, and the reaction is used as a test for the latter alkaloid in cocaine. Truxilline and cocaine are not readily oxidised by potassium permanganate.

Experiments were undertaken to ascertain:—(1) Whether any substance of an alkaloidal nature could be extracted from the products of the action of permanganate on cinnamyl-cocaine. (2) Whether, after the same treatment, cocaine and truxilline could be quantitatively recovered. A volumetric process whereby the amount of oxidisable alkaloid might be calculated from the amount of permanganate used is quite out of the question, for there is no defintie end reaction.

Method of Operation.—A weighed quantity of alkaloid was dissolved in dilute sulphuric acid, and N/2 permanganate run in, about 1 C.c. at a time, the whole being well shaken after each addition. The reduction, which at first was very rapid, soon began to slow down. Several experiments were conducted, and in some an excess of dilute sulphuric was used, but in others only sufficient was added to dissolve the alkaloid. In some again, permanganate was run in until, after well shaking, no odour of benzaldehyde could be detected; in others, the addition of permanganate was stopped when the reduction began to slow down, although the odour of benzaldehyde was still quite pronounced. None of these variations made any difference to the ultimate result. In each case the whole was then made alkaline with ammonia, and shaken out several times with ether, the ethereal solution evaporated on a water-bath, and the residue weighed. In shaking out with ether some little trouble was experienced, owing to the presence of a gelatinous precipitate of hydrated manganese dioxide, and time is required for the ether to completely disentangle itself from the precipitate. In several experiments with a mixture of truxilline and cinnamyl-cocaine, after the addition of the permanganate, the precipitate of manganese dioxide was filtered off at the pump, the filter being well washed with acidulated water and the alkaloid extracted from the filtrate in the usual manner. Where this method was followed the recovered alkaloid showed a loss of from 10 to 15 per cent. on the quantity taken. Ultimately it was found that even in acid solution the manganese dioxide carries down with it some of the alkaloid, which is extremely difficult to wash out on the filter. The practice of filtering off the manganese dioxide before extracting the alkaloid was therefore discontinued. The results were as follow:—

(1) *Cinnamyl-Cocaine.*

The residue obtained on evaporating the ethereal solution never amounted to more than one or two-tenths of a milligramme (about 0·1 Gm. of alkaloid was taken for each experiment).

(2) *Cinnamyl-Cocaine and Cocaine.*

	Exp. 1.	Exp. 2.
Amount of Cinnamyl-cocaine taken ..	0·0500	0·0451
Amount of Cocaine taken	0·1005	0·0980
Amount recovered (Cocaine)..........	0·1000	0·0976

(3) *Cinnamyl-Cocaine and Truxilline.*

	Exp. 1.	Exp. 2.
Amount of Cinnamyl-cocaine taken ..	0·0894	0·0814
Amount taken	0·1036	0·1046
Amount recovered......................	0·1002	0·1004
Loss....................................	0·0034	0·0042

The percentage losses in these two experiments are respectively 3·3 per cent. and 4·0 per cent. This loss must be due to one of two things, either truxilline itself is slowly oxidised by permanganate, or else the purified truxilline used still contained some impurity attacked by the permanganate. The latter alternative is the more probable, for truxilline and its salts, being amorphous, cannot be purified by crystallisation, and it is therefore no easy matter to prepare absolutely pure truxilline. In any case, it will be seen from the above figures that cocaine and truxilline can be separated with a very fair degree of accuracy from cinnamyl-cocaine, and that in a mixture of the three the amount of the latter could be determined by difference.

The problem of the separation of cocaine and truxilline (an important one) still remained, and as there seemed to be no ready means of separating these two alkaloids, as such, from each other, a study of the acids produced by hydrolysis was commenced.

Properties of the Hydrolytic Acid Products of the Four Alkaloids—namely, Benzoic, Cinnamic, and α-Truxillic Acids.

For these experiments, commercially pure benzoic and cinnamic acids were recrystallised from dilute and absolute alcohol respectively. The truxillic acid, obtained from Merck, had the melting point and other properties of Liebermann's α-truxillic acid. It was recrystallised from absolute alcohol.

Oxidation Experiments with Potassium Permanganate.

The fact that cinnamic acid is readily oxidised by a solution of potassium permanaganate suggested the possibility of quantitative determination by this means. According to Fittig (*Ber.*, **21**, 920), the products of the reaction are phenyl-glyceric acid, benzaldehyde, and oxalic acid. There seemed to be no reason why the reaction could not be carried further in neutral or alkaline solution, with the complete formation of benzoic and oxalic acids, according to the following equation:—

$$C_6H_5CH : CH\cdot COOH + 2O_2 = C_6H_5COOH + (COOH)_2.$$

This corresponds to an absorption of four atoms of oxygen per molecule, or 43·2 per cent. Accordingly, experiments were undertaken to ascertain—(1) If permanganate had any action on benzoic and truxillic acids under the above-mentioned conditions; (2) if the reaction in the case of cinnamic acid could be made quantitative. A volumetric process in which the amount of cinnamic acid might be calculated from the quantity of permanganate used is quite out of the question, for there is no definite end reaction.

Method of Operation.—A weighed quantity of acid was dissolved in standard soda solution, and mixed with an excess of a standard solution of potassium permanganate. The whole was allowed to stand for some time, with occasional agitation, in a stoppered bottle, and then filtered through ignited asbestos to remove the precipitate of hydrated manganese dioxide, the filter being washed with distilled water. The mixed filtrate and washings were made up to a definite volume, an aliquot portion taken, potassium iodide added, the whole acidified with dilute sulphuric acid, and the liberated iodine determined by means of a solution of sodium thiosulphate that had been previously standardised against the permanganate in a similar manner. From the amount of thiosulphate solution used the excess of permanganate was calculated, this quantity deducted from that originally taken gave the amount of permanganate used in the oxidation of the acid, and from this the amount of oxygen taken up was calculated. The standard solutions throughout were approximately decinormal. A large number of experiments were made, under varying conditions. In some a neutral solution of the sodium salt of the acid was used; in others, a solution containing an excess of alkali, but this variation did not appear to influence the result. The period during which the action was allowed to proceed varied from half-an-hour to ninety hours, and, as a rule, the longer the period, the greater the amount of permanganate reduced, though some exceptions to this rule were observed. The temperature was also varied, many of the experiments being conducted in the cold, some at from 50° to 60° C., and others at about 95° C., in the last case for about half-an-hour. The only apparent effect of the higher temperatures was to hasten the process. In all experiments conducted in the cold, the odour of benzaldehyde disappeared in about an hour, and when heat was employed in about fifteen minutes. Blank experiments were always conducted as a check upon the results, which are summarised in the following statement:—

(1) *Benzoic and α-Truxillic Acids.*

About 0·2 Gm. of benzoic and about 0·06 Gm. of truxillic acid was used for each experiment. In several experiments under varying conditions (as above) the permanganate reduced was practically *nil.*

(2) *Cinnamic Acid.*

About 0·06 Gm. was taken for each experiment. The oxygen absorbed varied from 46 to 54·3 per cent. on the weight of acid taken, the average in fifteen experiments being 50·4 per cent. An absorption of four atoms of oxygen per molecule corresponds to 43·2 per cent., and an absorption of five atoms to 54·0 per cent. On long standing (about ninety hours), and in a less marked degree when heat is employed, the figures approach those calculated for an absorption of five atoms.

It is surprising to find that under the given conditions the absorption is invariably considerably higher than is required for four atoms of oxygen per molecule. At first sight this would seem to indicate that the oxidation does not stop at the formation of benzoic and oxalic acids; it has, however, already been shown that benzoic acid in solution as a sodium salt is not acted on by potassium permanganate, and the two following experiments give additional proof of this, and of the fact that oxalic acid is not attacked by potassium permanganate under those conditions. 0·1 Gm. of pure benzoic acid was dissolved in the calculated quantity of soda, and boiled for one hour with 0·2 C.c. N/10 permanganate. Very slight reduction occurred, a trace of hydrated manganese dioxide being formed, but the pink colour of the liquid was still quite pronounced. A similar experiment with pure oxalic acid yielded similar results. It seems probable, then, that the oxidation of cinnamic acid is not quite so simple a reaction as would at first sight appear.

It is evident that in a mixture of benzoic, truxillic, and cinnamic acids the last can at least be approximately determined by the method named. A high degree of accuracy appears to be impossible however, and there is the added disadvantage that if benzoic and truxillic acids had subsequently to be determined, complication would arise from the fact that benzoic and oxalic acids are products of the reaction; moreover, the process is lengthy and rather inconvenient, and was eventually abandoned.

Experiments on the Absorption of Bromine.

Benzoic and truxillic acids are saturated substances, cinnamic acid is not, and therefore readily absorbs bromine, the reaction being a very complicated one. Experiments were undertaken to ascertain: (1) If α-truxillic or benzoic acid absorbs bromine under the conditions described below. (2) If in the case of cinnamic acid the reaction is capable of quantitative application. For the sake of convenience, a few experiments with iodine are also here described. Cinnamic acid was dissolved in an excess of a solution of sodium bicarbonate, mixed with a known quantity of an ordinary standard solution of iodine in potassium iodide, and left for twenty-four hours. There was practically no absorption of iodine. In another experiment free cinnamic acid was diffused in the iodine solution, but with the same result. Hübl's iodine solution (so useful, in the analysis of oils and fats, for the determination of unsaturated fatty acid) was then tried, but again the absorption of iodine was practically *nil*. The experiments with bromine were then commenced.

Method of Operation.—A stock solution of each acid was prepared by dissolving a weighed quantity in a known excess of a standard solution of soda. In each experiment a quantity of this solution was measured into a stoppered bottle, and the free acid liberated by the addition of a slight excess (about 0·2 C.c.) over the calculated quantity of a standard solution of sulphuric acid. Excess of a standard bromine solution was then added, and the whole allowed to stand for a varying interval, with occasional agitation. The excess of bromine was removed by the introduction of a little potassium iodide, and the liberated iodine titrated with a standard solution of sodium thiosulphate. Blank experiments were made in every case, and from the difference between the amount of thiosulphate required in the experiment proper and that in the blank, the quantity of bromine absorbed by the acid was calculated. At first the solutions were all approximately decinormal, but subsequently vigintinormal solutions were used in order to obtain greater accuracy in the burette readings. At first a solution of bromine in chloroform was used, but cinnamic acid was found to absorb from 97 to 111 per cent. of its weight of bromine. This may possibly be due to a varying loss, owing to the volatile nature of the bromine solution. Subsequently the use of chloroform was discontinued, the bromine being dissolved in an aqueous solution of potassium bromide; with this solution much more uniform results were obtained. In all, between forty and fifty experiments were conducted. The amount of the excess of bromine solution, the time allowed for the reaction to proceed, and the degree of dilution of the cinnamate solution were varied in turn, and the absorption was found to be rather greater with dilute solutions than with more concentrated ones. The results are summarised below:—

(1) With benzoic and α-truxillic acids, no absorption of bromine was found to take place.

(2) Cinnamic acid; approximately 0·05 Gm. was used for each experiment. Discarding one or two abnormal results (absorptions of 137 per cent. and 139 per cent. of bromine, calculated on the weight of cinnamic acid used, after standing for sixty-seven hours), the acid was found to absorb from about 127 to 132 per cent. of its weight of bromine, the higher figure being obtained when the cinnamate solution was very dilute (1 in 2,500).

An absorption of two atoms of bromine per molecule corresponds to an absorption of 108 per cent. of bromine, whilst an absorption of three atoms corresponds to 162 per cent. The complicated nature of the reaction is shown by the fact that the figure actually obtained corresponds to about two and a-half atoms of bromine per molecule.

It was noticed that the bromination products were more soluble in water than the original cinnamic acid, so much so that when the latter is present in the proportion of 1 in 500 diffused in the liquid a clear solution is obtained after bromination. Later, this fact proved important and useful. The bromine method is evidently more accurate than the permanganate method, and is far more expeditious.

The following table shows the details of a few of the experiments. In Nos. 1 to 4 an excess of bromine solution was taken, and the whole allowed to stand, with occasional agitation, for three hours before proceeding further. In Nos. 5 to 8 an excess of bromine was run in, the whole well shaken, potassium iodide introduced, and the experiment continued at once.

No. of Experiment.	Degree of Dilution before Addition of Bromine Solution.	Percentage of Bromine Absorbed.
1	1 in 212	127·2
2	1 in 212	127·2
3	1 in 2.500	132·0
4	1 in 2,500	132·0
5	1 in 212	128·4
6	1 in 212	128·4
7	1 in 2,500	132·2
8	1 in 2,500	132·0

Steam Distillation Experiments.

It is a well-known fact that benzoic acid is readily volatile in steam, and that cinnamic acid, to a much smaller extent, is volatile. No information as to the volatility in steam of truxillic acid could be found. It was thought that possibly a separation of the acids might be effected by means of this process, and experiments were undertaken to ascertain the rates at which they respectively distil.

Method of Operation.—The usual form of steam distillation apparatus was used. A measured quantity of distillate was made alkaline with soda, concentrated to small bulk, then acidified, and shaken out several times with ether. The ether was evaporated and the residue weighed.

Results.

Name of Acid.	Amount Extracted from 700 C.c. of Distillate.	Amount Originally Taken.
Benzoic	0·0712	0·0986
Cinnamic	0·0238	0·0925
a-Truxillic...........	none	0·1010

It is evident that *a*-truxillic acid is not volatile in steam. It will be noticed that, in the case of cinnamic acid, 700 C.c. of distillate contained about 25 per cent. of the amount originally taken, and in the case of benzoic acid about 75 per cent.

It is clear that even an approximate separation of the acids by this method is impossible.

Solubility Experiments.

The figures for the solubility of benzoic and cinnamic acids in water given by different observers differ slightly among themselves, but 1 in 400 for benzoic acid and 1 in 3,000 for cinnamic at ordinary temperatures are not far from the truth. Liebermann describes *a*-truxillic acid as being practically insoluble in water. Leaving cinnamic acid out of consideration for the time being, it seemed probable that a separation of benzoic and truxillic acids could be effected by taking advantage of the difference in their solubilities. Experiments were accordingly made with each acid to ascertain the limits of precipitation at various temperatures, under the conditions mentioned below, irrespective of the solubility figures just given.

Method of Operation.—Solutions of the sodium salts of the three acids of known strength were employed. The acid was liberated by the addition of a very slight excess (about 0·2 C.c.) over the calculated quantity of standard sulphuric acid. In successive experiments more and more dilute solutions were used until the limit of precipitation was reached. At temperatures higher than the normal, before the addition of the standard acid, the vessel (a small graduated flask) containing the solution and a thermometer was heated nearly to 100° C. by partial immersion in a vessel of boiling water. The proper amount of standard acid was then introduced, the heating continued for five minutes longer, and, if no precipitate appeared, the whole was allowed to cool slowly with constant stirring, and the moment a trace of precipitate appeared, the temperature was noted. In the case of benzoic and cinnamic acids the flask was then slowly reheated, and the temperature at which the precipitate redissolved was noted. The difference between these two temperatures varied from 3° to 6°, and the mean of the two is that given in the table. In the case of *a*-truxillic acid, when once the precipitate has appeared it is redissolved only very slowly on reheating, and the temperature given in the table is that at which the precipitate appeared.

Name of Acid.	Degree of Dilution. One part in	Temp. of Precipitation.
Benzoic	21·0	Hot. 97° C.
Benzoic	25·6	92
Benzoic	30·4	88
Benzoic	35·2	84
Benzoic	40·0	81
Cinnamic	117	93
Cinnamic	213	79
Cinnamic	427	63
a-Truxillic	4940	86
		Cold.
Benzoic	350	Distinct precipitate. Temp., 12° C.
Benzoic	400	No precipitate even after well shaking and allowing to stand. Temp., 12° C.
Cinnamic..........	2520	Distinct precipitate after well shaking. Temp., 14° C.
Cinnamic..........	3030	No precipitate even after well shaking and allowing to stand. Temp., 14° C.
a-Truxillic	40000	Distinct precipitate on shaking. Temp., 14° C.

A mixture of the three acids was next used in a solution sufficiently dilute, according to the above solubility figures, to retain the benzoic and cinnamic acids, but not the truxillic acid. Temperature, 14° C.

Acid.	Amount Taken.	Dilution.
Benzoic	0·0197	1 in 507
Cinnamic..............	0·0025	1 in 4,000
a-Truxillic	0·0005	1 in 20,000

On well shaking the solution and allowing it to stand for a few minutes, a distinct crystalline precipitate was obtained. As a check upon this result, the experiment was repeated, leaving out the truxillic acid. No precipitate was obtained even after well shaking and allowing to stand for some time. It is beyond doubt then that a very small amount of truxillic acid can be detected in the presence of much larger quantities of benzoic and cinnamic acids.

The Assay of Mixtures of the Acids.

(1) *a*-Truxillic and Cinnamic Acid.

Two attempts were made to determine the amount of *a*-truxillic acid in a mixture of the two by taking advantage of the great difference in their solubilities at temperatures above 90° C. The dilution was such as to retain the cinnamic acid in solution. The precipitation was made at about 96° C., and the precipitate separated from the solution by sucking the latter out through a glass tube, the end of which was closed by a plug of cotton wool, the containing vessel being all the time surrounded by boiling water. The separated precipitate was dissolved in a dilute solution of sodium hydroxide, transferred to a separator, the whole acidified with dilute hydrochloric acid, extracted with ether, and the ethereal solution was evaporated on a water-bath, and the residue weighed as truxillic acid, after drying in a desiccator. A rough correction, based on the previously obtained solubility figure for *a*-truxillic acid, was then applied. The results are appended :—

—	Experiment 1.		Experiment 2.	
	Cinnamic Acid.	Truxillic Acid.	Cinnamic Acid.	Truxillic Acid.
Amount taken	0 0937	0·0104	0·0937	0·0049
Dilution	1 in 141	1 in 1,274	1 in 130	1 in 2,474
Recovered (presumably Truxillic Acid)	—	0·0070	—	0·0020
Correction figure	—	0·0C26	—	0·0025
Total (Truxillic Acid)....	—	0·0096	—	0 0045

According to these figures fairly accurate results can be obtained by this method, but involving as it does a correction figure for the solubility of *a*-truxillic acid it can scarcely be recommended; moreover, another objectionable feature is the necessity for filtering at temperatures above 90° C.

(2) *a*-Truxillic and Benzoic Acids.

Two experiments were made to determine the amount of each in a mixture of the two. Before precipitation the solution was diluted with freshly-boiled and cooled distilled water (to eliminate as far as possible the action of carbonic acid in the subsequent titration) to such an extent that after precipitation by the addition of the standard acid the degree of dilution was such that one part of the mixed acids was contained in 500 parts of solution (obviously, in dealing with a mixture of the two in unknown proportion, the degree of dilution would have to be based on the assumption that the acid was entirely benzoic). The crystalline precipitate of truxillic acid was collected on a small filter (5·5 Cm. diameter). The latter was washed twice with 5 C.c. of distilled water, the washings being added to the filtrate, which was at once titrated with decinormal alcoholic potash, phenolphthalein being the indicator. From the amount of potash required the quantity of benzoic acid was calculated. The truxillic acid was washed through the filter with hot 90 per cent. alcohol in two successive quantities of 0·5 C.c. each, and the solution thus obtained titrated with decinormal alcoholic potash to determine the amount of truxillic acid present with the following results :—

—	Experiment 1.		Experiment 2.	
	Taken.	Found.	Taken.	Found.
Benzoic Acid	0·0608	0·0632	0·0706	0·0696
α-Truxillic Acid	0·0510	0·0513	0·0274	0·0280

These figures show that α-truxillic acid can be determined with considerable accuracy in this manner. It should be noted that, unless great care be taken, the result for benzoic acid is too high, owing to the effect of carbonic acid on the indicator.

(3) α-Truxillic, Benzoic, and Cinnamic Acids.

As in previous experiments, the acids were precipitated from a solution of their sodium salts by a very slight excess of standard acid, in a dilution of 1 of total acid in 500. The cinnamic acid was then determined by the bromine method. already described, after which the insoluble precipitate was collected in a tared Gooch crucible, washed once or twice with distilled water, dried in a water oven and weighed as truxillic acid. The benzoic acid was determined by difference. The results are tabulated :—

—	Experiment 1.		Experiment 2.	
	Taken.	Found.	Taken.	Found.
α-Truxillic Acid	0·0253	0·0256	0·0102	0·0101
Cinnamic Acid	0·0250	0·0230	0·0112	0·0111
Benzoic Acid	0·0986	0·1003 (by difference)	0·0982	0·0984 (by difference)

It is evident, as these figures show, that in a mixture of the three acids, the truxillic and cinnamic acids can be fairly accurately determined in the manner above indicated, and the benzoic acid estimated by difference. This difference method for benzoic acid was adopted because any direct determination of the latter would have to be made in the presence of the products of bromination of cinnamic acid, a problem which would in itself involve a considerable further amount of labour and research.

Experiments on the Hydrolysis of the Alkaloids.

It has been shown that the respective amounts of benzoic, cinnamic, and α-truxillic acids in a mixture of the three can be determined with very fair accuracy. Before such a process can be regarded as trustworthy when applied to the alkaloids themselves, it must be proved that when working on a small scale, as in an assay process, the operation of hydrolysis can be conducted quantitatively, and with this object a series of experiments was made in which both acid and alkaline hydrolysing agents were tried upon each alkaloid.

(1) Acid Hydrolysis.

Method of Operation.—A weighed quantity (about 0·1 Gm.) of alkaloid was heated in boiling water for an hour with 5 C.c. of a mixture composed of equal parts of strong hydrochloric acid (sp. gr., 1·16) and water, in a small flask, fitted with a cork and condensing tube (to prevent loss by volatilisation in the case of benzoic and cinnamic acids). After cooling, when crystals of the acid hydrolytic product separated, 10 C.c. of ether was introduced, and the contents of the flask transferred to a separating funnel, the flask being rinsed with a second 10 C.c. of ether, which was added to the main bulk in the separator. After well shaking, the acid liquid was run off, and the shaking-out process twice repeated with 10 C.c. of ether. The ether solutions (1, 2, and 3) were twice washed consecutively with 5 C.c. of distilled water, the wash water being passed from one ether solution to the other, in the proper order. This method was adopted to wash out traces of hydrochloric acid, without losing (in the case of cocaine) an appreciable quantity of benzoic acid. The washed ethereal solutions were mixed, and evaporated on a water-bath in a small wide-mouth flask, at a temperature below the boiling-point of ether, the last trace of the latter being removed by a current of air. The residue was allowed to remain in a desiccator overnight to become thoroughly dry, then weighed, dissolved in a few C.c. of 90 per cent. alcohol, and titrated with vigintinormal alcoholic potash. The results are summarised in the following tables :—

Cocaine (yielding Benzoic Acid).

No. of Experiment.	Acid Theoretically Obtainable.	Acid Actually Found.	Percentage on Theoretical Amount.
1	0·0399 Gm.	0·0384 Gm. by weight	96·2
—	—	0·0352 Gm. by titration	88·2
2	—	—	—

Cinnamyl-Cocaine (yielding Cinnamic Acid).

No. of Experiment.	Acid Theoretically Obtainable.	Acid Actually Found.	Percentage on Theoretical Amount.
1	0·0447 Gm.	0·0506 Gm. by weight	113·3
—		0·0427 Gm. by titration	95·5
2	0·0455 Gm.	0·0496 Gm. by weight	109·0
—	—	0·0452 Gm. by titration	99·3

Truxilline (yielding α-Truxillic Acid).

No. oi Experiment.	Acid Theoretically Obtainable.	Acid Actually Found.	Percentage on Theoretical Amount.
1	0·0670 Gm.	0·0654 Gm. by weight	97·6
2	0·0451 Gm.	0·0442 Gm. by weight	98·0
—	—	0·0395 Gm. by titration	87·5
3	0·0438 Gm.	0·0428 Gm. by weight	97·7
—	—	0·0374 Gm. by titration	85·4

In all these experiments it will be seen that the percentages by weight are invariably higher than those by titration. The percentages by weight approximate to the theoretical in the case of truxilline, are considerably above it in the case of cinnamyl cocaine, and a little below in the case of cocaine. By titration they are always below the theoretical, averaging 86·4 in the case of truxilline, 97·4 in the case of cinnamyl-cocaine (the second experiment giving practically the calculated amount), and 88·2 in the one experiment with cocaine. The cause of the discrepancy between the weight and titration figures is not quite clear, since of the other products of hydrolysis, ecgonine and methyl alcohol, the former is very soluble in water and insoluble in ether, and the latter is very volatile.

The low titration figure in the case of cocaine may be attributed to loss of benzoic acid by volatilisation during the evaporation of the ethereal solution. In the case of truxilline, however, no such explanation is possible, as α-truxillic acid is not a volatile substance.

(2) Alkaline Hydrolysis.

Method of Operation.—In several preliminary experiments a weighed quantity of alkaloid was dissolved in exactly the quantity of decinormal alcoholic potash theoretically required to convert the hydrolysed acid into the potassium salt, and evaporated to dryness in a glass dish on a water-bath. On adding water, much of the residue was insoluble, and proved to be undecomposed alkaloid. Moreover, during the evaporation of the alcoholic solution a strong odour of ethyl benzoate (in the case of cocaine) was noticed, and benzoic acid was undoubtedly lost in this way. A considerable excess of alcoholic potash was then tried; the odour of ethyl benzoate was less pronounced, and the residue obtained on evaporation entirely dissolved in water, proving the hydrolysis to be complete. The exact quantity of decinormal sulphuric acid theoretically required to neutralise the potash originally taken was then introduced, and the liberated benzoic acid (in the case of cocaine) titrated with decinormal alcoholic potash, phenolphthalein being the indicator. The results were, however, much too high, due to the absorption of carbon dioxide by the potash during evaporation. Moreover, in the presence of the other product, ecgonine, the phenolphthalein was much less sensitive than usual. Ultimately the following method was adopted:—A weighed quantity of alkaloid (about 0·1 Gm.) was dissolved in an excess of decinormal alcoholic potash (20 C.c.), mixed with about 20 C.c. of distilled water, and gently heated (not boiled) on a water-bath in a small flask, fitted with a cork and condensing tube, for half an hour. The small quantity of volatile ester produced, even with the use of this diluted alcohol, is itself, under these conditions, rapidly hydrolysed. The condensing tube was then removed, and the solution evaporated until reduced to very small bulk to remove alcohol. The clear solution was diluted to about 10 C.c., and washed with 10 C.c. of ether. A slight excess over the theoretical quantity of standard acid was then introduced, and the whole thrice extracted with 10 C.c. of ether. The mixed ethereal solutions were washed with about 5 C.c. of water, and evaporated on a water-bath in a small, wide-mouth flask, at a temperature below the boiling point of ether, the last trace of the latter being removed by a current of air. The residue was allowed to dry overnight in a desiccator, weighed, then dissolved in a few C.c. of 90 per cent. alcohol, and titrated with vigintinormal alcoholic potash, with the following results:—

Cocaine (yielding Benzoic Acid).

No. of Experiment.	Acid Theoretically Obtainable.	Acid Actually Found.	Percentage on Theoretical Amount.
1	0·0423 Gm.	0·0392 by weight	92·6
	—	0·0396 by titration	93·6
2	—	—	—

Cinnamyl-cocaine (yielding Cinnamic Acid).

No. of Experiment.	Acid Theoretically Obtainable.	Acid Actually Found.	Percentage on Theoretical Amount.
1	0·0453	0·0450 by weight	99·3
	—	0·0451 by titration	99·5
2	0·0433	0·0424 by weight	98·0
	—	0·0425 by titration	98·1

Truxilline (yielding α-Truxillic Acid).

No. of Experiment.	Acid Theoretically Obtainable.	Acid Actually Found.	Percentage on Theoretical Amount.
1	0·0451	0·0402 by weight	89·1
	—	0·0362 by titration	80·2
2	0·0452	0·0398 by weight	88·0
	—	0·0367 by titration	81·2

It will be noticed that the percentages by weight and by titration agree very well in the cases of cocaine and cinnamylcocaine. Those for the former alkaloid are rather low, as might be expected for reasons already given; those for the latter are throughout almost theoretical. In the two experiments with truxilline the percentages by weight agree very well, also those by titration, the former being about 11 per cent. below, and the latter about 20 per cent. below the calculated. With truxilline the results obtained by acid hydrolysis approached nearer to the calculated than those obtained by alkaline hydrolysis, but with cinnamylcocaine and cocaine the best results were obtained by alkaline hydrolysis. The samples employed of the two latter were pure and well crystallised; hence it is more reasonable to consider that process best which gives the best results with these two alkaloids, rather than that which gives the best results with truxilline, which is an uncrystallisable substance, and, as has been previously explained, may contain unknown impurities. Preference, at any rate for the time being, was accordingly given to the process of alkaline hydrolysis; moreover, it has the further advantage over the process of acid hydrolysis, that the completion of the reaction can readily be proved.

To test the process from beginning to end, weighed quantities of the three alkaloids were mixed, and submitted to the process of alkaline hydrolysis, the mixture of acids being finally obtained in solution in a known slight excess of standard soda. A slight excess of standard acid was then added, and, after shaking, the whole diluted so as to contain one of total acid in 500. The cinnamic acid was determined by the bromine method, a bromine absorption figure of 130 per cent. being used as a factor. The remaining insoluble acid was collected on a small filter, well washed with water, dissolved in hot alcohol, the solution titrated with vigintinormal alcoholic potash, and the quantity of truxillic acid calculated. The amounts found of truxillic and cinnamic acids multiplied by the factor 2·22 give respectively the amounts of truxilline and cinnamyl-cocaine, and the amount found of benzoic acid multiplied by the factor 2·48 gives the amount of cocaine. In this case, however, for reasons already explained, the cocaine was determined by difference. The tabulated results appear below:—

—	Taken.	Found.
Truxilline	0·0472 Gm.	0·0365 Gm.
Cinnamyl-cocaine	0·0503 Gm.	0·0506 Gm.
Cocaine	0·1020 Gm.	0·1124 Gm. (by difference)

It will be noticed that the cinnamyl-cocaine comes out exceedingly well, the truxilline too low, and therefore the cocaine too high. The amount found of truxilline is about 77 per cent. of that originally put in; it will be remembered, however, that when this alkaloid alone was subjected to alkaline hydrolysis and the hydrolysed acid titrated, the amount found was about 80 per cent. of that originally introduced.

Assay of the Crude Alkaloid Obtained from Different Kinds of Coca Leaves.

For assay purposes two distinct processes based on the experimental work described in this paper can be devised.

Process No. 1.—The crude alkaloid is weighed, dissolved in dilute sulphuric acid, and subjected to the action of potassium permanganate. The unoxidised alkaloid is re-extracted and weighed; the loss in weight represents the amount of cinnamylcocaine present. The re-extracted alkaloid is then subjected to alkaline hydrolysis, and the truxillic and benzoic acids separated by taking advantage of the insolubility of the former in water. From the quantity found of each, the respective amounts of truxilline and cocaine originally present can be calculated. This process admits of the direct determination of the benzoic acid.

Process No. 2.—The crude alkaloid is at once subjected to alkaline hydrolysis, the cinnamic acid determined by the bromination method, and the truxillic acid by taking advantage of its insolubility in water. The amount of truxilline and cinnamyl-cocaine present is then calculated, and the difference between their combined weight and the weight of crude alkaloid originally taken represents the amount of cocaine present.

Each process was tried on two samples of crude alkaloid, extracted respectively from Truxillo and Java leaves. The results are given in the following table :—

Alkaloid from Truxillo Coca.

	Process No. 1.		Process No. 2.	
Crude Alkaloid taken	0·1540 Gm.		0·1232 Gm.	
	Gm.	Per cent.	Gm.	Per Cent.
Truxilline found	0·0280	18·2	0·0220	17·8
Cinnamyl-cocaine found	0·0356	23·1	0·0165	13·4
Cocaine found	0·0800	52·0	0·0847 (by difference)	68·8
Total found	0·1436	93·3	0·1232	100·0

Alkaloid from Java Coca.

Crude Alkaloid Taken.	Process No. 1.		Process No. 2.	
	0·2010 Gm.		0·2108 Gm.	
	Gm.	Per Cent.	Gm.	Per Cent.
Truxilline found..............	0·0164	8·1	0·0197	9·3
Cinnamyl-cocaine found......	0 1024	51·0	0·0801	38·0
Cocaine found	0·0740	37·0	0·1110 (by difference)	52·7
Total found	0·1928	96·1	0·2108	100·0

The processes appear equally good as far as the determination of truxilline is concerned; process No. 2 has the disadvantage that the cocaine is estimated by difference; in process No. 1 the cinnamyl-cocaine is estimated by difference, and comes out considerably higher than in process No. 2. This is what may be expected, as any impurities oxidisable by permanganate would be calculated as cinnamyl-cocaine. The sum of the percentage results in process No. 1 is over 90, and as it is certain that cocaine and truxilline are practically unaffected during the oxidation of the cinnamyl-cocaine, preference must be given to the permanganate process.

THE PRODUCTION OF CRUDE ICHTHYOL.*

BY F. LÜDY.

From Zirl, a station on the Vorarlberg Railway a few miles west of Innsbruck, a well-made road ascends the mountains on the north side of the valley, and, crossing the range, reaches the well-known summer resorts of Mittenwald and Partenkirchen, in Bavaria. About midway between Zirl and Mittenwald lies the village of Seefeld, some 3,600 feet above the level of the sea. It is in the immediate neighbourhood of Seefeld that the bulk of the crude oil from which ichthyol preparations are made is produced.

The greyish bituminous schist, known locally as "oelstein" or "stinkstein," is found not only near Seefeld, but in many localities in the Karwendel range of mountains which separates Bavaria from Tyrol. It occurs in veins varying from one or two decimetres to a metre in thickness, sometimes exposed, sometimes buried in the mountain. Impressions, often very beautiful, of various marine creatures, especially fishes, are found in the schist.

Up to within the last few months the production of the oil was carried on exclusively by the peasants on the small scale. The industry has existed for centuries, and the properties of the crude oil are well known in the country where it is sold to the country folk by pedlars. The schist is obtained by driving headings into the mountain to a disance of 200 to 300 metres. It contains from 1 to 10 per cent. of oil, which makes its presence perceptible by its strong, penetrating odour; if very rich in oil, drops will soon exude from the rock when exposed to the heat of the sun. The schist is picked over, the poorer thrown aside, and the better broken into lumps about the size of the fist. With these, large cast-iron crucibles, holding about 30 kilos, are filled; the crucibles are then covered with a lid pierced with holes and inverted. Nine or twelve such crucibles are arranged in a rectangular space and surrounded by a wall of stones about half a metre high. Between the crucibles, split fir logs are laid, which are kindled. The heat makes the oil sweat out of the rock; it trickles through the lid of the inverted crucible into a small drain, which communicates with several crucibles, and which carries the oil beyond the stone wall into a wooden tub, of which about three are contained in a large wooden box. From the latter a pipe leads to a barrel and allows of the escape of the gases produced, whilst any oil vapour condenses in the box and drains into the barrel. The whole arrangement is a primitive form of downward distillation. The operation lasts about six hours, and is performed twice in the day, nine crucibles giving about 15 to 25 kilos of oil per day. On standing, water and pitch separate from the oil which floats on the surface; it is skimmed off, transferred to petroleum barrels and sent to market.

The crude oil thus produced contains about 2·5 per cent. of sulphur. By treating it with concentrated sulphuric acid sulphichthyolic acid is produced, and this, neutralised with ammonia, forms the sulphichthyolate of ammonia (ichthyol) of commerce, which contains, in addition to sulphichthyolate of ammonia, about 50 per cent. of water, 5 to 7 per cent. of ammonium sulphate and 1 per cent. of a volatile oil with strong penetrating odour.

THE BRIGHTER SIDE OF A CHEMIST'S LIFE.

BY J. TAYLOR.

So much has been published latterly about the hard lot of the present-day chemist, that an occasional article showing forth what pleasures can be obtained from this, our much maligned business, might be acceptable. For instance, the opportunities for travel are probably unique amongst any other profession or trade; a chemist with the English qualification being a necessity at all the fashionable health and pleasure resorts in the world.

To quote my own case: my first venture after becoming of age and qualified was to accept a situation at Contrexeville, in the Vosges, where to one who was a lover of nature, it was one ong holiday; even the duty imposed had a holiday aspect, seeing that everything done was strange and new. The customers even imbued one with a romantic interest, as there were notabilities from all quarters of the globe "taking the cure" at various periods during the season.

To meet in your daily walk, in the park, the Shah of Persia, for instance, walking solemnly to the spring, with his drinking mug in his hand, followed by his Court in a string, headed probably by the Grand Vizier, and gradually tapering off in importance until the rear was brought up by one or two humble secretaries; or to see the same ruler of destinies anxiously swinging a brass ring (suspended from a bough by string) so that, if the royal hand was steady enough, it might be caught on a series of numbered hooks fixed on a board (a splendid nursery game). To see the smile ebb and flow on the faces of the courtiers, as the ring swung, wielded by the royal hand. No. 10 is

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hooked! The smile begins to flow, the next swing hooks No. 100; immediately there is a flood-tide of smiles, which remain at flood. Evidently there is some great effort to be made, judging by the anxiously craned necks of the humble secretaries in the rear. Yes! His Serene Highness, flushed with success, is taking deadly aim at hook No. 1,000; the smile is kept at flood by an extraordinary facial effort, ready to burst into a delighted roar, but no!—the ring swings, strikes the board, bounces off, and is hooked by nothing. The ebb of that smile was more remarkable than the flow. The Shah turns away disgusted, followed in succession by his disgusted suite. All this gave one food for thought, comparing these guileless creatures with the Persians of the newspapers.

It was interesting also to note the final stages of a royal courtship, which ended in marriage before the season finished. To use an Irishism, the remarkable thing about this courtship was that it was just ordinary. They seemed as passionately fond of tennis as other young people are when in the same condition, although one expected something different from a Prince and Grand Duchess.

There being only one chemist's shop recognised by the establishment, and only one English assistant employed, my services, both pharmaceutical and otherwise, were very much sought after by various fussy English visitors who were unable to speak French.

Although my knowledge of the language was decidedly in its infancy, requests, such as these, were frequent:—"Will you kindly come and explain to the cycle maker about my free wheel?" or, "I have got into difficulties at the post office about a money order; I am sure you will extricate me?" or, "The proprietor of my hotel won't understand that I am leaving him to-day to go to another hotel; do please make him?"

In each case, not willing to show my ignorance, I pleaded—Impossible! great rush of business. Incidents, such as these, made attendance at the pharmacy a source of amusement and pleasure, and during the hours of recreation there were the quaint old villages and hamlets to discover, a description of which had better be postponed until another occasion.

BACTERIAL THERAPEUTICS.*

BY J. TAYLOR GRANT, M.D., B.SC.,

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Let us now glance at

Bacteria in Infectious Diseases,

and we have already noted the points which must be established before a particular microbe can be called the cause of a particular infectious disease.

An infectious disease arises when a specific disease-producing microbe, *i.e.*, not a single solitary microbe, but a number of the same kind, having gained entrance to the body—it may be by a wound, or by water or food, or through the air, or by an insect-bite, or in some other way—and having found conditions favourable grows and multiplies, and in so doing steadily elaborates a chemical poison which continuously passes into the blood and induces its characteristic effects. These chemical poisons are the weapons of offence of the bacteria, and as their exact composition is as yet unknown, they are conveniently referred to as toxins. We speak of the toxins without really knowing them in their pure solid state, and we work with a solution of them obtained by filtering a fluid culture through an earthenware filter, which keeps back the bacteria and allows the clear toxin-containing fluid to pass. No doubt it would be desirable, for some reasons, if we could isolate the active toxic principle with as much accuracy as we can isolate strychnine from nux vomica, or morphine from the complex substance opium, and so have something ponderable and of definite formula to work with. But it seems this is not absolutely necessary, for purposes of immunisation at least, as we shall see later, and that it is sufficient to employ the toxin solution.

We do not know, however, that toxins, besides being soluble in water, may be dialysed, but not crystallised, that their poisonous properties are destroyed by heat and by light, and that they are probably of the nature of albumoses. A great difficulty in the way of ascertaining their chemical composition is their existence in infinitely small quantities. One of the most powerful poisons known is a dried toxin, viz., that of tetanus, the fatal human dose being one-tenth that of strychnine. The fatal dose of a toxin for different animals varies with the species, sometimes enormously; thus the amount of tetanus toxin necessary to kill a fowl would suffice to kill 500 horses. In some infectious diseases, such as diphtheria and tetanus, the toxin formed within the bacterial cells readily diffuses through the cell wall, and enters the circulation by which it is carried throughout the entire system to perform its malignant functions, while the bacteria themselves are confined to a relatively small area. In both these diseases the nervous system is specially affected, yet no diphtheria or tetanus bacilli are found there. Evidently, then, the damage is done by the diffusible poison, and that this is so may be shown by inoculating certain animals with diphtherial or with tetanus toxin solution, when they will be found to die of diphtheria or tetanus, just as if they had been inoculated with diphtheria or tetanus bacilli themselves.

The bacteria and their toxins, however, do not have it all their own way. The blood and tissues possess considerable powers of resisting bacterial action, and these powers are called into play whenever a bacterial invasion occurs. The vigour of these natural resistant powers varies considerably in different individuals, and so an enquiry into the characters of these resisting powers, with the object of discovering a means of strengthening and reinforcing them, is of the highest importance, and constitutes the study of the artificial production of immunity—the artificial production of the power to resist infection.

The underlying principle of immunity is found in the fact that one attack of an infectious disease protects from another attack of the same disease. Thus an attack of scarlet fever, measles, or smallpox, generally protects from future attacks of the same disease, but not of the others. That is the individual has acquired immunity to measles, or scarlet fever, or smallpox, by passing through an attack. An attack, say, of smallpox, calls forth the individual's power of defence, calls forth the production of antitoxic substances in his blood, which ultimately destroy the smallpox virus, and so permits the individual's natural recuperative powers to come unhampered into play. After the attack he is in a stronger position than formerly with regard to that particular disease, for his blood remained rich in the specific antitoxic substances produced in it, and these render him immune to further attacks of that particular invader.

To obtain this immunity, however, it is not necessary that the disease be acquired by the usual natural process of infection; artificial production of the disease, even in a mild form, is equally efficacious. This has long been practised in the case of smallpox, immunity to this disease being given not only by a previous attack naturally acquired, but also by vaccination with lymph from an animal or human being infected with vaccinia or cowpox, which is merely a modified form of smallpox. The immunity or protection from smallpox afforded by these two methods differs in degree, being greater in those who have passed through an attack of smallpox than in those in whom a comparatively trivial form of smallpox has been produced by vaccination; still, the vaccinated individual *is* immunised or protected against smallpox, and that without danger to himself or others.

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* Inaugural sessional address to the Pharmaceutical Society of Great Britain, delivered at a meeting held in Edinburgh, November 18, 1903, and concluded from page 741.

The production of immunity to smallpox by vaccination was a purely empirical discovery. The scientific study of immunity may be said to date from the early investigations of Pasteur, who, in 1880, discovered that inoculations with non-virulent cultures of the bacillus of chicken-cholera gave immunity to subsequent inoculations with a virulent culture of this microbe. This suggested the possibility that immunity to all bacterial diseases might be acquired by man if he were inoculated with their attenuated or weakened bacteria or toxins, and, as a matter of fact, we now possess a number of prophylactic vaccines, anti-cholera, anti-typhoid, anti-plague, which have already given more or less encouraging results. These vaccines, so-called because the idea is the same as that of vaccination for smallpox, are simply weakened bouillon cultures of the microbe of the disease it is desired to protect against.

A culture of a virulent disease-causing bacillus, such as the typhoid, may be weakened or robbed of its virulence by simply heating it, say, at 70° C. for thirty minutes. The anti-typhoid vaccine with which many of the men proceeding to the late war, and who were about to incur the risk of typhoid fever, were inoculated, was a weakened bouillion culture of the typhoid bacilli, and the modified attack of typhoid thus artificially induced was intended to confer on the individual so treated direct or active immunity to typhoid, and thus either to prevent him contracting the disease at all, or to modify an attack should he actually become infected. The day may come when vaccination for smallpox is performed with a weakened culture of the as yet undiscovered microbe of that disease—without recourse to the calf, which at present supplies the, so to speak, weakened culture, the vaccine lymph. The duration of immunity is variable; it may last for weeks, or months, or years, and that depends on the individual, the bacterium or toxin, and other factors.

We are now approaching our subject proper, bacterial or

Serum Therapeutics.

If an animal be inoculated with non-fatal doses of bacterial culture or toxin, the result is that immunity, active or direct immunity, to the particular bacterim or toxin employed, is conferred on it. If now some of the blood of this immunised animal (animal A) containing, of course, the products of active immunity—the antitoxin—be introduced into another animal (animal B), immunity, called passive or indirect immunity, to the same bacterium or toxin, is instantly conferred on this second animal (animal B). Suppose, for example, that active or direct immunity against diphtheria is conferred on animal A by inoculating it with a series of doses of diphtheria toxin, and that a few C.c. of A's blood are then transferred to animal B, passive or indirect immunity to diphtheria is instantly conferred on animal B. The introduction of A's immunised blood into B has rendered the latter proof against subsequent diphtheria infection; it has acted as a prophylactic.

It is now natural to ask whether, in the case of B being already infected with diphtheria, the injection of a quantity of antitoxin-laden blood-serum from A would be curative, and if animal B be thus cured by A's serum, why not also human sufferers from diphtheria? (Serum is the clear fluid part of blood from which the clot has been separated, and in which the antitoxin is dissolved.) This question was first answered by Behring, who reported the recovery of guinea-pigs after inoculation with diphtheria bacilli in such doses that the animals would have died had they not been treated with the serum of another animal previously rendered immune to diphtheria. The same observer soon announced good results in children suffering from diphtheria. That was in 1894; since then the antitoxic serum treatment of diphtheria, based on such solid experimental foundations, has been thoroughly tested in tens of thousands of cases, and is now considered to be the most brilliant discovery yet made within the domain of therapeutic medicine.

Coming now to speak of the

Production of Anti-Sera,

we must keep in mind that each serum acts specifically towards its own toxin or bacterium, *e.g.*, anti-diphtherial serum is of use in diphtheria alone, and is of no value in other infections, though why this is so still remains a mystery. From this it follows that each serum must be obtained by immunising an animal with cultures of the particular bacterium or with the particular toxin against which the serum is to be an antidote. Of course, therapeutic effects cannot be obtained from the serum of animals in their normal untreated state; they must be specifically immunised, and to such an extent that their serum has attained antitoxic power sufficiently high for curative purposes.

The steps are (1) the preparation of a powerful toxin, (2) the immunisation of the animal, (3) the estimation of the antitoxic power of the serum, (4) the collection of the serum of the immunised animal.

Since the only serum which has turned out a great success and that on which most work has been done, is the anti-diphtherial; it will be best to take it as an example and confine our attention to it; also for convenience we shall use the term toxin instead of bacillus-free toxin solution. To prepare the toxin, a number of flasks containing a glucose-free bouillon culture of very virulent diphtheria bacilli are incubated for about two weeks at the best temperature for the growth of the diphtheria bacillus, viz., 35° C. Having by that time reached their maximum toxic strength, the cultures are filtered through an earthenware filter, the result being a clear, bacillus-free solution of diphtherial toxin. The fluid medium, the bouillon, in which the diphtheria bacilli are grown and in which their toxic products become dissolved, ought to be perfectly glucose-free, for if glucose be present the bouillon becomes acid and toxin formation is lessened and retarded. A small quantity of glucose is generally present in ordinary bouillon as the result of the transformation of the glycogen of the meat with which the bouillon is generally made, and its absence may be attained by using perfectly fresh meat, or meat just commencing to putrefy.

This toxin solution varies in strength according to, amongst other factors, the number and virulence of the bacilli which produced the toxin, and in order to obtain an approximate idea of its strength the solution containing it is standardised physiologically. Varying amounts of toxin are injected into guinea-pigs of 250 Gm. weight, and the smallest amount of toxin which will produce death in three days is thus ascertained and called the minimum lethal dose. A "powerful" diphtherial toxin is one of which 1 C.c. kills a guinea-pig on the third or fourth day. But it is not necessary to employ, in inoculating the horse, a toxin of definite or constant strength; one that has been shown to be more or less "powerful," as tested on guinea-pigs, is used.

The next step is the

Immunisation of the Animal.

The process of immunising an animal for the production of large quantities of serum for therapeutic purposes (such as anti-diphtherial)—the process of gradually, but safely to itself, accustoming the animal, the horse, to the diphtheria poison, so that its blood becomes laden with the antitoxic antidote—is one which extends over five or six months. Since large quantities of anti-diphtherial serum must be available for treating human diphtheria, a large animal, the horse, has been selected in preference to a smaller one, such as the sheep or goat. But there are other reasons; the horse tolerates the action of the toxin well, and yields, as a rule, serum of high immunising value, it is easily bled, and its serum is the least injurious of any to the human tissues, an important point when large doses are being administered. The ox has been tried, but is not such a manageable animal; it is subject to tubercular disease, its serum does not separate so well from the clot, and, of course, the amount of serum obtainable is smaller. A sound horse then is chosen, and after eliminating the possibility of glanders and tuberculosis by the mallein and tuberculin tests, it is brought into good condition by rest and feeding.

Mallein is a weakened bouillon culture of the glanders bacillus, which is used to diagnose glanders in animals by inoculating them with it; if the animal be infected with glanders there results, at the site of the inoculation, a painful swelling five inches in diameter, and a rise of 1·5° to 2° C. in temperature. Tuberculin is a weakened glycerin-bouillon culture of the tubercle bacillus, and its inoculation into an animal which happens to be infected with tuberculosis is followed by a marked rise of temperature, between the ninth and the eighteenth hour after the injection. The horse being now ready, the diphtheria toxin is at first injected into the subcutaneous tissue in very small quantities, a few C.c. about twice a week. A slight rise of temperature results, which persists for a day or two. The dose is gradually increased till, by the sixth week, the horse is receiving 30 to 40 C.c. three times per week, and by the twelfth week perhaps 250 C.c. at a time intravenously. When the animal ceases to react to further injections, and that does not generally happen in less than five months, a few C.c. of blood from the jugular vein are drawn off under strict aseptic precautions so that its antitoxic strength may be tested. As the antitoxic power attained by the serum of different horses inoculated with similar amounts of toxin, and, it may be, during a similar period, varies very considerably, it is necessary to estimate and note the

Strength of the Serum

of every immunised horse before drawing it off in quantity and sending it out for therapeutic purposes. It is just as necessary to know the strength of a solution of antitoxin—and that is what antitoxic serum amounts to—as it is to know the strength of any other solution used in medicine. The method of estimating the therapeutic power employed in Britain and Germany is that elaborated by Behring and Ehrlich, the power or value of a serum being reckoned in immunity units. The unit is an arbitrary standard, and refers to the toxin-neutralising power of serum, and not to the volume. Thus a unit may be contained in very different volumes of different yields of serum, *e.g.*, a unit may be contained in 1 C.c. of one serum, or in 0·005 C.c. of another—the latter serum having, of course, much greater toxic-neutralising power, and therefore many more units per C.c. than the former; it is, in short, a much more concentrated solution of antitoxin. But the standard by which the power of serum is measured is constituted by what is termed a normal serum, 1 C.c. of which is said to contain 1 unit of immunity, and 0·1 C.c. of which neutralises 1 C.c. of normal standard toxin. A normal serum for standardising purposes, or, at all events, a serum of guaranteed number of units which may be diluted to normal, is obtainable from a serum-testing institute. One C.c. of normal serum, then, contains 1 immunity unit, and 0·1 C.c. of normal serum neutralises 1 C.c. of toxin. But suppose, for example, it is found that 0·01 C.c. of a serum under investigation neutralises the same amount of standard toxin as 0·1 C.c. of normal serum, this serum must be ten times as strong as normal serum, and since 1 C.c. of normal serum contains 1 unit, 1 C.c. of this serum is said to contain 10 units.

Similarly, a serum, 0·001 C.c. of which neutralises the same amount of toxin as 0·1 C.c. of normal serum, is 100 times as strong as normal serum, and since 1 C.c. of normal serum contains 1 unit, 1 C.c. of this serum must contain 100 units, and 10 C.c. of it contains 1,000 units. Again, a serum 0·003 C.c. of which neutralises the same amount of standard toxin is 300 times as strong as normal serum, each C.c. will contain 300 units, 7 C.c. will contain rather more than 2,000 units, and 10 C.c. will contain 3,000 units. The tests, of course, are physiological, and are made by inoculating guinea-pigs, each weighing as nearly as possible 250 Gm., with a mixture of a varying quantity of the serum under investigation and a lethal test dose of standardised toxin, neutralisation being indicated by prevention of the death of the animal within the fourth day of the experiment, death at a later period being neglected.

The question of the most accurate method of estimating the activity of sera is still far from being decided; indeed, at the International Congress of Hygiene held at Brussels in September last, an international commission was appointed to inquire into this difficult and important subject. I need not, therefore, go into details of a complicated method which is acknowledged to be by no means perfect, and which may before long be considerably modified.

The gradual introduction of the toxin, then, having called forth the required amount of antitoxin—in other words, the serum having attained a sufficiently high antitoxic power—5 to 10 litres of blood, the quantity depending on the size of the animal, are drawn off into sterilised bottles by means of a sterilised canula plunged into the jugular vein. The bottles of blood are placed in a cool, dark room to allow the serum to separate thoroughly from the clot, which generally takes about thirty-six hours.

The serum is then pipetted or decanted into sterilised bottles, a single dose, equivalent to a certain number of units, being placed in each bottle so as to obviate the risk of contamination by repeated opening. The bottles are preferably hermetically sealed in the flame, and throughout the manipulations the most minute aseptic precautions are necessary. That is to say, bacteria must be as far as possible excluded from the bottling room, which should be used for no other purpose, by practising the most scrupulous cleanliness, by filtering the air entering the room at the ventilating inlets through cotton wool so as to render it germ-free, and by frequently spraying the cemented walls, tables, and floor with a disinfectant; the employees should disinfect their hands and wear sterilised blouses.

The antitoxic serum-producing value of different horses varies very considerably; from certain horses, no matter how much toxin be injected, it is impossible to obtain a serum of sufficient antitoxic power, and there are, unfortunately, no known means of ascertaining this inability beforehand. From others, unfortunately, a serum of high antitoxic value is often obtained after the injection of comparatively small quantities of toxin. Thus, owing to the variation of the, so to speak, personal factor —the horse—the quantity and power of antitoxin produced bear no constant relation to the quantity or strength of toxin injected. As a rule, a horse once immunised and yielding a serum of high antitoxic power continues to do so for a time without further injections of toxin, in spite of the repeated withdrawal of large quantities of antitoxin-laden blood. The antitoxin evidently continues to be secreted—to be, indeed, renewed—by certain as yet undetermined cells of the horse.

without further stimulation by toxin. Of course, the antitoxic power of the serum of every antitoxin-producing horse must be estimated from time to time in case it is necessary to renew the toxin injections and so raise the antitoxic power of the serum to the desired standard. Sometimes, in spite of renewed injections of toxin, the antitoxic power does not increase; for this the best remedy is a year's cessation of inoculations.

Serum ought to be kept in a cool place away from the light; it ought also to be borne in mind that frost injures serum. For exportation to warm climates it ought to be prepared in thin, and therefore readily soluble, scales by evaporating the liquid serum to dryness over sulphuric acid in a room not over 40° C. On mixing the scales with sterilised—that is, boiled and cooled—water immediately before injection, all the active antitoxic constituent goes into solution, leaving a small amount of inert material undissolved which need not be injected. The scales keep better than the fluid; fluid diphtheria and tetanus sera retain their antitoxic power sufficiently up to ten or twelve months or so. Those sera which are more anti-bacterial than antitoxic, such as the anti-streptococcic, lose their strength much more rapidly, and this rapid loss of strength probably constitutes one of the reasons why they are not, so far, to be depended on to give good results. They should, therefore, be used as fresh as possible.

As sera are not, or, at least, very slowly, absorbed by the mouth or rectum, they are usually injected under the skin, say, of the flank. They may also be injected into the circulation direct, that is, intravenous injections may be made, and by this method absolutely brilliant results in apparently hopeless cases of diphtheria have been recorded, results not obtainable by the subcutaneous method. Evidently by the intravernous method the circulating toxin is much more rapidly and effectually neutralised.

In the case a rapidly diffusible and therefore rapidly fatal poison, like snake venom, which kills 20,000 people annually in India alone, by far the best results are given by the intravenous method of injecting the anti-serum—the anti-venin.

With regard to

Dosage

the best results are obtained from early and frequent and fearless administration of sera of high antitoxic value. The longer the delay the greater the quantity of serum required. The amount or strength of toxin in the patient cannot, of course, be estimated except by the severity of the symptoms, and therefore the safer plan is to over-neutralise it; in other words, it is safer to give too much than too little, to give needlessly many units rather than too few. Many failures in the treatment of diphtheria have undoubtedly been due to insufficient dosage and to delay in commencing the treatment. Yet it would seem that diphtherial antitoxin is absolutely harmless, and that an overdose is impossible, for as many as 35,000 units have been given in a single dose, and 82,000 units in three doses, intravenously. After what was said in reference to standardisation of serum it is scarcely necessary to remind you that serum dosage is not reckoned by volume, but by units, and that in different sera the same volume of serum may represent a very different number of units; thus 10 C.c. of serum A may contain 4,000 units, while the same quantity of serum B may only contain 2,000 units.

Injections of antitoxic serum are sometimes followed by rashes and joint pains; the serum itself, not its antitoxic constituent, is responsible for these; injections of serum of healthy, non-immunised horses just as frequently giving rise to the same effects. The serum of a particular horse may, however, cause this unpleasantness to such an extent that its employment as an antitoxin-producer has to be stopped.

The other really antitoxic serum, that for

Tetanus

or lockjaw, is prepared in much the same way as the anti-diphtherial. Those sera which are anti-bacterial rather than antitoxic, such as the anti-streptococcus and anti-typhoid, are obtained by inoculating the horse with actual cultures of the bacteria themselves. They are not yet giving the good results they were expected to give. Attempts to produce a serum as an antidote to the ordinary chemical poisons, alkaloidal, organic and inorganic, have failed completely. The increased tolerance of morphine-eaters is not due to the formation of an antitoxin, but to an increased power of the tissues to destroy morphine. It would seem that only substances having a chemico-biological action, such as snake venom, abrin, ricin, robin, and crotin—proteids and their allies—can give rise to antitoxic bodies, and this, along with their behaviour to heat, and their chemical reactions, brings them into line with bacterial toxins.

As to the origin of the antitoxin, say, in the blood of the horse immunised against diphtheria, most authorities are agreed that it is secreted into the blood by certain, as yet undetermined, cells which are stimulated to do so by the toxin. The antitoxic substance has not yet been isolated from antitoxic serum; thus both antitoxins and toxins are only recognised by their physiological properties. Antitoxins are probably allied to the globulins.

As to how antitoxins act authorities are not yet agreed, but the majority support Behring's view that they do so by combining chemically with the toxin in the circulation and tissues, rendering it inert by neutralising it, and thereby permitting a more free and unfettered action of the body's natural recuperative powers. That the neutralisation of toxin by antitoxin is of the nature of a chemical union may be shown in the following manner. We know diphtheria toxin passes through a colloid membrane, and that diphtheria antitoxin does not. If equal parts of toxin and antitoxic serum be mixed, and immediately put on to filter, a certain quantity of toxin passes through; but if such a mixture be kept some time before filtration very little toxin passes, and if kept long enough no toxin whatever passes through. Not only so, but the fluid not yet filtered is harmless to animals, showing that there is complete neutralisation.

See that you do not confuse the various anti-sera with the vaccines. The anti-sera are used mostly, as you are aware, in the curative treatment of individuals actually suffering from certain diseases, though it is true that at least one anti-serum, viz., the diphtherial, is also used successfully as a prophylactic—that is, anti-diphtherial serum, say 1,000 units, is used to inoculate healthy people who are incurring the risk of diphtheria infection, the passive immunity to diphtheria so obtained being said to last three weeks.

Vaccines,

on the other hand, have nothing to do with the serum of an immunised animal. They consist of the attenuated bouillon cultures of certain bacteria, and the chief examples are the anti-typhoid, anti-cholera, and anti-plague. They are used only as prophylactics for inoculation of healthy people, who are incurring, or are about to incur, the risk of getting these diseases, just as vaccine lymph is used to inoculate healthy people who may subsequently incur the risk of smallpox. They are not used therapeutically, as the sera generally are.

It is not too much to say that bacterial therapeutics is yet in its infancy, and that though it has achieved only one real success, viz., in the treatment of diphtheria, it will, if I may be permitted to take what has been called a retrospective glance into the future, sooner or later provide an equally effective means of combating all bacterial diseases, such as typhoid fever, tuberculosis, pneumonia, and rheumatic fever. But one of the first things to be investigated and discovered is the chemical constitution of what we, in our ignorance, call toxins. Here for the skilled pharmacist is a fruitful field for the exercise of his chemical and biological knowledge, and manipulative ability. The task of the physiologist and pathologist investigating the rationale of their specific action on the various human tissues would then be an easier one.

I am well aware I have glided over a number of interesting points, but you ought to be thankful I do not finish by inflicting on you a discourse on theories of immunity, the nomenclature of which is so extremely technical that even to many medical men it is not intelligible. Such would only have served to distort your view of the facts which I have, in a necessarily limited time, endeavoured to place before you, in the hope that they may help to give you a clearer conception of, and stimulate your interest in, a branch of scientific medicine and pharmacy which is growing, and will continue to grow, in importance.

MORE PLANT ANALYSES.*

BY DR. ISSLEIB.

There has been an alarming increase this year in the number of cases of poisoning by fungi, and the physician finds so much the more difficulty in treating them properly, as but little definite is known of the poisonous constituents of these plants. The fly agaric is about the only exception, the toxic constituents of this fungus, muscarine and amanitine, having been separated and examined. In all probability the other poisonous fungi contain different active constituents in the place of or possibly in addition to muscarine and amanitine, but many cases of poisoning by edible fungi, which have not been consumed until some time after they have been gathered, are doubtless due to the presence of ptomaines.

The reason why we are insufficiently acquainted with the chemical constituents of the fungi is probably due to the difficulty of obtaining material for examination. Some poisonous fungi are of very local occurrence, and are to be found only during a very limited period, but these circumstances can scarcely be a serious obstacle in approaching what is certainly most interesting field for work, and one specially suitable for some of our pharmaceutical colleagues. The professional chemist has unlimited scope in the production of new synthetical compounds, whilst the intimate connection of pharmacy with botany leads pharmacists in particular in the direction of plant analysis. During the last few years we have been overwhelmed with synthetical preparations of very doubtful value, and the time has come when more attention should be devoted to the examination of such plants as have a well-marked action upon the human system, but have not yet been thoroughly investigated.

The following fungi have distinctly poisonous properties, but the list makes no pretension to completeness. *Boletus satanas* deserves first mention, it is often mistaken for *Boletus luridus*, which is edible but much darker in colour. The poisonous *Lactaria torminosa* resembles *Lactaria deliciosa*, the most delicious of all edible fungi, but is distinguished by its milky white juice, that of *L. deliciosa* being orange-coloured. *Russula emetica* is also without doubt poisonous, even its penetrating odour being said to produce vomiting. *Hypholoma fasciculare* also has toxic properties. *Amanita bulbosa* is one of the most dangerous fungi, and is often mistaken for the mushroom; its poisonous effects do not manifest themselves until twelve or sixteen hours after it has been eaten, and as this peculiarity has been reported in many cases of poisoning, I attribute the symptoms to the fungus alluded to. *Scleroderma vulgare* is poisonous and *Elaphomyces granulatus* is deserving of investigation, as possibly it contains some constituent that justifies its use by country folk as an aphrodisiac for cattle.

Whilst the chemical study of the fungi is of immediate interest, owing to the number of cases of poisoning that they give rise to, the higher orders of plants contain many species with the chemical constituents of which we are imperfectly acquainted, and from which a number of interesting bodies may probably be isolated. A few such plants may be mentioned here. *Lolium temulentum* as an impurity in flour has been known to give rise to symptoms of poisoning; the toxic constituent has not yet been sufficiently investigated. Our knowledge of the acrid constituents of certain species of *Ranunculus*, particularly *R. acer* and *R. sceleratus* is very imperfect. Fool's parsley, *Aethusa cynapium*, has not been thoroughly examined, and by some its poisonous properties have been denied. Probably anemonin is not the only active constituent of certain species of *Anemone* which deserves further investigation. The acrid principle of *Arum maculatum* should also be the subject of renewed enquiry. *Chærophyllum temulum* is also said to be poisonous, but it has not yet been investigated. Even the water hemlock, *Cicuta virosa*, should be re-examined, as it has already been the cause of many deaths; the existence of the volatile alkaloid cicutin is doubtful, and cicutoxin appears to be a mixture of several principles. Insect flowers have not yet been adequately examined, and nothing is known of the chemical constituents of *Colutea arborescens*, although the leaves have a marked physiological action.

The various species of *Cytisus* are also worth further examination in order to ascertain whether they all contain the same poisonous alkaloid as the laburnum, viz., cytisine. Our knowledge of the chemical constituents of the genus *Delphinium* is also imperfect. The leaves and flowers of *D. consolida* were formerly official under the name of herba calistrapæ; the seeds produce profuse perspiration, nausea, and diarrhœa. We know but little of the active constituents of the genus *Euphorbium*; the peasants have no doubt of the medicinal activity of *E. cyparissias* and *E. esula*, and the investigation of these herbs would certainly yield valuable results. All the parts of *Euonymus europæus* have a powerful action; the seeds contain a viscid fatty oil, to which possibly the purgative action is due. The root of *Aristolochia clematitis* was formerly in high repute as a parturient, and such observations of the ancients ought not to be entirely neglected, since, being restricted to the vegetable and animal kingdom for their drugs, they may have been acquainted with many a valuable remedy which has fallen into disuse. The numerous species of *Lactuca* would also doubtless repay chemical examination. *Physalis alkekengi* has not yet been adequately investigated. Various species of *Rumex* have produced toxic symptoms when eaten by children, and it is not known whether these are due simply to the oxalic acid in the plants. *Sedum acre* contains an acrid principle little known, but worthy of further examination; *Solanum nigrum* and even *S. dulcamara* should be re-investigated. The roots of numerous species of *Viola* are emetic, and these should also be subjected to renewed enquiry.

In the foregoing enumeration I have confined myself chiefly to such plants as have a powerful action and of which our knowledge is incomplete, and have endeavoured to give a stimulus to their examination, but I would on no account deter pharmacists from working upon other interesting plants. I have felt the want of a further knowledge of the active constituents of a number of plants that are still in occasional use. There is a magnificent field here for scientific pharmacy, and I trust that my remarks may be successful in directing attention to it.

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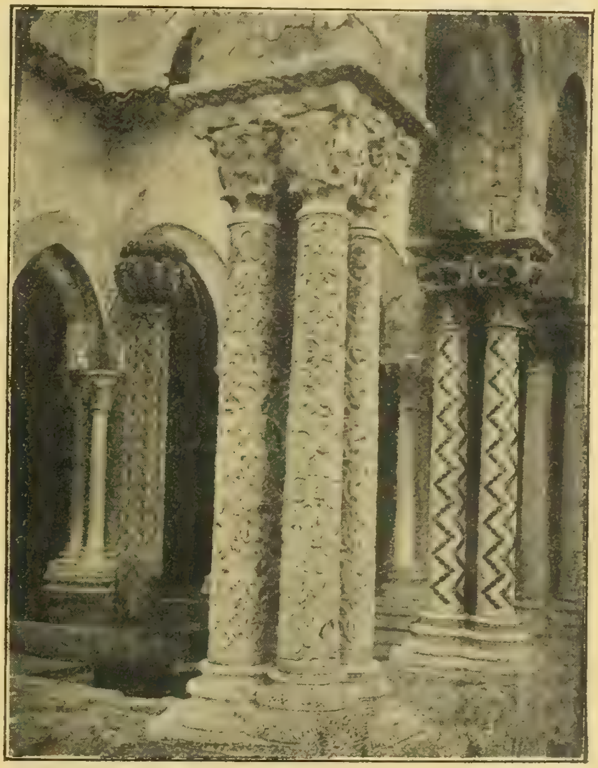
SOUTHERN AND EASTERN SKETCHES (2).

BY G. CLARIDGE DRUCE, M.A., F.L.S., PH.C.

ONE of the most interesting relics of the Norman occupation of Sicily is the Cathedral of Monreale, which was built in the latter end of the twelfth century. Monreale, the seat of an archbishopric, is only about five miles from Palermo, and the electric tramway affords some beautiful views, while the surrounding vegetation is extraordinarily prolific. The prickly pear is luxuriant and fruits freely, the "pears" being on sale by itinerant vendors. They are to me rather mawkish in flavour, but the oranges were delicious, and we assimilated them in a little bower with some good Marsala, overlooking the richest valley filled with orange, lemon, and other fruit trees, while in the far distance stretches the sea to the Lipari Isle, with the ever-active Stromboli. The streets were crowded, as it was Easter Sunday, and brightly dressed children were "processing," while other children, male presumably, were in the belfry swinging the bell, or rather the clappers, with horrible dissonance. But it was quiet enough inside the magnificent church built by the Norman King, William the Good, where 70,000 square feet of wall are covered with mosaics of a very fine order. They appear to me far finer than those in St. Mark's at Venice. A huge porphyry sarcophagus contains the body of William, the Norman King, and there is an altar of massive silver of exquisite workmanship. The whole building bears evidence of Saracenic influence, the beautiful capitals to the marble pillars being very ornate, but these are even more exquisitely shown in the cloisters of the adjoining Benedictine Monastery, where each capital is carved with a different design, and the shafts are often inlaid with coloured marbles. There is also a chaste fountain, and the whole scene of the pillared cloister, the orange filled courtyard, and the massive cathedral is one of the most impressive kind. At Monreale, from Heaven to Hades is but a step, or to put it more correctly, only a street. I wanted to climb a hill called Il Castellacio, 2,505 feet high, which rises up abruptly to the right of Monreale, but to get to it we had to pass up some lanes which were most filthy, the roadway being the receptacle of every kind of dirt conceivable, the stench was appalling, here and there a hurdle was laid over the open sewer or an opening in the road, it was difficult to say which in one's hurried flight, and although festa day, the quantity of "washing" that hung out of the windows or, rather, gaps in the walls, was out of all proportion to the apparent needs of the inhabitants. How curious it is that wet clothes, presumably, although not from their colour obviously, washed, squalor, and a teeming infant population go together not only in an East-End court, but in a South-Eastern "vicolo." A breathless climb of a few minutes, however, took us away from the mephitic odours, and a very stiff ascent led us up to the rocky ground and eventually to the little enclosures walled in by rough stone boulders, which alone prevented the terraces from being washed down to the valley below; these enclosures being for the culture of sumac, *Rhus coriaria*, a considerable item in Sicilian commerce. On the northern side, a fine view was obtained over the Valley of San Martino, a suppressed Benedictine Monastery founded by Gregory (the Pope who, seeing the British boy-captives in Rome, remarked not Angles, but angels, on account of their fair complexions). On and about the cliffs here grow the lilac flowers of *Arabis collina*, the endemic white flowered *Arabis longisiliqua*, and milkwort, *Polygala Preslii*, as well as the orchids *Ophrys lutea* and *aranifera*, and *Orchis longicorna*. The top of the hill is crowned by a deserted fort, and a prospect of rich and varied beauty is spread below. We had a carabineer with us, who showed me a rock cavern out of which he had dragged a brigand, and by the aid of chain

INTERIOR OF THE CATHEDRAL, MONREALE.



MARBLE PILLARS IN THE CATHEDRAL, MONREALE.

handcuffs had taken him to Palermo. The handcuffs are capable of giving great pain when twisted, and he said after a short experience the brigand went quietly enough.

I was also fortunate to find here *Thlaspi tinei* hitherto only reported from the Madonia mountain, also *Erophila brachycarpa*, and *Euphorbia biglandulosa.*

Rarely or never in a hotel have I sat down to a better dinner than that supplied on Easter Sunday at Palermo, and it was a large and merry company that dined in the spacious and handsome room. A Hungarian gentleman present afterwards delighted us with some music, not the least charming piece of which was an improvisation of the "Blue Bells of Scotland," which, at my request, he played.

STREET IN MONREALE.

Easter Monday is the anniversary of the Sicilian vespers, and therefore the proper thing to do is to visit the Church of San Giovanni degli Eremiti, not far from the Royal Palace, the oldest church in Palermo, being constructed out of a Saracenic Mosque in 1132, but the original frescoes are now scarcely visible, as under the Normans the entire structure was used as a burial place for the nobility.

The adjoining cloisters, with the beautiful arcading, are singularly picturesque, and one of the best views of the church is from the centre of the court, where the maidenhair luxuriates.

In 1282, on the Easter Monday, the Sicilians, as was their wont, went out in numbers to the open country beyond, picnicing, as we should say, and in meeting old friends and neighbours, forgetting for the moment the harsh tyranny of their oppressors, but even here they were not free from their foe, for a number of French officers and soldiers from the adjacent garrison came out and mixed with the people, drinking wine, without asking leave, from the cups of the Sicilian men, and grossly jesting with the Sicilian women, until an officer named Drouet, fired with other people's wine, ordered his men to search the Sicilians to see if they carried arms, and this was quietly endured, but when Drouet laid his hand upon a beautiful Sicilian woman walking with her husband, and ordered his men to search her also, himself thrusting his hand into her bosom; then, with his half-fainting wife in his arms, the husband stabbed the French officer, screaming "Now let these Frenchmen die at last." And the bells of San Giovanni, ringing to vespers, gave the signal for the revolt which immediately spread. The Sicilians, armed with knives, sticks and stones, began the memorable massacre, and no Frenchman who met them lived to turn back; like the Ephraimites of old, when their nationality was in doubt, the French were obliged to pronounce the Sicilian word "Ciceri," which no Frenchman could say without revealing his nationality, and when morning broke neither man, woman, nor child of the French was left alive of all those who had aired themselves with such effrontery but the day before. Thus ended the *régime* of Charles d'Anjou. It was difficult to call up the scene, for what was then open country is now built over, and a pleasant and peaceable looking population was all around, but Etna appeared equally quiet when we saw it, with scarcely a filmy cloud of smoke to suggest that the hidden fires still existed.

Naturally, one could not leave Palermo without seeing the Palazzo Reale, with its exquisite Cappella Palatina, one of the most beautiful royal chapels in the world, so exquisite are the glass mosaics on a golden ground, bright with Oriental splendour, with which in the time of the great King Roger the interior was adorned, while the pulpit and gigantic marble candelabra of the twelfth-century Norman work are also very fine. Adjoining, is the observatory, where the celebrated astronomer Piazzi, in 1801, discovered Ceres, the first of the great series (no "pun" intended) of the asteroids, which, like the minor elements, seem to be well nigh inexhaustible.

CLOISTERS AND CHURCH OF SAN GIOVANNI DEGLI EREMITI.

To those interested in antiquities the Muzeo Nationale, under the superintendence of Signor Salinas, who has so carefully superintended the excavations of Soluntum, is well worth a prolonged inspection, since it contains the celebrated Metopes from Selinunte. That city was founded by the Greeks in 627 B.C., and it was destroyed 429 B.C., so that one is able to see the development of Greek sculpture from its early stages to nearly its culminating point of perfection. The visit to the museum well precedes a journey to Segesta or Selinunte. chose the former, since one could accomplish it in a day. We, therefore, went by a special train, which started about 8.30, and a wonderful journey it was, for the most common plant on the sides of the railway was the scarlet geranium, forming quite a hedge, and, of course, in vivid colouring although even that had its rivals in the golden chrysanthemum (*C. coronarium*), pheasant's eye (*Adonis*), which were plentiful on the railway banks, the former being one of the conspicuous plants of the island. The railway runs through the Conco d'Oro, with its oranges and lemons, its pretty Mandarin orange trees, and here and there the Japanese medlar, *Eriobotrya japonica*, while the cliffs of Monte Pellegrino are on the right, and then we pass through fine mountain scenery between Monte Gallo and Monte Billienic, and then reaching the coast, where fresh beauties (floral I mean) greet one.

CLOISTERS OF SAN GIOVANNI DEGLI EREMITI, PALERMO.

We dismounted at a small railway station, where some conveyances were ready to drive us to Segesta. We had a couple of armed carabineri to keep off the brigands and beggars, and had a pleasant drive by the River Gaggera, where there are remains of the hot baths, Thermæ Gegestanæ of the Romans, and a rich and varied flora. We dismounted at the Via del Tempio, and crossed the river by a ford, and then began climbing the right slope of Monte Varvaro, in parts golden with yellow lotus, with various cornfield weeds, such as *Valerianella*, *Fedia*, *Galium saccharatum*, *Reseda alba*, *Silene decumbens*, *Calendula arvensis*, *Brassica pubescens*, etc., while the rocks were rich with many flowers, a shrubby catchfly, *Silene fruticosa*, only known in Sicily and the Peloponnesus, a shrubby perennial scabious, *Scabiosa cretica*, and the golden asphodel, *Asphodeline lutea*. The asses' fennel, *Fœniculum piperatum*, was in most magnificent growth, while the common asphodel, *Asphodelus ramosus*, was very frequent on the open ground, and the esparto grass (*Ampelodesmos tenax*), used for paper, also occurred. Suddenly, in front of us on this lonely hillside, loomed the great unfinished temple of Segesta, with its thirty-six huge unfluted columns, now deeply incised with the tooth of time, and worn by the wind and rain of centuries, but yet of dimensions so great as to give the effect of being quite intact, Its lonely situation, surrounded by lofty mountains, makes the simple, but majestic building, of faultless outline, singularly impressive. The ancient city, then called Egesta, which had a close relation with the Phœnicians, and its inhabitants instigated Alcibiades to make his great expedition against Syracuse, and promised monetary aid. The Athenians sent representatives to Segesta to find out if the inhabitants were sufficiently wealthy, and were deluded by an extraordinary fraud, for the war treasure of precious metals which was exhibited to them was in great part made for the occasion, but not of gold or silver, and when the ambassadors were feasted by the inhabitants, the gold and silver vessels used were sent on from one house to the other, so that the ambassadors took home glowing accounts of the richness of the city. But time brought its Nemesis; in after years Agathocles landed with a small force, and, laying a tribute upon the city, he suddenly accused the citizens of attempting to assassinate him, and gave orders to his soldiers to exterminate them. The rich he tortured till they revealed the hiding place of their treasures, and then they were killed, The city itself was all but utterly destroyed, 10,000 of the inhabitants being massacred, nothing surviving but the lovely theatre hewn out of the living rock on the overhanging hillside, and the great solitary temple which now dominates the scene. In this, such is Time's irony, the tourist to-day takes his lunch, the tinned tunny, the cold fowl, and hard-boiled eggs are enjoyed as if no panic-stricken Segestan had tried to reach its portal as a sanctuary, but found in it only a grave; while the red wine is now quaffed by strange visitors where wine from a different vintage once flowed all too freely.

THE TEMPLE OF SEGESTA.

The theatre, with its rich hewn steps, is very interesting, as the view from it is most beautiful; two mountains, Monte Inice and Monte Sparagio (about the height of Snowdon), being before one, and rendered more striking in appearance from the long line of cumulus cloud which rests upon their sides, while the winding Gaggera is to be seen in the valley below, and the sumac plantation (not yet in leaf) on the hillside near. Close by are great clumps of the wild fennel (round which the swallow-tails, *Papilio Machaon*, and *Podalirius* are fluttering) in its most ornamental growth, the yellow asphodel, with its golden spikes of blossom, is attracting brilliant beetles, while the bees are busy about the dead-nettles and fragrant labiates. On our way back the Carabineers were eating the young legumes of the carob tree (*Ceratonia siliqua*), which is frequently cultivated.

Near the railway station the pennyroyal, *Mentha pulegium*, grew plentifully, and the large *Ranunculus lanuginosus*, the curious water dropwort, *Œnanthe globulosa*, the catchflies, *Silene vespertina* and *S. nocturna*, the rush, *Scirpus holoschœnus*, *Vicia bithynica*, *Stellaria Boracana*, and other plants were found.

A very pleasant excursion was also made to Acquasante, which is on the coast to the north of Monte Pellegrino, as it is an excellent spot for a bathe, and a pleasant walk hence is to be had round the base of Pellegrino. The vegetation was of a very interesting character; *Fumaria speciosa*, with its beautiful racemes of cream and dark chocolate coloured flowers and elegant foliage, the abominable malodorous rue, *Ruta bracteosa*, the curious fruited *Biscutella didyma*, quantities of the umbellifer *Tordiglium apulum*, with its pretty cremocarps, bushes of the hawthorn, *Cratægus azarolus*, with its deeply trifid leaves, perhaps originally introduced from the East, I saw frequently in Tunis, *Fedia cornucopeia*, with white flowers, the prickly *Rubia peregrina*, and many others. The overhanging limestone cliffs of the mountain were very fine, and the crisp pleasant air made the day delightful; and as this was to be the last we spent at Palermo, it made us still more regretful to leave such pleasant surroundings.

NOTES ON ECONOMIC BOTANY.

Patchouli.

The principal sources of supply of the leaves are Penang the province of Wellesley, Johore, and the little island of Cucol near Singapore. Two varieties are under cultivation, that of Java having a longer leaf. The Chinese adulterate the leaves with those of *Urena lobata* and *Hyptis suaveolens*. The former is almost odourless, and the latter has an odour somewhat resembling that of pennyroyal. The culture is remunerative, as the plant is easily grown, and it is possible to obtain three harvests in a single year, but the supply is apt to exceed the demand (*Journ. d'Agric. Trop.*, **23**, 160). The long leaved variety has been described in the *Pharm. Journ.* [4], **2**, 223, under the name of Dilem, which is the name they bear in European commerce.

Cultivation of Gutta Percha.

The wholesale destruction of gutta percha trees in the Malay Peninsula led, some year ago, to endeavours being made by the Dutch to cultivate the tree and to discover the best varieties of it for cultivation. The results obtained were published in a paper by Dr. Burck, of the Buitenzorg Botanic Garden, in Java. Since that time the species selected as the best have flowered and fruited freely, and the Governor of Java has liberally supplied seeds to all applicants desirous of growing the trees; but, unfortunately, like many oily seeds, they will not bear transportation, even as far as Ceylon, without detriment. The best method of preserving them is to pack them when mature in dry powdered charcoal, or other absorbent and incorruptible powder, in hermetically sealed tins. Cuttings do not strike readily, and young plants do not bear transportation, so much so that it is stated of 100,000 rooted plants imported by the British Government from Borneo to Singapore only 4,000 or 5,000 survived. It has recently been discovered, however, by M. C. Rivère, director of the Jardin D'Essai du Hamma, at Algiers, that woody portions of the branches of the gutta percha trees, 15 to 30 Cm. in diameter, placed in suitable atmospherical and cultural conditions, will give off green shoots, and that these can be made to root easily in a few weeks, so that the plant can be freely multiplied, and young plants can be supplied at a cost of about three francs a picee. An account of the method adopted is given in the *Revue des Cultures Coloniales.* It is proposed to cultivate these trees in the French possessions in Western Africa, where the tropical climate is suitable. Algiers should form a convenient distance from British colonies in both East and West Africa to obtain plants for propagating these valuable trees. When once the trees fruit it will not be difficult to obtain more trees from seeds grown on the spot. The species which are considered to yield the best gutta percha are *Palaquium gutta*, *P. oblongifolium*, *P. borneense*, *P. treubii*, *P. susu*, and *Payena leerii*. It should be noted that English botanists use the generic name *Dichopsis*, and Dutch botanists *Palaquium* for the same genus.—*Burck*, *Rapport Gutta Percha*, 1884, and *Annales du Jard. Bot. de Buitenzorg*, Vol. v.

ORNAMENTAL MEDICINAL PLANTS (2).

BY JOHN R. JACKSON, A.L.S.

Referring to the subject of attractive garden plants, which are at the same time of pharmaceutical interest and importance, and so doubly valuable in a pharmacist's garden, the fact is brought to our memory that not only in the garden up to quite recent times was the beautiful and the useful kept widely distinct, but also between the purely scientific side of botany and its economic aspect there was a great gulf fixed. The Floras of our Colonies, for instance, upon which so much time and money have been spent, have scarcely a single reference to the uses of any one of the thousands of plants described in the technical language of the botanist. This is the more to be regretted in an enormous work like the 'Flora Australiensis,' where the character of plants is so largely arboreous, and where the accurate identification of the species furnishing useful timbers, or other well-known products, is a matter of supreme importance to the colonist. But as the useful side of botanical science has now become acknowledged as the most important to the world at large, we may expect to find in our gardens useful and ornamental plants more generally cultivated side by side, and, as before said, where the two can be combined, so much more interest will be attached to them. We, therefore, offer two or three other examples of plants that might well find a place in most gardens. The first of these is the safflower (*Carthamus tinctorius*), an annual herbaceous, composite plant, which, though it has never been found in a wild state, is considered to be a native of India, Africa or Abyssinia, but now extensively cultivated for the sake of the colouring matter from its florets, or for the oil contained in its so-called seeds, all over India, as well as in Persia, China, Egypt, Spain, Italy, Southern Germany, and other countries. The cultivation of safflower is carried on more or less in every part of India either as a main crop or sown with other plants, frequently occurring along the margins of fields of

Carthamus tinctorius

wheat, barley, grain, tobacco, or opium. As a field crop by itself the seed is sown broadcast. The sowing generally takes place from October to December, the plants flowering towards the end of January, and continuing in flower through February and March, and in some seasons even to the end of May. The plants are carefully gone over every two or three days, and the florets gathered when they are attaining their brightest colour. If left on the plants after this period the resulting dye is considered impaired. In the process of gathering, the flower heads receive no injury, the fecundation having been effected before their removal. The seeds complete their growth, ripening in April and May. After picking, the florets are carefully dried in the shade; exposure to sunlight frequently causes them to lose some of their brightness. The first and last harvests are inferior to the others, as in the earlier gatherings many undeveloped florets are included, and at the close of their growth a number become exhausted and consequently lose much of their colour. The following description of its preparation for market is taken from Watts' 'Dictionary of the Economic Products of India.' If intended for export, after having been dried as above, the florets are either placed in a bag or basket, or other contrivance, permitting of the easy escape of a supply of water which is kept poured on them while beaten or trodden on. This process is continued until the water passes through quite clear. At first it is bright yellow, because of the soluble yellow colour which the florets contain in addition to their valuable red dye. The yellow colour is useless, and as its presence greatly injures the quality of the red dye (especially in dyeing silk and wool, fabrics for which the yellow colours possess a strong affinity), the florets are repeatedly washed until they are quite freed from the yellow colour. River water (if clean) is regarded as preferable to tank water, but the presence of mud or other impurities in the water is most detrimental. The red colouring matter is completely soluble in dilute alkaline solutions, and care must be taken that the water used does not contain soluble alkaline salts; in fact, to be safe, it should be slightly acidulated, otherwise a large proportion of the red colour may be removed during the process of washing away the yellow pigment. The tramping or kneading is continued at intervals for three or four days, the mass being allowed to get dry between the washings. To ascertain if all the yellow colour has been removed, a small quantity is thrown into a basin of clean water; if it does not impart yellow colour the dye stuff has been sufficiently washed. The pulpy mass is now squeezed between the hands into small, flat, round cakes, like biscuits; or it is sometimes, though less frequently, made into balls. These are known in the trade as "stripped safflower." When the cakes or balls have been carefully dried they are ready for the market. The introduction of aniline dyes has so much affected those of vegetable origin, that safflower has been almost driven out of the market, though it is said to be still used in the preparation of rouge.

Oil is the second important product of the safflower plant, which it yields to the extent of 25 per cent. of the husked seeds. The oil is obtained by expression. It is of a light yellow colour, and is much used for ordinary culinary purposes, as well as for lamps in India. It was said at one time to form an ingredient in the much advertised "Macassar Hair Oil." Though the two uses to which we have referred are the most important, the safflower plant has had a reputation as a medicinal plant. It was considered by the Sanskrit writers to have purgative properties, and the oil was recommended for external application in rheumatism and paralysis. Dymock says:—"In Bombay the seeds, under the name of *Kardayi*, are pressed along with ground nuts and sesamum, to form the sweet oil of the bazaars; they are also universally kept by the druggists for medicinal use." In Jamaica the dried flowers were formerly used internally for the cure of jaundice.

Among the rock roses, or species of *Cistus*, many will commend themselves for garden culture on account of their bright and free flowering habit, though the flowers are very fugacious. As a flowering shrub, however, for large gardens, *Cistus ladaniferus* has strong recommendations besides the plentiful supply of white flowers, the bright glaucous green of the leaves impart to it a freshness that is very persistent. The viscid, sticky nature of the stems and leaves at once indicate it as being one of the sources of labdanum or ladanum which once had a reputation amongst the Turks for keeping away plague. The curious manner in which this resinous substance is collected is worth noting. In Crete a heavy instrument, called a ladanisterion, is used. It is shaped somewhat like a huge rake with a long wooden handle, and in place of wooden teeth, long leather thongs, are fixed. The collector takes this instrument and brushes it about over the plants, which breaks the twigs and bruises the leaves; the resin exudes and sticks to the leather thongs from which it is scraped and afterwards moulded into cakes. In Cyprus a different form of collecting is adopted, namely, by turning out sheep to browse amongst the plants, the resin adhering to the fleece of the animals is afterwards scraped off and purified by fusion, and finally moulded into various sized lumps. Stimulant and expectorant properties are attributed to ladanum, and it was formerly used in this country in catarrh, dysentery, and other diseases, and as an ingredient in plasters. The bulk of the produce of Crete and Cyprus at the present day goes to Turkey, where it is used for fumigating and as a perfume.

Cistus ladaniferus

Another noble and attractive garden plant may be found in *Gentiana lutea*, one of the Alpine gentians, best known to pharmacists as yielding gentian root of trade. The plant has large, broadly ovate leaves tufted together, from which the large yellow flower spikes spring. It grows in any good garden soil, and in June and July forms a strikingly bright object in the garden.

CURIOSITIES OF MEDICATION—PAST AND PRESENT.

BY GRAHAM BOTT, F.L.S.

Curious as were the insect remedies which the present writer was privileged to refer to in a previous paper (*vide Pharmaceutical Journal*, **70**, 284), yet still more strange were the substances employed as remedial agents in the middle ages; not infrequently they were of a most disgusting and unwholesome nature. Mediæval medication, in almost every country, had not risen above the crudest remedies, and the pharmacy of that period had not emerged from the most primitive operations—although even then the chrysalis of pharmacy was struggling to free itself from the effete husk of superstition—which at the present day is swiftly assuming a more scientific basis than the practice of medicine itself, tending in various ways to the benefit of communities. Moreover, it may be safely said that the science of chemistry is in the main responsible for this rapid improvement. But, living as we do in an age of constant upward movements, the time to mentally live with our ancestors of the middle ages is consumed in the endeavour to keep pace with the present; hence we lose somewhat a clear conception of the great gulf which separates now and then. For it is only by comparison with the past that we can readily perceive the giant strides of progress. Certain peculiar substances, used as curative agents, are, even in this age, regular articles of commerce, though not so much employed among civilised nations as amongst those whom we are in the habit of regarding as less favoured in culture and customs. Nevertheless, it is a peculiar and extremely interesting fact that, one might say with truth, absolutely no substance, however obnoxious, has been left untried by those in pursuit of health. A few have survived through long ages, though, happily, not the more abominable remedies in which our forefathers were wont to pin their faith—probably, at any rate, in some instances, on account of their extreme nastiness. For, as is shown by the following extract from a medical work of about three centuries ago, disagreeable remedies were often resorted to for no other inherent virtue:—"Then we must presently use Medicine which by their Strong and noisome smell, recall the exorbitant and deserting Spirits to their proper stations, whether they are taken inwardly, or smelt to, or applied outwardly. And indeed *whatever stinks* is proper for this intention, whether it is naturally ill-scented or made so by Art; and, unless I am deceived, Spirits of Hart's horn, of human Blood, of Urine, and of Bones, and the like, take their chief virtues from the force of the Fire, in their preparation, contracting an ill Scented Empyreuma."

Most of us can readily recall the first occasion on which we became acquainted with spirit of hartshorn, and the unsatisfied and half incredulous feeling with which we received the information that it really was distilled from the horns of two or three species of stag. But on investigation, and when we became conversant with the first principles of chemistry regarding animal matter, we found that, when subjected to destructive distillation, it yields as the chief product ammonia. We then understood why, in old-time pharmacy, the "horns," or antlers of the hart were employed, and why the above-mentioned preparation survives to-day in name only as liquor volatilis cornu cervi. Calcined stags' "horns" were also officinal, and included in the old pharmacopœias, under the name "cornu cervi calcinatum," or "cornu ustum," and were highly esteemed medicinally, absorbent, astringent, and antacid properties being somewhat erroneously attributed to the preparation, as the proportion of calcium carbonate to other substances is exceedingly small. Hartshorn or stags' horn shavings were formerly, and are occasionally in the present day, employed for making hartshorn jelly. They are boiled with water, flavoured with the juice of the orange or lemon, and some wine and sugar added, the whole forming a highly nutritious jelly. The tusk of the elephant has been also laid under contribution for a similar purpose.

In the dark ages the belief was very prevalent that the horn of the unicorn possessed extraordinary medicinal virtues, though how that belief originated it would be extremely difficult to imagine, since the animal itself is fabulous. But it serves to show the credulity of the age, the widespread effects of, and the reliance placed upon mere report. Hence unicorn's horn (cornu monocerotis) was eagerly sought for, but needless to say was never discovered; yet several spurious horns were successfully substituted for that of the mythical animal. Therefore, it appears, even in those remote days, substitution was practised, but without producing that agitation of mind which seems necessary in our own times. The fictitious articles, supplied as fossil unicorn's horn, were the fossil bones of the elephant, rhinoceros, tiger, and the bones of other large animals, and which were termed in the materia medica of that time, "unicornu fossile" and "ebur fossile." They were esteemed for their cordial, astringent, and diaphoretic properties, and were considered valuable against epilepsy, besides being employed in malarial fevers. Further, the so-called "horn" of the narwhal or sea unicorn, which, of course, is really its tooth or tusk, was also a recognised remedy under the name "unicornu marinum," and formerly considered to possess numerous medicinal virtues. Considerable traffic is carried on in the present time in the bones of the tahr, the native name for the wild goat, *Capra jemlanica*, which frequents steep tree-covered slopes of the Himalayan range, and which bones are exported to India, being employed as an imaginary never-failing remedy for rheumatism. Again, the antlers of the altai wapiti, of the deer tribe, are exported, it is said, to China, realising a very high price, where they are much esteemed for medicinal purposes; while the horns of the Sumatran rhinoceros are imported by, and valued in, the same country as a supposed means of counteracting disease.

It is also interesting to note the extraordinary property attributed by Eastern nations to the horn of the rhinoceros. It was believed to have the peculiar virtue of sweating on the approach of poison, hence on account of that supposed quality—which if only true would have been invaluable in early times—the Emperors of the East had it fashioned into a drinking cup, considering that by its timely warning they might escape the inhuman design of their treacherous courtiers.

Amber, the "electron" of the ancients—the fossil resin of the Tertiary pine forests—which possesses the well-known property of attracting light bodies when rubbed, and from which is derived the word electricity, was formerly a therapeutic agent of considerable repute, but of doubtful value. Used in the form of powder, it was administered for hysteria, spitting of blood, catarrhs, and other excessive discharges; ground up with honey and rose oil it was regarded as a specific for deafness, and when mixed with Attic honey good for dimness of vision. Worn round the neck, it was supposed to cure ague, quinsies, and sore throats, until at length it became quite fashionable for people to wear amber necklaces, not as a personal adornment, but for the sake of the virtues ascribed to the substance. Recommended for headache, tincture of amber is still contained in the French Codex, Dutch, Swedish, and Portuguese Pharmacopœias, and is said to be prescribed by French, German, and Italian physicians. Pliny, the naturalist, about 2,000 years ago, mentioned amber, and even at that distant period was quite within the mark respecting its origin, for he regarded it as the fossil resin of some extinct species of coniferous trees. But, according to the myths of the poetical Greeks, amber was considered as the petrified tears shed by the sisters of Phaeton, who were transformed into poplar trees while lamenting their brother's death:—

> The sweet tears shed
> By fair Heliades, Apollo's daughters,
> When their rash brother down the welkin sped,
> Lashing his father's sun-team, and fell dead
> In Euxine waters.

Other poetical naturalists have ascribed its origin to the petrified tears of birds, thus:—

> Around thee shall glisten the loveliest amber
> That ever the sorrowing sea-bird has wept.

Another remedy frequently employed medicinally as an antacid and absorbent were crab's claws, "chelæ cancrorum" of the old pharmacopœias. They were the large claws obtained from the crustaceous animal the black-clawed crab, *Cancer pagurus*, which inhabits the rocky shores of England, and the flesh of which is esteemed by us as a delicacy. Consisting principally of calcium carbonate, the medicinal virtues of crab's claws can be readily understood, although, of course, now they have been replaced by other chemically manufactured substances. No reasonable explanation, however, can be advanced for the medicinal use of that other species of crab, *Pagurus bernhardus*, commonly termed Bernhard the hermit, hermit-crab, or the wrong heir, in allusion to the fact of its invariably appropriating a shell which it finds vacated. Nevertheless, by the credulous, the hermit crab was considered to be a sovereign remedy for rheumatism when simply rubbed onto the affected part.

Occasionally in the present period oil of bricks (oleum laterinum) is in request for medicinal use, and country people place some reliance on it as a cure for rheumatism. Brick-earth and bricks figured in the earlier materia medica, and methods given for the preparation of lateritious remedies. For instance, bricks were ordered to be carefully powdered and made into an ointment with lard, which was recommended as an application for shingles and skin diseases generally. Most of us are familiar with the domestic employment of the cobweb, which is at times requisitioned to arrest bleeding from small cuts, thus acting as a mechanical styptic. Spider's webs were also formerly administered internally for the cure of intermittent fevers. Further, the arachnidian weaver itself was held in high esteem as a therapeutic agent when employed as a charm. Thus it was considered exceedingly efficacious as an antipyretic when enclosed in the shell of a filbert and suspended from the neck, or merely allowed to crawl upon the wrist or temples, whilst

> The Magus in the interim mumbled o'er
> Vile terms of art to some infernal power,
> And drew mysterious circles on the floor.

The peasants of Bas-Poitu in the present day make use of some curious remedies, as Dr. Tiffaud pointed out some time ago—remedies which rank with the medication of the middle ages, such as urine, dung, worms, bones, and other vile substances. He tells us that the Bas-Poitu peasants make children who are afflicted with worms eat the first parasite that comes away from them. This they regard as a certain method of destroying the rest. And, with reference to the therapeutic use of urine, the present writer can testify to its present-day employment as an application to sores—instances which have come under his direct observation. Diuretics were very much in vogue in former times, as their votaries considered that they possessed in a high degree the power of counteracting or expelling poisons or infection by increasing the excretion of urine. However true that may be—and theoretically it appears to be reasonable—yet most of the remedies selected seem to us to be absurd. Thus the common earthworm (*Lumbricus terrestris*), when dried and pulverised, was given internally with the above-mentioned intention. Moreover, in the present time, in some parts of France, a cloth bag is filled with earthworms by the rustics and tied round the neck of children, in order to cure a sore throat. Also, the adda, or common skink, frequently termed the medicinal skink (*Scincus officinalis*), was exhibited as a diuretic, and is thought by Eastern physicians to be most useful in certain cutaneous diseases. Remarkable for the glossy surface of its body, which coruscates with wondrous brilliancy, this amphibious animal belongs to the lizard family, inhabiting Asia and Africa, and which is also captured about the Nile. In this case, however, it was necessary to particularly select the flesh of the belly for medicinal purposes, which included aphrodisiac properties, besides being considered of service in leprosy and elephantiasis. Cod-liver oil is still justly esteemed for the treatment of disease, but that obtained from the liver of the pike fish (*Esox lucius*), which was formerly in repute, has fallen into disuse. Pike's liver oil (*Oleum lucii piscis*) was official in some national medicine books, and applied externally by physicians to effect absorption of opacities and specks of the cornea; while Sir Charles Hastings, in modern times, maintained the efficacy of, and published a treatise on, the serpent as a cure for consumption, probably on account of its being usually emblematical of health, and which arises from the fact of its annually shedding its skin, thus appearing to be rejuvenated.

The great Sydenham, although a very able and astute physician, and far in advance of his day, was occasionally the dupe of his own credulity, or it may have been that he pandered somewhat to the credulity of the age in which he lived. For, amongst the many undoubtedly curious remedies which he prescribed, we find frog's spawn recommended as a cure for quinsy. He also pursued the singular method of "emitting Balsamick Spirits," as he quaintly terms it, into the body of aged patients by ordering young people to sleep with them. This practice is of very ancient origin, and, as will be remembered, is mentioned in the Bible. Sydenham has been stigmatised as a theorist, yet he generally had the courage of his opinions, and did not shrink from putting them into practical effect; while physicians of a much later date were not oblivious to the beneficial effects of mental therapeutics, and did not hesitate to occasionally urge that mode of treatment. Thus Dr. Buchanan says: "A roll of brimstone held in the hand is frequently used as a remedy for cramps. Though this seems to owe its effects chiefly to imagination, yet, as it sometimes succeeds, it merits a trial." And again, which is still more curious: "Some persons afflicted with cramps pretend to reap great benefit from small bundles of rosemary tied all night about their feet, ankles, and knees." The above has its parallel to-day in the practice of wearing a common metal finger ring for the cure of rheumatism, credulous individuals having assured the writer of its power in that respect. *Tempora mutantur, nos et mutamur in illis*, but we only alter our methods, credulity still prevails in no little degree, credulity which is, indeed, a disorder of the mind infinitely more difficult to eradicate than disease itself. In China the nests of certain species of swallow have been utilised in medicine. They are cemented together with gelatinous matter and were, and probably are, valued on account of their supposed stimulating properties. These nests have also been used as a remedy for epilepsy.

Arabian physicians of old were without doubt exceedingly skilled practitioners, yet could credulity rise to higher heights than that of those physicians who originated the employment of Egyptian mummy as a remedy against disease? That celebrated Arabian, Avicenna, often styled the Prince of Physicians, and who flourished during the end of the tenth and beginning of the eleventh century, became enthusiastic over the remedial virtues of Egyptian mummy, and emphatically declared it to be his opinion that mummy stood unrivalled in healing wounds and for bruises. He also employed it for fractures, concussions, palsy, hemicrania, giddiness, epilepsy, hæmoptysis, diseases of the chest and throat, weakness of the stomach, liver, spleen, palpitation of the heart, and, curiously enough, he asserted its power to expel poisons. The ailments which Egyptian mummy would not cure or relieve were scarcely known, and so at a later period, and in consequence of its having received the approval of so distinguished a man, an unprecedented demand for mummy—that is, the Egyptian article—arose in Europe, physicians of all nations vying with each other in praising its curative virtues, until we are told it became "a perfect rage." Thus, as a natural consequence, the price desired for the genuine mummy was vastly augmented—when it appears that eventually the supply did not equal the demand. That circumstance—and tempted no doubt by the high price obtained—was the principal factor in deciding the Jews and others to embalm all the dead bodies available, and in their eagerness for accumulating wealth, scarcely scrupled to plunder the graves. Those bodies were prepared by filling the cavities with asphaltum, binding them up after the manner of ancient mummies, and subsequent exposure to the sun's heat to dry and harden rendered them ready for the market. In that way immense sums were rapidly realised, until ultimately the Christian slave of a Jew at Damietta disclosed the secret to the Pacha. Hence the hypothetical therapeutic value of mummy faded as completely as its former use was excessive. Garth assists one's imagination of the apothecaries' pharmacy of the middle ages when he says:—

His shop the gazing vulgar's eyes employ,
With foreign trinkets and domestic toys.
Here mummies lay most reverendly stale,
And there the tortoise hung her coat of mail;
Not far from some hung shark's devouring head
The flying fish their finny pinions spread;
Aloft in rows large poppy-heads were strung,
And near a scaly alligator hung;
In this place drugs in musty heaps decayed;
In that dry'd bladders and drawn teeth were laid.

. . . . . .

The sage, in velvet chair, here lolls at ease,
To promise future health for present fees.

Among the African negroes of to-day the peculiar practice of eating human flesh as a medicine is said to be prevalent. They also consider that when obtained from an enemy the mere possession of it creates the extraordinary power of influencing their deities in their favour.

About two centuries ago a French physician, named Tissot, published two remarkable cases of recovery from drowning of a man and a girl, by somewhat curious methods. The man had been under water for over six hours, while the girl was removed therefrom in a bloated and pitiable condition, and both were seemingly dead. Nevertheless, the naked body of the girl was laid upon hot ashes, she being likewise buried under the same. Half-an-hour afterwards signs of recovery manifested themselves, and, on administering a little brandy and keeping her buried for eight hours longer she completely recovered. The man was simply restored to life by placing him under a dunghill. Of the above treatment no doubt the rationale will be recognised. But reason certainly did not dictate the internal administration of the dung of dogs, yet, incredible as it may seem, the alvine evacuations of both the dog and the mouse figured in the materia medica of that superstition-saturated age—the middle era. That of mice was curiously termed "album nigrum," which is also mentioned by Pliny under the name "muscerda." It was employed as a purgative, and given as a remedy for epilepsy, whilst the dung of dogs, termed "album græcum," or "album canis"—on account of its becoming white and chalk-like on exposure to the atmosphere—was used externally for checking secretion and dissipating morbid matter, and when incorporated with honey applied to the inside of the throat in suppurative inflammation of the tonsils. It is in connection with the above-mentioned that one marvels at the incomparable delusions which prevailed in former times, while at the same instant one is impressed with the sharp line of demarcation which divides scientific from pre-scientific methods of treating disease.

Obviously in the foregoing the fringe alone of an exceedingly fascinating subject has been touched upon. Of the stone said by Pliny to be present in the nest of the eagle, and consequently termed by the ancients eagle-stone, of the slime of the Nile, of inunction with the fat of crocodiles, of lead bullets, of charms, amulets and incantations, remedies which were in vogue hundreds of years before the Christian era, and which were employed, with variations, up to and during the fifteenth and sixteenth centuries of the present era—nothing or little has been said. It was, however, about this time when tinctures, essences and extracts first gave way to loathsome concoctions, and soon afterwards chemical remedies were introduced. Yet what has been written shows—and it strongly excites our amazement—that nations with centuries of civilisation to their credit were imbued in a high degree with superstition and credulity; erroneous reasonings which we might expect to prevail amongst primogenous nations where instinct evidently predominates judgment. Perhaps the writer may be allowed, not altogether irrelevantly, to conclude by citing an amusing instance of primitive dupeability mentioned by Prof. Brinton.* He tells us that the Vitian Islanders believe that each cocoanut possesses its own spirit, and that when a number of them assemble at convivial meetings, the noise they make, in the exuberance of their spirits, by jostling together, keeps the natives awake. Finally—and it is scarcely straining the imagination to make the assertion—the history of the world might almost be traced from the evolution of pharmacy and medicine. It is quite certain, however, that both have been intimately associated with and have influenced history in the most inconceivable directions. Substances used as remedial agents have been the means of stimulating the desire for travel, of creating lucrative avenues of commerce, and of bringing together nations hitherto unknown, thus disseminating knowledge and facilitating interchange of ideas upon an immense variety of subjects. Hence it may be justly said that they have been intense and energetic elements in the history of mankind.

Sulphuric Acid for Chicken Cholera.

Some poultry keepers are aware that the occasional addition of a little sulphuric acid to the drinking water supplied to their fowls has a beneficial and tonic effect, although the fact does not appear to be generally known. A recent outbreak of chicken cholera in Bulgaria has enabled P. Bitscheff to demonstrate that it is a valuable remedy in that fatal disease, at the same rendering immune the healthy fowls exposed to infection. The dose given is 3 parts of sulphuric acid in 1,000 of water. It is stated that this acid water should not be given for more than three days at a time, since it is said to cause the laying of "soft eggs," and to give rise to diarrhœa. [Instead of sulphuric acid the use of a solution of ferrous sulphate, 1 drachm to 40 fl. ounces, has been found beneficial. When either this or the acid be used, the drinking vessel employed should be of earthenware and not of "galvanised" iron, as often used.—Ed. *P. J.*]—*L'Union Pharm.*, **44,** 408.

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* 'Relig. of Primitive Peoples.'

THE MAJOR EXAMINATION: ITS PAST AND ITS FUTURE.*

BY RICHARD A. ROBINSON, JUN.

Statistics.

Major Examination.

	London.		Edinburgh.	
Year.	Candidates.	Passed.	Candidates.	Passed.
1850	(?)	19	—	—
1860	(?)	43	(?)	3
1870	75	57	6	6
1880	116	53	9	5
1890	92	56	13	8
1891	132	72	15	13
1892	126	55	14	8
1893	140	62	12	7
1894	136	68	11	6
1895	130	60	16	8
1896	111	55	19	6
1897	96	51	10	1
1898	111	60	10	4
1899	100	49	3	1
1900	96	42	5	2
1901	96	33	8	4
1902	82	36	13	9
1903	64	41	8	3

There are two points in the table to which I desire to call your attention. These are (1) the very small number of candidates in Edinburgh, (2) the general diminution in the last ten years.

With regard to the

Examinations in Scotland,

I find that many of the candidates who have passed the Edinburgh Major in recent years gave addresses South of the Tweed. This seems to afford good ground for the suggestion recently made to the Council that the examination in Scotland, at any rate, might be held less frequently than at present. It has, indeed, been suggested that there is no longer any necessity at all for a Major Examination in Edinburgh. However that may be, it is manifestly a waste of power for several examiners in Scotland to spend time on one or two candidates only, whose railway fares to London and expenses would cost less than the examiners' fees in Edinburgh. It does, of course, happen, but with comparative infrequency, that Scottish candidates come to London for the Major already. In 1899, only three candidates altogether presented themselves for the Major in Edinburgh—one in January, one in July, and one in October. With regard to the practice of proceeding from England to Edinburgh for examination, I notice that at the July "Minor" 35 per cent. of the successful candidates in Edinburgh gave addresses in England and Wales. Presumably there is nothing unconstitutional in the practice, but it is noteworthy that Section 9 of the Pharmacy Act, 1852, provides that an examination may be held in Scotland "of such students, apprentices, or assistants *in Scotland* as may desire to be examined there."

With the general decrease in

The Number of Candidates

I must deal more fully. It is to be accounted for partly, I think, by the fact that the syllabus is not in as close relationship with practical pharmacy as could be wished, but principally by the feeling that something more substantial than a title, something better "worth while" than exemption from jury-service, something more useful commercially than the kind of scientific knowledge now acquired for the examination, should result from the time and trouble and money devoted to the acquirement of the diploma. That the privileges of the pharmaceutical chemist are not more than is actually the case, and that the "game" is not considered to be "worth the candle," are due for the most part to the march of events outside the control of the Pharmaceutical Society or any other body. But that does not imply, as the Council and the Boards of Examiners have recognised, and as pharmaceutical chemists generally would do well to recognise, that nothing can be done. I think more might be done by pharmacists themselves to educate the public in the meaning of the title of "pharmaceutical chemist." In 1870, when an agitation was on foot to make Major men eligible for the title of "Fellow of the Pharmaceutical Society," numerous letters were written about the folly or immorality of forcing one's qualifications down the throat of the public. Frankly, I believe in the practice. M.P.S. has ceased to be a distinctive title, while the general public has no conception of the meaning of the title pharmaceutical chemist, and not infrequently mistakes the framed diploma, which some pharmacists exhibit, as something vaguely connected with the Royal and Antediluvian Order of Buffaloes. This granted, I think you will agree that the public must be educated. The unqualified man behind the counter at the drug-store, limited, down the street will never teach the public what your Major diploma means; the public will never intuitively guess the meaning of it, and the only thing that remains is to instruct the public yourself. I should be glad to hear your views on the question of the Fellowship for Major men. Without expressing a definite opinion, I must say that I do not see anything ridiculous in the suggestion. I think, too, that the owners of good dispensing businesses would do well, both for themselves and for the calling, if they were to offer a higher salary to a Major man than to a Minor man. I have no sympathy with the belief—somewhat common, I am afraid, among employers—that the Major man is a worse assistant than his Minor colleague. Six months longer at school may teach an assistant several little scientific devices which ought to be worth money in a pharmacy, and surely cannot make him any the worse as a business man!

Suggestions for Reform.

I have made one or two suggestions as to steps which might be taken by unofficial individuals to encourage more candidates to enter for the examination, whether or not changes in the examination itself are introduced. But, as the present system of examination has already been pronounced by the Boards of Examiners to be, in some respects, unsatisfactory, it becomes necessary to consider some of the suggestions that have been made for its reform. Although it is undoubtedly a fact that a diploma granted to the few carries with it more honour than one which is obtained by the many, I think all who have at heart the interests of higher pharmaceutical education will approve of any changes which have the effect of inducing more candidates to continue their studies after passing the qualifying examination. I think, therefore, that, if I briefly put before you some of the proposals, official and unofficial, which have been suggested as likely to achieve that end, you will be in a position to form your own opinion on the matter.

The official proposal of the Boards of Examiners is to equalise the subjects, to bring them into closer relation with pharmacy, to hold the examination twice a year only, and, most important, to grant a diploma after a satisfactory

Examination in Two Subjects,

of which chemistry or materia medica must be one. It would presumably follow that in the two subjects taken a wider or more intimate knowledge would be demanded than is now necessary. I shall be glad to hear whether, in your opinion, this would result in an increased number of candidates, and what would be the general effect on pharmacy. Exception has been taken to the proposal on the ground that an advanced knowledge of botany or physics cannot do the pharmacist any good. That is as it may be, but in an age when the laity thinks so much of a University degree, it is well to remember that anything which brings a degree more closely within the reach of pharmacists is likely to tend to increased recognition by the public of the pharmacist as a professional man. Unofficial suggestions by teachers of pharmacy or by private individuals in the correspondence columns of the Journal include, *inter alia*, examination in a number of subjects which are at present in the nature of "side-lines." Such are bacteriology, Röntgen-ray work, milk, water, and urine analysis. Practically all seem to be in favour of the change to two subjects, and very few seem to think that it would in any way lower the status of the pharmaceutical chemist. Mr. H. Wootton suggests that if a candidate passed in one subject it should be placed to his credit, and he should be allowed to enter for the other subject at another sitting. He asks, also, that practical physics should become a subject of examination. Doubtless, in the event of a revision on the lines suggested, practical work in physics would be included. Mr. R. C. Cowley suggests an entire re-arrangement of the Major syllabus, with the omission of botany, and the inclusion of advanced pharmacy, bacteriology, physiological chemistry, and water and milk analysis. Mr. J. Grier thinks that there is more practical pharmacy and materia medica wanted in the Major, botany and chemistry being subsidiary. Optics, photography, the analysis of foods, and the like, should, he thinks, be left to the technical schools. So far, I am inclined to agree with him. But, if I may venture to express a personal opinion, I should like to see pharmacists pay increased attention to

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* Read before the Chemists' Assistants' Association, London, on Thursday, November 5, 1903, and concluded from page 706.

BACTERIOLOGY AND HISTOLOGY.

These allied sciences will undoubtedly both be put in the future to great practical use. The cult of bacteriology is no new thing, but up to now pharmacists have done next to nothing to secure that any portion of the bacteriological work required by medical men shall be placed in their hands. In spite of that, in my opinion, it is not too late, even now, to ensure that this highly professional science—which may be regarded, like pharmacy itself, as a branch of medical work—shall become recognised as coming within the province of the educated pharmacist. The histological examination of drugs is, as we know, quite a young science, but it is increasingly vigorous and successful. The histological examination of seeds and other parts of plants in general horticulture is hardly yet born, but where materia medica leads general botany may probably follow. I think there can be no question that in the future there will be much work for the histological analyst; not quite so much, perhaps, as for the analytical chemist, but certainly sufficient to justify pharmacists in endeavouring to qualify themselves for the work. I confidently expect that in twenty years' time bacteriological and histological analysis will be a recognised profession, with plenty of work and pay, and I see no reason why any new society should be founded in order to undertake the training and examination of suitable persons for the work. If physics becomes an optional subject, the syllabus might well be extended in the direction of medical electricity. This is a branch of medical work which, like bacteriology, is growing in favour; and doubtless medical men will, in the future, expect chemists to supply them with what they require for the electrical treatment of disease. In the same way, although it cannot now be expected that the Pharmaceutical Society could compete with the Institute of Chemistry in the provision for examination in the chemical analysis of foods, that subject might, with advantage, be added to the practical chemistry of the Major, in the event of the proposals for revision being adopted. It may be said that these suggestions would not bring the examination into closer relationship with pharmacy. Then I would suggest that advanced pharmacy, including parts of the present syllabus in materia medica and chemistry, might form the only compulsory subject, and that candidates should be allowed, in addition, to take up one or two optional subjects from among those which I have mentioned. With those who advocate photography or optics I personally do not agree; if ever there was a time, which I doubt, when it was advisable for chemists to cultivate these side-lines, the time, in my personal opinion, is past.

I am afraid, gentlemen, that I have dealt with this subject at too great length. I would conclude by saying that my object in bringing the matter before you is not to express opinions of my own, but rather to give the members of the Chemists' Assistants' Association the opportunity of expressing their views on a subject which closely affects their interests. It is, indeed, a subject which mainly concerns the younger men, and I think I may express the conviction that the Council of the Pharmaceutical Society will give thoughtful consideration to any views which the chemists' assistants of London may put forward.

NOTES ON THE ASH-YIELD OF CRUDE DRUGS AND COMPOUNDS.*

BY W. CHATTAWAY AND C. G. MOOR.

Cimicifuga.—Umney suggests 10 per cent., which seems a little higher than necessary. A figure recently obtained by us was 5·2, and four samples examined by Moor and Priest showed from 5·6 to 7·9 per cent. Barclay records 6·2 per cent. We consider that 8 per cent. would be a suitable standard.

Cinnamomi Cortex.—In Moor and Priest's paper 6 per cent. is suggested as a limit. Samples of low quality containing sweepings may exceed this, and should be condemned.

Cocæ Folia.—Umney suggests 8 per cent. It may be as low as 5 per cent., which was the figure obtained by us on a sample of good leaves.

Coccus.—Cochinea of the "silver grain" variety is often grossly adulterated with French chalk (see also Kebler, *P.J.*, 554, i., 1902), and the dark cochineal has been found adulterated with oxide of iron. The British Pharmacopœia limit of 6 per cent. is satisfactory, and, whatever purpose cochineal is used for, it ought to be free from intentional weighting. Merson (*P.J.*, March 24, 1900) records a large number of ash determinations in cochineal, 3 showing over 40 per cent., 2 over 30 per cent., 5 over 20 per cent., and 3 over 10 per cent.

Colchici Cormus.—Umney suggests 3 per cent., which agrees with Moor and Priest and Barclay's figures.

Colchici Semina.—Five per cent. is a satisfactory limit.

Colocynthidis Pulpa.—The British Pharmacopœia requires the pulp, when dried at 100° C. (it is very hygroscopic), to yield not less than 9 per cent. of ash. There are, however, samples which yield less than this, even when quite free from seeds. This was shown by Moor and Priest's figures (*P. J.*, July, 1900); Greenish (*P. J.* [4], **12**, 398) also gives a figure on a genuine sample less than the required 9 per cent. J. C. Umney suggests raising the standard to 10 per cent. We are rather in favour of lowering it to 8 per cent., if all genuine colocynths ought to be included. The microscopical description published by Greenish should certainly be added.

Conii Folia.—Umney and Barclay both give 15 per cent. of ash. Two samples examined by us gave 19·0 and 18·6 per cent. of ash.

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* Read before the Society of Public Analysts, and reprinted from the *Analyst*, for July, 1903, and concluded from page 456.

Conii Fructus.—Umney suggests 7 per cent. One examined by us gave 5·3 per cent.

Coriandri Fructus.—Most observers agree that 6·0 per cent. would be fair.

Crocus.—The British Pharmacopœia limit is 7 per cent., which is apparently founded on Barclay's work (*P. J.*, **24**, 692). All genuine specimens appear to fall within this limit.

From time to time very gross adulterations of saffron with mineral matters, such as barium sulphate, are found. "Alicante saffron" is more often adulterated than not. It would be well if the British Pharmacopœia tests were supplemented by a colour test with sulphuric acid.

Cubebæ Fructus.—Umney suggests per cent. We would suggest 9 per cent. Barclay's figures are 6·4 and 7·3 per cent.

Cuspariæ Cortex.—We would place it at 8 per cent. Barclay gives 8·0 per cent.

Cusso.—Umney suggests 7 per cent. We have found 5 per cent.

Digitalis Folia.—Umney suggests 10 per cent.; Barclay records finding 11·2; two samples examined by Priest gave 8·1 and 10·6 per cent.; Hockauf found 7 to 10 per cent.

Elaterium.—A sample examined by Priest gave 7·9 per cent., and one by ourselves 3·7 per cent., so that Umney's figure of 14 appears somewhat high.

Ergot.—The ash of ergot is about 4 per cent.

Eucalypti Gummi.—We would suggest 1·0 per cent.

Euonymi Cortex.—Ten per cent. would appear to be correct.

Felix Mas.—This, when freed from adherent earth, gives about 4 per cent. of ash. As it is only used to make the liquid extract, its ash-figure is of no importance.

Fœniculi Fructus.—The ash varies from 7 to 13 per cent. (Moor, "Standards").

Galbanum.—Umney suggests 8 per cent., with which we agree.

Galla.—Umney suggests 3 per cent.; Moor and Priest found 2·3 and 1·3 per cent.; we have found one yielding 4 per cent., and another 4·2 per cent.

Gelsemii Radix.—Umney suggests 3 per cent., which confirms our figures.

Gentianæ Radix.—We suggest 4 per cent.

Glycyrrhizæ Radix.—Umney gives 4 per cent., with which we agree.

Granati Cortex.—Moor ("Standards") published four figures of 14·3, 13·1, 13·7, and 15·5. A figure recently obtained by us is 13·2, so that Umney's suggested standard of 15 per cent. is satisfactory. The low figure 4·3 recorded by Moor and Priest probably referred to *Cortex granati fructus*.

Guaiaci Resina.—Umney suggests 3 per cent., which would exclude some of the lower qualities. A standard to exclude excessive woody matter is needed.

Hæmatoxyli Lignum.—The ash is about 3 per cent.

Hamamelidis Cortex.—The ash is 4 to 5 per cent.

Hamamelidis Folia.—The ash should not exceed 9 per cent.

Hemidesmi Radix.—The ash should not exceed 9 per cent.

Hydrastis Rhizoma.—When cleaned the ash is about 8 per cent. It should not exceed 12 per cent. A sample recently examined by us gave 7·4 per cent.

Hyoscyami Folia.—The ash varies from 8·5 to 12 per cent. Barclay records two very high figures, 21·9 and 14·0 per cent. Umney suggests 12 per cent. as a standard.

Ipecacuanhæ Radix.—When quite clean the ash is about 2·5 to 3 per cent. A limit of 5 per cent. was suggested by Moor and Priest (*v.* B. P., 1900). This was confirmed by Umney (November, 1902), and by W. H. Lenton (*P. J.*, i., 558, 1902).

Jaborandi Folia.—We suggest 9 per cent. as a limit. Barclay gives three figures of 4 to 5 per cent.

Jalap.—The ash is about 6 per cent., but is of no consequence, as a resin standard is required by the British Pharmacopœia.

Kino.—Umney suggests 2 per cent., which is satisfactory.

Krameriæ Radix.—The ash is usually from 1·5 to 2 per cent.

Limonis Cortex.—Should not exceed 6 per cent.

Linum.—The British Pharmacopœia limit is 5 per cent., and is satisfactory.

Lobelia.—Umney suggests 12 per cent. of ash as a standard. Barclay's figures are much lower.

Lupulinum.—The British Pharmacopœia limit is 12 per cent. Umney would raise it to 14 per cent. Seven out of eight samples examined by Squire ('Companion') gave over 20 per cent.

Lupulus.—The ash of hops is about 8 per cent., and should not exceed 10 per cent. Three samples recently examined by us gave 8·3, 7·8, and 7·2 per cent. of ash.

Mezerei Cortex.—Umney gives 4 per cent. as a limit, with which we agree.

Moschus.—The British Pharmacopœia limit is 8 per cent., and should be maintained.

Myristica.—The ash of nutmegs is about 3 per cent., unless they have been whitewashed, when it may be 5 per cent.

Myrrha.—C. G. Moor ("Standards") suggested 6 per cent. as a limit. This would exclude a considerable number of commercial samples. G. F. Merson (*P.J.*, 44, 1900) suggests 5 per cent. as a limit of ash; Dietrich (*C. and D.*, 131, ii., 1898) suggests 10 per cent.

Nux Vomica.—The ash is about 1 to 2 per cent.

Papaveris Capsulæ.—The ash is 9 to 11 per cent.

Pareira Brava.—The ash is from 3 to 5 per cent. An ash of stem by Moor and Priest was 8 per cent., and two samples o Bahia pareira yielded less than 2 per cent. A sample of genuine pareira examined by us showed 4·3 per cent.

Physostigmatis Semina.—The ash is from 3 to 4 per cent.

Pimento.—Moor ("Standards") suggested 5 per cent., which is confirmed by Umney.

Piper Album.—The ash varies from 1 to 3 per cent.

Piper Nigrum.—The ash varies from 4 to 7 per cent.

Pix Burgundica.—Umney suggests 1 per cent. as a limit.

Podophylli Rhizoma.—The ash is about 3 per cent.

Pruni Virginianæ.—The ash is from 4 to 6 per cent.

Pterocarpi Lignum.—The ash is about 2 per cent. Umney suggests 1 per cent.; Moor and Priest record 1·7 per cent.

Pyrethri Radix.—The ash is about 4 to 6 per cent., but commercial samples (powdered) have been found showing 18 per cent. A genuine sample recently examined by us yielded 3·6 per cent.

Quassiæ Lignum.—The ash is from 3 to 4 per cent.

Quillaiæ Cortex.—Umney suggests 12 per cent. We have found 14 per cent., and another sample recently examined yielded 11 per cent.

Rhei Radix.—Umney suggests 12 per cent. as a limit. This is correct for most specimens, but some rhubarbs yield an ash up to 28 to 30 per cent., most of which is due to calcium salts. Two samples recently examined yielded 28·7 and 29·8 per cent.

Rhœados Petala.—The ash should not exceed 16 per cent. (Umney). Priest examined a sample yielding 20 per cent.

Rosæ Gallicæ Petala.—The ash is about 3 per cent. A sample recently examined showed 2·8 per cent.

Saccharum Lactis.—The British Pharmacopœia gives a limit of 0·25 per cent. It may be lower with advantage.

Sambuci Flores.—The ash is from 9 to 10 per cent.

Sarsæ Radix.—Umney gives 8 per cent. as a limit, which is satisfactory.

Sassafras Radix.—The ash is about 1 per cent. A sample recently examined showed 0·58 per cent.

Scammoniæ Radix.—The ash is about 10 to 12 per cent.

Scilla.—Umney suggests an ash-limit of 4 per cent. which is satisfactory. The limit of water should be fixed at 20 per cent.

Scoparii Cacumina.—The ash is 3 to 4 per cent.

Senegæ Radix.—The true ash is about 4 per cent. Moor and Priest record a commercial specimen of powdered root giving 20 per cent.

Senna.—The figures recorded by Moor and Priest varied from 5·6 to 10·5 per cent. H. G. Greenish (*Pharm. Journ.* [4], **12**, 397) determined the ash in a number of commercial sennas, and recommends a limit of 14 per cent., which should be almost entirely soluble in hydrochloric acid.

Serpentariæ Rhizoma.—Moor ("Standards") suggests 10 per cent. Umney confirms this. Cleaned specimens yield about 8 per cent., but two commercial powdered specimens were found by Moor and Priest giving 18 per cent., and even 30 per cent. of ash.

Sinapis.—The ash of mustard should be about 5 per cent.

Staphisagriæ Semina.—When clean, these yield about 14 per cent. A commercial sample containing dirt, which gave 26 per cent. of ash, was recorded by Moor and Priest.

Stramonii Folia.—The ash is about 12 per cent. in powder; it should not exceed Umney's limit of 15 per cent. A sample recently examined by us gave 11·0 per cent.

Stramonii Semina.—The ash is 3 to 4 per cent.

Strophanthi Semina.—The ash is about 3 to 5 per cent. A sample recently examined showed 4·7 per cent.

Sumbul Radix.—Umney's limit of 6 per cent. is satisfactory.

Uvæ Ursi Folia.—The ash is 3 to 4 per cent.

Valerianæ Rhizoma.—Moor suggests 9 per cent., Umney 10 per cent. Commercial samples often contain double, or even more. Barclay records a ground sample showing 17 per cent.; at least half of this must have been mineral matter. Two samples of root of good quality but insufficiently cleaned yielded us 11·2 and 16·0 per cent.

Zingiber.—The average ash is about 5 per cent. Coated or limewashed samples may sometimes give a little more. The amount of ash soluble in water is the chief criterion of genuineness, and this should never be less than 1·5 per cent.

Drug.	Moor and Priest.	J. C. Umney.	J. Barclay.	Chattaway and Moor.
Acaciæ gum	British Pharmacopœia limit, 4·0; all observers agree with this.			
Aconiti rad.	4·7, 3·5, 3·8, 8·6, 5·0	6·0	2·0 to 4·5, P.* 7·6	4·5 to 6·0
Aloes	2·6, 2·7, 1·6, 1·7, 4·1, 2·6	3·	1·7, 1·2, 2·1, 0·8, P. 2·6, 2·1, 1·5	1·0 to 4·0
Ammoniacum	2·3, 2·0, 1·6, 2·1, 5·6, 15·4, 2·3, 1·5	7·5	2·0	5·0
Anethi fruct.	6·2, 7·5	8 0	7·7	6·0 to 7·0
Anisi fruct.	4·9, 3·6, P. 11·4, 11·36	8·0	7·7, P. 8·3, 10·8	10 0
Anthemidis flor.	4·3	6·0	5·7, 5·8, 5·5, 5·5, P. 6·3	6·0
Araroba	9·8, 5·3	7·5	2·5	7·5
Arnicæ rad.	9·4, 8·9, 6·2, 33·7, 31·7, 15·5, 12·5, 12·1, 18·3	10·0	7·1	10·0
Asafœtida	figures vary from 2 to 60	20·0	—	20·0
Aurantii cort. sicc.	6·3, 6·5, 5·6, 6·2	7·0	5 2, 4·5, 6·1	7·0
Balsam. Peru	0·2	—	—	1·0
Balsam. Tolu	0·65	—	0·4, 0·34, 0 4, 0·39	1·0
Belladon. rad.	6·4, 8·1, 9·2, 7·2, 6·1, 7·3	7·0	9·3, P. 5·3	9·0
Benzoin.	0·5, 0·8, 1·0, 0·9, 2·5, 0·28, 0·82	2·0	0·9	2·0
Buchu fol.	4·8, 4·4	5·0	4·7, 4·6	5·0
Calumbæ rad.	5·1, 5·7, 7·4, 7·8, P. 11·8, 10·3	6·0	4·7, P. 7·0	8·0
Cambogia	0·84, 0·75	3·0	0·4, P. 1·8	2·0
Cannabis Indica	13·8, 12·7	15·0	15·0, P. 14·9	15·0
Cantharides	7·4, 6·0, 10·0	7·0	5·1, P. 7·6	7·0
Capsici fruct.	4·0 to 7·5	6·0	5·4, 6·1	
Cardamomi sem.	4·5, 5·7, 3·7, 5·1, 5·1, 3·7, 3·3	6·0	7·5, 3·5, 3·7	6·0
Carui fruct.	5·5, 7·5	8·0	6·2, 5·7, 5·5, P. 6·7, 6·2	8·0
Caryophyllum	5·4, 6·1, 5·2, 6·1, 6·0, 5·9, 5·2	6·0	4·6, 5·4, 6·0, P. 4·7	7·0
Cascara sagrada	4·6, 3·9, 7·0, 5·2	5·0	5·5, 6·1	7·0
Cascarilla cort.	8·8, 7·5, P. 10·7	10·0	8·3	10·0
Catechu	3·6, 4·0, 4·4	5·0	3·4, P. 5·3	5·0
Chiretta	3·5, 3·0	6·0	4·0, P. 3·1	4·0 to 6·0
Cimicifugæ rhiz.	7·1, 5·7, 7·0, 5·6	10·0	6·2	8·0
Cinchona	4·0, 13·0 (contained mineral matter)	4·0	1·4, P. 5·2	5·0
Cinnamon	4·1, 4·8, 5·9, 4·6, 5·5, P. 8·2	6·0	4·9, 4·2	6·0
Cocæ fol.	6 3, 8·0, 7·2, 6·8	8·0	4·0, 8·1	8·0
Coccus cacti	8·2, 5·2, 7·8, 30·8, 31·7	8·0	3·4, P. 9·5	6·0
Colchici cormus	2·4, 2·2, 2·2	3·0	1·8, P. 2·5	3·0
Colchici sem	5·1, 2·6	5·0	4·0, 5·2	6·0
Colocynth. pulp.	7·3, 7·2, 8·6, 10·1, 10·5, 9·2, 8·2, 12·1	10·0	12·0, 10·1, 11·4, 12·4, 11·2, 11·7, 11·7	9·0
Conii fol.	—	15·0	15·1	20 0
Conii fruct.	—	7·0	5·5	
Coriandri fruct.	5·8	6·0	4·1, 4·9	6·0
Crocus	4·8, 4·7, 5·0, 4·9.	7·0	—	7·0
Cubebæ fruct.	7·3, 5·3, pulv. 9·8	7·0	6·4, P. 7·3	8·0
Cuspariæ cort.	6·7, 6·2	9·0	8·0	8·0
Cusso	4·7	7·0	9·4	—
Digitalis fol.	8·1, P. 10·6	10·0	11·2, P. 9·4	10·0
Elaterium	7·9	14·0	—	—
Ergot	3·5, 3·5, 3·7, 5·7, P. 5·7	6·0	3·2, 2·8, 2·9, 3·1, 3·7, P. 3·2, 4·1, 2·7, 4·3, 3·1	6·0
Eucalypti gum.	0·62	0·5	0·2	1·0
Euonymi cort.	9·6	10·0	8·9	10·0
Filix Mas	4·9, 6·2	5·0	3·3	—
Fœniculi fruct.	12·1, 8·7, 9·1	10·0	8·5, P. 10·8	12·0
Galbanum	6·6, 7·2	8·0	4·4	8·0
Galla	2·3, 1·3	3·0	1·76, P. 1·75	5·0
Gelsemii rad.	2·1, 2·3, 2·1	3·0	1·6, 1·8	3·0
Gentianæ rad.	3·3, 4·0, 2·9, P. 2·2	5·0	2·4, 3·5, P. 4·5	5·0
Glycyrrhizæ rad.	3·6, P. 3·3	4·0	4·8, P. 3·3, 2·8, 3·7	5·0
Granati cort.	13·1, 15·5	15·0	—	16·0
Guaiaci lig.	1·3	3·0	1·1	2·0
Guaiaci res.	1·4, 1·3, 3·7, 5·6	3·0	0·6	2·0
Hæmatoxyli lignum	2·1, 1·8, 2·7.	2·0	—	2·5
Hamamelidis fol.	8·5, 5·1, 4·6	8·0	5·5, 4·3	8·0
Hamamelidis cort.	4·7, 5·1, 5·0	5·0	3·4	6·0
Hemidesmi rad.	4·4	4·0	3·7	5·0
Hydrastis rhiz.	12·0, 8·5, 4·7	10·0	4·3	—
Hyoscyami fol.	11·8, 8·6	12·0	21·9 Exot., 14·0 Ang., 12·4 P. Ang.	—
Ipecacuanhæ rad.	3·2, 2·1, 2·9, 2·5, 3·1	5·0	2·0 to 3·4	5·0
Jaborandi fol.	6·0, 8·1, P. 11·7	7·0	4·5, 4·6, 4·2, 4·0	8·0
Kino	1·4	2·0	0·8	2·0
Krameriæ rad.	1·6	2·0	2·5, P. 4·4	2·0
Limonis cort.	4·9, 5·3	5·0	3·7	5·0
Linum	3·6, 3·3, 3·6	5·0	—	5·0
Lobelia	9·0	12·0	3·4, 4·7, 3·8, P. 9·5	10·0
Lupulinum	15·6	14·0	13·4	—
Lupulus	10·8	7·0	6·9, 7·5	10·0
Mezerei cort.	3·1, 3·0	4·0	3·1	4·0
Moschus	5·2	8·0	—	8·0
Myristica	2·4, 2·1	4·0	1·9, 1·7, P. 2·5	5·0
Myrrha	3·8, 3·6, 9·9, 4·2, 17·0, 3·2, 9·8, 9·8, 3·8	6·0	2·6, 2·6, 6·7, P. 9·8, 10·7	6·0
Nux vomica	2·0, 1·3, 1·1	2·0	1·1, 2·4	2·0
Papaveris capsulæ	9·1	10·0	11·3, 8·6	12·0
Pareiræ rad.	3·4, 3·6, 3·5	4·0	2·5	5·0
Physostigmatis sem.	3·9	4·0	3·1	4·0
Pimento	4·2	5·0	2·8, 3·5	5·0
Piper album	1·0 to 3·0	—	—	3·0
Piper nigrum	4·0 to 7·0	7·0	3·3. P. 6·3	4·0 to 7·0
Podophylli rhiz.	2·9	5·0	3·2	5·0
Pruni Virg. cort.	5·1, 4·2, 4·0, 4·6	6·0	2·9	6·0
Pterocarpi lig.	1·7	1·0	1·2	2·0
Pyrethri rad.	6·0, 5·3, 4·9, P. 18·5, 17·5	5·0	3·9	6·0
Quassiæ lig.	3·4, 3·7	4·0	2·5	4·0
Quillaiæ cort.	14·6, 14·1	12·0	8·0, 8·2	—
Rhei rad.	12·2, 11·0, P. 7·4	12·0	4·9, 7·3, P. 8·8, 10·7	30 0
Rhœados petala	18·0, 20·0	16·0	—	20·0
Rosæ Gallic. petala	2·8	4·0	1·8, 3·1	4 0

* The letter P. indicates that the sample was in powder.

Drug.	Moor and Priest.	J. C. Umney.	J. Barclay.	Chatta-way and Moor.
Sarsæ rad.	6·5	8·0	6·0, 10·5, 5·7, 5·1	—
Sassafras rad.......	0·64	2·0	0·8	2·0
Scammoniæ rad. ..	11·1, 10·9	12·0	9·1	12·0
Scammonium	7·9, 4·9, 6·1	—	3·4	6·0
Scilla	3·8, 2·8, 2·9, 3·4, 2·5, P. 2·5	4·0	2·1, P. 2·5	4·0
Scoparii cacumina .	3·5	4·0	2·3	4·0
enegæ rad.	4·0, 3·1, 4·6, P. 24·0	5·0	4·2, 4·4	5·0
Sennæ fol.	5·6, 8·6, 9·1, 10·9, 10·4, 8·9. 7·2	14·0	7·9, 8·4, 8·5, 7·3, 8·1, 8·6, P. 9·4	14·0
Serpentariæ rad. ..	8·9, 30·7, 10·1, 13·4, 6·0, 7·1, P. 18 0, 18·4	10·0	5·7, 10·1	9·0
Sinapis	4·0 to 6·0	5·0	4·0, 4·3, 4·3	4·0 to 6·0
Staphisagriæ sem. .	26·0, 14·0	15·0	13·3, 11·7	15·0
Stramonii fol.......	18·1, P. 20·1	15·0	20·2, 19·3, 13·9, 22·0	20·0
Stramonii sem.	3·0	3·0	2·4	3·0
Strophanthi sem...	3·8, 3·4, 3·4, 4·0	5·0	3·8	5·0
Sumbul rad.	5·7	6·0	6·1	7·0
Taraxaci rad.......	—	7·0	3·2	7·0
Tragacanth........	2·9, 4·9	4·0	3·2, 2·0, 1 7, P. 2·1, 2·2	5·0
Uvæ ursi fol	3·7	4·0	2·4	4·0
Valerianæ rhiz.....	8·0, 8·6, 13·7, 15·1, 19·5, P. 20·9	10·0	11·6, 10·0, 17·4	9·0
Zingiber	3·0 to 5·0	5·0	2·4 to 6	3·0 to 6·0

Compound Powders of the British Pharmacopœia.—The Irish Local Government Board Standards include ash figures for certain of the British Pharmacopœia Pulveres, and we have compared these figures with some obtained by ourselves :—

	C. and M.		I. L. G. B.
Pulv. Catechu Co................	3·0	....	3·3
Pulv. Cinnamomi Co...........	5·9	....	4·3
Pulv, Cretæ Aromat.	22·5	....	22·0
Pulv. Cretæ Aromat. c. Opio ..	20 6	....	22·0
Pulv. Glycyrrhizæ Co.	4·1 to 5·3	....	4·5
Pulv. Ipecac. Co.	79·0	....	81·1
Pulv. Jalapæ Co.	23·2	....	20·0
Pulv. Rhei Co.	63 to 65	....	68 0
Pulv. Scammoniæ Co.	1·9	....	2·0

The Irish Local Government Board Standards are termed "suggested standards," but their analysts are directed to condemn samples which fall below them. It seems desirable that a range should be given, as it is obvious that, however carefully prepared medicines may be, they cannot be set to correspond with a precise figure except in certain cases, which are comparatively few.

The only two substances mentioned above that call for comment are the figures for Pulv. Glycyrrhizæ Co. The total ash figure may vary from 4·1 to 5·3, but the figure for soluble ash appears to be more important, and should not fall below 2·5.

LIQUOR ANTIMONII CHLORIDI.

BY F. H. ALCOCK.

This preparation, although not now official, is much in demand for veterinary and other purposes. It also finds a place in the chemical laboratory for many operations. During the course of a series of experiments with this solution and certain salts of strontium and barium, it was found that after some time a dense precipitate made its appearance, and much, if not all, the antimony was precipitated, apparently mechanically, with the precipitate, although the solution was strongly acid from the presence of hydrochloric acid. An examination of the precipitate showed that it contained much sulphate, due to strontium or barium sulphate, whichever salt had been originally used, and this result led to an examination of the solution of antimony chloride used for the experiments, and sulphate to the extent of a yield of 0·537 Gm. barium sulphate from 2·0 C.c. of the liquor was found to be present. As the age and origin of the laboratory sample were not fully known, several fresh samples were purchased, and all were found to contain much sulphate. One of them was submitted to quantitative analysis, and 10 C.c. yielded 4·817 Gm. $BaSO_4$! There was also present in this same sample iron to the extent of 2·75 Gm. Fe_2O_3 per 100 C.c. Reference was made to a well-known analytical chemist and expert manufacturer of our city, who stated that very little of this antimonial solution was prepared in strict accordance with the 1885 B.P., and most commercial samples did not yield a s.g. equal to that there stated. One feels inclined to think a victim has a grievance against the seller for misdirection, for the label implied solution of chloride of antimony, and it behoves the experimentalist to either prepare his own sample or to test it before undertaking somewhat costly experiments (in time and labour), or he will suffer severe disappointment and vexation. Perhaps a way out of the trouble would be to let the legend on the bottle be as follows:—"Liquor Antimonii Chloridi cum Quantitate Magna Sulphatum," and thus save the conscience.

THE RATIONALE OF PHOTOGRAPHY (4).

BY C. F. TOWNSEND, F.C.S.

Colour Photography and Dark Room Illumination.

The sensitiveness of the ordinary photographic dry plate to the different constituents of white light is entirely different to the sensitiveness of the eye to these rays. In the latter case the greatest effect is produced by the yellow and green rays; whilst in the photographic plate, on the other hand, it is the violet end of the spectrum which causes the greatest reduction on the plate. The yellow orange and red rays have very little action upon the ordinary plate, and for this reason a red orange or yellow light is employed in the dark room to work by. At the same time it must be remembered that the sensitiveness of the plate to the different rays is only comparative and that what is considered the safest dark room lamp will fog a plate if it is exposed to the light sufficiently long. Some years ago I made a large series of experiments upon the different materials—glass, fabrics and papers—used for giving a safe light in the dark room, and I found that, speaking generally, the best light to use was a yellow orange. In many instances the red glass, when examined through the spectroscope, was found to let through a certain amount of violet light and not to be nearly so safe or reliable as orange yellow. This, of course, is for the ordinary plate or bromide paper. For the latter quite a bright canary medium can be used.

It is most important to have a good light to work by when developing bromide prints, as the risk of an unsafe light is small compared with the risk of wasting paper through under or over development. In developing a negative a little extra density is not a matter of much consequence, but in bromide prints it is absolutely essential that the development be stopped at exactly the right point. On the whole, I think that the gloomy dark room is the greatest possible mistake. Most of the dark rooms I have been in have been like miniature reproductions of the black hole of Calcutta in regard to ventilation and illumination. My own plan is to have a "safe" light well under control and use either none at all or plenty of light. It is far better to keep the room almost in darkness in the early stages of development and then to use plenty of light for a rapid examination of the plate at a reasonable distance from the light, than to have such a poor light that the plate has to be held close up against the glass of the lamp for a considerable period before its progress can be ascertained. In developing colour-sensitised or isochromatic plates, as they are usually called, no light is really safe, and I always take great care, whilst having a reasonably good light in the room for the purpose of examining the plate, to keep the dish covered with a cardboard box whilst development is proceeding, removing the box only for a moment to examine the plate at intervals.

When photographed upon the ordinary dry plate, the colours in a landscape do not appear in their right relation. The red poppies and the yellow corn appear almost equally black, whilst the cornflower appears almost as white as the daisy. Also the clouds, the blue sky, and the distant hills usually appear as a monotonous stretch of white in the print. Similarly in photographing a picture the same difficulties present themselves. There are two ways of remedying the defects in the sensitiveness of the photographic plate. First, it has been found that by the addition to the film of certain dyes the sensitiveness, which in the ordinary way stops practically in the green, can be extended to the yellow, orange, and even to the red part of the spectrum. The addition of ammoniacal eosin extends the action of light on the plate right up to the yellow-green; ammoniacal erythrosin extends the action to the green blue, where there is a rapid falling off, but the plate is sensitive again to the yellow and orange; ammoniacal rose Bengal gives a very similar result, but the action extends farther into the red; cyanin (quinoline blue) sensitises the plate up to the yellow-green, misses the yellow and orange, but allows a considerable action in the red.

Other dyes, such as cœrulein, alizarin blue, chlorophyll, chrysanilin, are used also as sensitisers for different parts of the spectrum. All these dyes although they render the plate sensitive to other rays than the blue and violet, do not stop the action in that part of the spectrum, which still remains very much greater than in any other part. Consequently, it is not sufficient simply to sensitise the plate for other colours than the blue and violet, but something must be done to diminish the force of the violet rays. This is effected by introducing a light filter, composed of aurantia, or some other orange or yellow dye, such as Manchester yellow, in the path of the light before it reaches the plate. The light filter may consist of a strip of dyed collodion, either stretched on a metal frame or mounted on glass, or a glass screen flashed on the surface with the requisite tint, or a cell full of coloured liquid. The light filter may be placed either behind the lens or in the diaphragm slot.

On the whole, the cell is the most scientific arrangement, as a standard solution of the dye can be made and used fresh every time; whereas the dyed collodion or gelatin gradually fades, and there is a good deal of uncertainty in its use. A solution of potassium bichromate forms a very good filter. Great care must be taken in the adjustment of the screen to see that the cutting out of the blue and violet rays is not overdone, or the result on the sensitised plate will be quite as false to nature as a photograph on an ordinary untreated plate. By the use of a proper combination of dyes and the judicious employment of the yellow light filter, a plate may be rendered almost equally sensitive to all the rays of the spectrum. Such a plate is very useful for copying pictures or for scientific work, where accurate equivalence of colour is desirable; but for ordinary landscape work a plate sensitised for the yellow and green, as is the case with most of the isochromatic plates on the market, is quite sufficient. This plate can be developed with comparative safety in a dull ruby light, although it is advisable to expose it even to this light as little as possible. For the panchromatic plate, which is sensitive right through the spectrum, the ruby light is as unsafe as any other. At first sight it would appear that such a plate must be developed in absolute darkness. Fortunately, however, there is a little gap in the blue green to which the plate is not rendered sensitive, and a dark room light accurately corresponding with this gap can be used with safety.

Isochromatic plates are no more trouble to work than ordinary plates, and the results secured upon them are certainly very much better. In addition to rendering the landscape more in conformity with nature, they frequently allow the clouds to be well represented, as well as the distant hills. In portrait work, also, they render the texture and colouring of the skin and of the hair very much better than the ordinary plate. Their only drawback is that they do not keep in good condition quite so long as the ordinary plate, but the difference is not sufficiently great to make much difference to the average photographer.

NOTES ON ESSENTIAL OILS.*

Cubebs.—Eight samples of cubeb oil of our own manufacture showed specific gravities ranging from 0·920 to 0·927.

We may say that we have never yet been able to obtain an oil having a specific gravity so low as the minimum of 0·910 given in the Pharmacopœia. The following fractional figures obtained by an examination of one of the samples may be of interest :—

1.—Up to 250°	10 per cent.
2.—From 250° to 260°	25 ,,
3.—From 260° to 270°	48 ,,
4.—From 270° to 280°	11 ,,
5.—Above 280°	6 ,,

Juniper.—The specific gravity of two samples of English oil examined during the year proved to be 0·867 and 0·879 respectively, the corresponding rotation figures being −9° and −6°. Three samples of foreign oil showed specific gravities ranging from 0·866 to 0·871, and two of the samples in question were dextrogyrate.

Lemon.—Four samples examined during the year showed the same specific gravity of 0·857, and rotation figures varying between 58° and 59°. The percentages of citral obtained by the examination of two samples were 6·1 and 6·0 respectively. We continue to adopt the citral test, using the Burgess and Child method as giving the most satisfactory results.

Lavender.—Two samples of Mitcham oil examined during the year showed specific gravities of 0·883 and 0·884 respectively. A determination of linalyl acetate in the samples gave percentages of 6·9 and 7·7 respectively. The specific gravity of six samples of foreign oil ranged from 0·870 to 0·888, and the ester percentage lay between 8·31 and 33·42, the latter a Monte rose oil.

Origanum.—Six samples of this oil examined during the year showed specific gravities ranging from 0·883 to 0·908, while the corresponding phenol percentages varied from 4·2 to 8·6 per cent.

Petitgrain.—A sample of this oil examined showed a specific gravity of 0·888, and a linalyl acetate percentage of 45·62.

Pimenta.—Two samples examined during the year showed specific gravities of 1·027 and 1·042, with respective percentages of eugenol corresponding to 76·0 and 88·7.

Peppermint—Four samples examined during the year showed specific gravities of from 0·900 to 0·908. The percentage of menthyl acetate in the samples varied from 8·5 to 9·8, and that of free menthol gave figures ranging from 48·5 to 58·06, the last-named amount being found in a sample of English oil.

Pennyroyal.—Two samples of genuine oil showed rotation figures of 18·5 and 19·5 respectively. A third sample of oil had a specific gravity of 0·917, a rotation figure of 3° 30′, and a distinct odour of peppermint. These figures seem to point to the presence of an admixture with a large proportion of peppermint oil, probably of an inferior character.

Rose (Otto of Rose).—Eleven samples examined during the year showed specific gravities ranging from 0·855 to 0·874. The melting and solidifying points of the samples accorded fairly well with the published figures, but several of them gave suspicious results on the application of the test given for geranium oil in the 'United States Pharmacopœia.'

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* From the eleventh annual laboratory report of Messrs. Southall Bros. and Barclay, Limited.

Rosemary.—The specific gravity of five samples of foreign oil ranged from 0·880 to 0·900, and the rotation figures obtained varied round wide limits, one sample giving a rotation of less than a degree, and another of 11°. Several of the samples proved to be insoluble in twice their volume of 90 per cent. alcohol, pointing to the likelihood of adulteration with French or American turpentine, or a mixture of both.

A sample of English oil showed a specific gravity of 0·929, and a rotation figure of 1° 45′.

Savin.—Two samples of English oil showed specific gravities of 0·921 and 0·924, with rotation figures of +40°·5 and +39°, and distillates below 200° C. of 24 and 26 per cent. respectively.

Sandal Wood.—Seven samples examined showed specific gravities ranging from 0·973 to 0·977, and rotation figures of from −15½° to −18°. Three samples assayed for santalol gave 97·9, 96·45, and 91·9 per cent. respectively. As we have before had occasion to remark, the physical characters of this oil vary round very small limits.

PERSONAL VIEWS ON CURRENT TOPICS.

Union is Strength.

BY CHARLES T. ALLEN.

A Popular Fallacy, Begotten of Ignorance.

> WANTED.—Man, as Dispenser, Bookkeeper, etc.; 30s. per week, outdoor.—Apply, enclosing photograph, stating age, references, etc., to Drs. A and Z, Blanktown, "Blankshire."

Who is responsible for this esteem, which places the dispenser financially on a level with the 'bus conductor? Undoubtedly one of the factors which have largely contributed to the present precarious position of the dispensing chemist as a public dispenser is the lack of appreciation shown by members of the medical profession towards him and his art. The average practitioner possesses scant knowledge of pharmacy or its allied sciences; it is, therefore, a natural consequence that he more often than not relegates the duty of compounding medicines to any person who is capable of deciphering his hieroglyphics. Some of my *confrères*, as on a previous occasion, will perhaps accuse me of holding pessimistic views concerning the future of British pharmacy. It would be interesting, however, to know if there is another European country where the services of the pharmacist are less esteemed than in the United Kingdom. The two members of the medical profession who inserted the above advertisement (in your issue of October 24) estimate the value of a dispenser's services at 30s. per week (outdoors). Moreover, in order to earn this lordly remuneration the dispenser must supplement his mixing propensities by keeping the books and performing certain nameless etceteras, which may possibly include the duties of errand boy, groom, or chauffeur. It is certain that whoever accepts this lucrative position will not be qualified, in the strictest sense of the word, to perform his principal duty, viz. (that of compounding medicines) unless, indeed, he be a philanthropist, anxious to contribute to the public benefit.

An Awkward Question and Uncomfortable Answer.

My reason for dilating upon this subject is to ask a question, and if possible to answer it. Who is responsible for this depreciation of the art of dispensing for this esteem which places the dispenser financially on a level with the 'bus conductor? It is a question which in my opinion deserves the attention of every qualified chemist who has at heart the welfare of English pharmacy. My answer is an uncomfortable one, and as such is particularly open to the criticism of my readers. It is my belief that chemists themselves are chiefly responsible for the unfortunate position in which, by comparison with their Continental *confrères*, they find themselves to-day. There is, and as far as I am able to ascertain, there always has been a lack of unity amongst chemists. They have never been the power they should be in promoting their own welfare. Petty bickerings have made true representation impossible. The Pharmaceutical Society, instead of representing the whole trade represents a fraction, and the fault in my opinion lies with those dissentients who are outside its ranks. It is not possible for the Council of the Society to formulate schemes for the promotion of our welfare with any real hope of success, unless every registered chemist enrols himself a member and is able to arouse sufficient *esprit de corps* to enable him to conscientiously exercise his voting powers. The promotion of legislation for the better regulation of pharmacy and the protection of those who practise it in the spirit of the Act of 1868 is made difficult, if not impossible, by the unrepresentative nature of the Society's ranks.

The Necessity for Pharmaceutical Federation.

I would, therefore, appeal to every unaffiliated registered chemist, if only in his own interests, to become a member of the Parent Society. More especially would I urge this simple step in the interests of the community, of which he should be, if he does not neglect his duty, a useful unit, an active element in a powerful union, whose representations, being those of the majority, could scarcely fail to draw blood even from the paving-stones and figure-heads of Westminster. Is there another craft whose members display so much apathy concerning their own welfare? Trade unionism has done much for the working-man, because the unions are really, representative. Their quarrels take place *inter se*, and they emerge from their councils with definite propositions. The Legislature cannot deny that such propositions are those of the majority. It is not my intention to suggest that chemists should adopt the tactics of the trade unions, engage a retinue of agitators, or resort to strikes in order to secure or improve their position, but I do think that our Society should—by hook or by crook—be made truly representative of the registered chemists of the United Kingdom. It is a lamentable fact that there are many members of our craft who never tire of announcing that they do not join the Society because they are unable to see what benefit they derive for their guinea subscription. Such a statement, in my opinion, can only be the result of ignorance. True representation alone would surely be worth risking fivepence a week upon. Add to this a most useful weekly journal, an insurance against poverty through the agency of the Benevolent Fund, the up-keep of headquarters, worthy of the craft, of the museums and library, of a school and teachers second to none in the kingdom, all of which institutions tend to raise the status of the pharmacist and, indirectly, his financial value. Surely we must conclude that these considerations are sufficient to warrant the expenditure of fivepence a week, or less than one penny per day! Unfortunately, failures at examinations constitute a fruitful cause of desertion from our ranks. Many men who are obliged to make more than one attempt to qualify are piqued at their own misfortune, and, by way of anointing their wounds, swear never to contribute a cent more to the coffers of the Society. They are suicides as far as their own welfare is concerned. Could any policy be more shortsighted? Instead of supplementing their larger contributions with the small annual one, and so contributing to the unity which is so essential to the welfare of every craft, they elect to remain outside, thus becoming the enemies of both their *confrères* and themselves, stumbling-blocks to every scheme for the promotion of their own welfare. There can only be one conclusion concerning such people, and that is they have not been fortunate enough to secure sufficient education to serve their purpose in life. They are, therefore, to be pitied, though they cannot be ignored.

He Who Consents to Wear Stolen Boots is Morally a Thief.

This lack of cohesion amongst chemists has deprived them of the power of retaliation. In consequence, the pharmacist's position has been assailed by unqualified financiers, who have been sufficiently good business men to note this absence of unity and to trade upon it. They realised that they would meet with no real organised opposition. The introduction of a new preliminary standard of education was a great step in the right direction, and cannot fail in course of time to produce men who will have little difficulty in realising the necessity for union and collective action. The absence of a thoroughly representative pharmaceutical union in the past has, in my opinion, had much to do with the inglorious position in which the dispensing chemist finds himself to-day.

Pharmaceutical Parasites and their too Hospitable Hosts.

It has allowed parasites without number to drain away the very vitals which are the essential factors of the pharmacist's vocation. There are existent in England many huge concerns which have been a great financial success, and whose businesses have been founded mainly upon the short-sightedness of the chemist. We have allowed these parasitical aliens with their rotoids and other ready-made medicines to attack us without demur, have opened our doors, aided and abetted their schemes for capturing a large percentage of our dispensing returns. It is now the unenviable task of the dispensing chemist to deal with numbers of prescriptions daily which cannot boast an ingredient finding a place in the Pharmacopœia. And why? Because from the first the chemist bowed his head to what he considered the inevitable. He refused to fight, to argue the point, and to show the medical profession that the whole essence of pharmaceutical technique was of no service to them or the public if it threw its consulting rooms open to the purveyors of ready-made medicines, and played into the hands of the irresponsible company pharmacies.

The Efficiency of Qualified Proprietorship.

The factor of personal qualification, supervision, and responsibility if presented to local practitioners and supported by samples of medicaments extemporaneously prepared at the dispensing counter, would even now go far to alter the character of many prescriptions, and improve our position as public dispensers. There is no need for the chemist or the doctor to adhere altogether to the time-honoured mixture and pill, if patients prefer some form of administration whose name is less suggestive of mediæval times. Nor is there, as far I can see, any need for the chemist to relinquish his hold upon that feature of his business which he is specially trained to conduct. There is no form of medicament—no unofficial method of administration—which cannot be equally, if not better, utilised extemporaneously at the dispensing counter. The stronger arguments are on his side, and if he would only exert himself to use them in as forcible a manner as possible I, for one, do not believe he would have much difficulty in establishing the necessity for medical men to support him as a *bonâ fide* dispensing chemist in the interests, not only of themselves, but of their patients.

Evil Effect of Encouraging the Distribution of Proprietaries.

Self-drugging is undoubtedly on the increase, mainly owing to the prominence given by the medical profession to portable forms of medicaments, which are often sold enveloped with quantities of misleading and encouraging literature, and which are more or less easily obtained by the patient or his friends without proper medical authority from the nearest traders in ready-made medicine. I do not think there can be any doubt that the dispensing chemist has jeopardised his very existence during the last decade by acquiescing silently to the endeavours of the ready-made medicine makers, and by his policy of contemptuously ignoring the efforts of the large drug companies. In my opinion chemists should federate; then, and not till then will they be in a position to organise powerful methods of retaliation. Let the Pharmaceutical Society be absolutely representative of dispensing chemists. Let every chemist who desires to do the work he is trained to do assert himself and point out, by the most powerful means he can devise, the risks which the public are subject to in their dealings with irresponsible and impersonal drug companies, and to the medical profession the evils of prescribing proprietaries in general.

State Your Case, and the Public Will Find in Your Favour.

There is already a pamphlet in existence which appears to me to put the case for the dispensing chemist in a manner which should be intelligible to the public. The pamphlet has already been circulated by many chemists in different parts of the kingdom, and was printed in full in the *Pharmaceutical Journal* of February 28, 1903. I feel quite confident that if every dispensing chemist in England and Scotland circulated some such pamphlet amongst the public and the medical profession it could not fail to be productive of much good, and it would tend to restore to him that position which his training fits him to occupy. Moreover, his services would be more highly appreciated, and no longer lightly esteemed by the public and the medical profession. In a future issue I hope to be allowed to submit the results of some practical tests which have been made with the following objects in view:—First, to ascertain if we chemists can induce the medical profession to believe in our sincerity when we say that, so far as we are able to judge, the prescribing of nostrums and ready-made patented forms of medication is not only detrimental to the art of prescribing and the art of compounding, but is a positive danger to the public health? We, as chemists, know that nowadays every Tom, Dick, and Harry, presumes to be his own and his friend's physician, and that every *bonâ-fide* dispensing chemist does his best to check this growing evil. The medical profession does not at present know these facts. Secondly, if it does, it ignores them. If we succeed in inducing more practitioners to invent their own prescriptions without the aid of A. B. C. and Co.' correct card and latest numbers, are we dispensers capable of displaying sufficient ingenuity at the dispensing counter to prepare extemporaneously medicaments in any non-official form which they or their patients may prefer—forms which will not only equal in elegance those whose proprietors and advertisers we should do well to recognise as our enemies, but easily supersede them for reasons which should be obvious to every physician and pharmacist. I am already confident that the answer to these questions may be written in the affirmative, and I hope to be able to substantiate my optimism if necessary in another contribution.

THE MEDICINE STAMP DUTY ACTS.

LICENCES, STAMP DUTIES, DUTIABLE ARTICLES, AND EXEMPTIONS.

STAMP duties on medicines sold in Great Britain were first imposed in 1783, when an Act of Parliament (23 Geo. III. c. 62) was passed, compelling unqualified sellers of drugs and medicines to take out licences and pay a duty upon all medicines sold by them. Two years later that Act was repealed and replaced by a measure (25 Geo. III. c. 79) which also required chemists and druggists and other qualified persons to take out licences for the sale of medicines liable to stamp duty, though such persons were exempted in respect of crude or entire drugs, as well as compounded medicines of a non-secret character. In 1802 the second Act was, in turn, repealed, being replaced by a measure (42 Geo. III. c. 56) which re-enacted all the provisions of the 1785 Act, with certain modifications, and fixed the rates of duty now in force. Other amending Acts were passed in 1803 (43 Geo. III. c. 73), 1804 (44 Geo. III. c. 98), 1812 (52 Geo. III. c. 150), 1815 (55 Geo. III. c. 184), and 1833 (3 and 4 Will. IV. c. 97).

Licences to Sell Stamped Medicines.

The Act of 1802 provided that "every owner, proprietor, maker, and compounder of, and every person in Great Britain, uttering, vending, or exposing to sale or keeping ready for sale any drugs, herbs, pills, waters, essences, tinctures, powders, or other preparations or compositions whatsoever used or applied or to be used or applied externally or internally as medicines or medicaments for the prevention, cure, or relief of any disorder or complaint incident to or in anywise affecting the human body, or any packets, boxes, bottles, pots, phials, or other inclosures with any such contents as aforesaid, subject to the duties specified, shall annually take out a licence," the annual cost of which is now five shillings. Such licence, obtainable from the nearest collector of Inland Revenue, authorises one licence for one set of premises only, and is renewable on September 1 in every year. Any person selling an article liable to stamp duty, without having a licence, incurs a penalty, the Act of 1802 providing that "no person whatsoever shall in any manner take or receive any profit, advantage, or emolument, as the owner or proprietor of, or make or compound, or utter, vend, or expose to sale, or keep ready for sale, any drugs, herbs, medicines, medicaments, or other preparations or compositions aforesaid, or any packets, boxes, bottles, pots, phials, or other inclosures aforesaid, with any such contents as aforesaid, which shall be subject to the duties granted by this Act, unless he or she shall have first obtained a licence in such manner as hereinbefore directed, upon pain to forfeit for every such offence the sum of twenty pounds."

General Charge of Duty.

The medicines included in the general charge of duty are those mentioned in the schedule to the Act of 1812 (see page), most of which are now obsolete, and also "all other pills, powders, lozenges, tinctures, potions, cordials, electuaries, plaisters, unguents, salves, ointments, drops, lotions, oils, spirits, medicated herbs and waters, chemical and officinal preparations whatsoever, to be used or applied externally or internally as medicines or medicaments for the prevention, cure, or relief of any disorder or complaint incident to or in anywise affecting the human body, made, prepared, uttered, vended, or exposed to sale by any person or persons whatsoever, wherein the person making, preparing, uttering, vending, or exposing to sale the same, hath or claims to have any occult secret or art for the making or preparing the same, or hath or claims to have any exclusive right or title to the making or preparing the same, or which have at any time heretofore been, now are, or shall hereafter be prepared, uttered, vended, or exposed to sale under the authority of any Letters Patent under the Great Seal, or which have at any time heretofore been, now are, or shall hereafter be by any public notice or advertisement, or by any written or printed papers or hand bills, or by any label or words written or printed, affixed to, or delivered with any packet, box, bottle, phial, or other inclosure containing the same, held out or recommended to the public by the makers, vendors, or proprietors thereof as nostrums or proprietary medicines, or as specifics, or as beneficial to the prevention, cure, or relief of any distemper, malady, ailment, disorder, or complaint incident to or in anywise affecting the human body."

Duty Payable Upon Medicines.

The duty payable upon medicines which are liable is defined by the Act of 1804, in the following terms:—

	£	s.	d.
Medicines, for and upon every packet, box, bottle, pot, phial, or other inclosure, containing any drugs, herbs, pills, waters, essences, tinctures, powders, or other preparation or composition whatsoever, used or applied, or to be used or applied, externally or internally, as medicines or medicaments for the prevention, cure, or relief of any disorder or complaint incident to or in anywise affecting the human body; which shall be uttered or vended in Great Britain, where such packet, box, bottle, pot, phial, or other inclosure, with its contents, shall not exceed the price or value of one shilling	0	0	1½
Where such packet, box, bottle, pot, phial, or other inclosure, with its contents, shall exceed the price or value of one shilling, and not exceed the price or value of two shillings and sixpence	0	0	3
Where such packet, box, bottle, pot, phial, or other inclosure, with its contents, shall exceed the price or value of two shillings and sixpence, and not exceed the price or value of four shillings	0	0	6
Where such packet, box, bottle, pot, phial, or other inclosure, with its contents, shall exceed the price or value of four shillings, and shall not exceed the price or value of ten shillings	0	1	0
Where such packet, box, bottle, pot, phial, or other inclosure, with its contents, shall exceed the price or value of ten shillings, and shall not exceed the price or value of twenty shillings	0	2	0
Where such packet, box, bottle, pot, phial, or other inclosure, with its contents, shall exceed the price or value of twenty shillings, and shall not exceed the price or value of thirty shillings	0	3	0
Where such packet, box, bottle, pot, phial, or other inclosure, with its contents, shall exceed the price or value of thirty shillings, and shall not exceed the price or value of fifty shillings	0	10	0
Where such packet, box, bottle, pot, phial, or other inclosure, with its contents, shall exceed the price or value of fifty shillings	1	0	0

Payment of Duty.

The duty must be paid as provided by the Act of 1802, which states that "the rates and duties by this Act granted shall be payable and paid by the owners and proprietors, or makers and compounders, or original and first vendors of such drugs, herbs, oils, waters, essences, tinctures, powders, or other preparations or compositions aforesaid, and shall be charged upon and payable and paid in respect of the same, and of every packet, box, bottle, pot, phial, or other inclosure aforesaid, with any such contents as aforesaid, before the same shall be first sold by or delivered out of the custody or possession of the owners, proprietors, makers, compounders, or original and first vendors thereof, for sale, either wholesale or retail, either for foreign or home consumption or otherwise, and before the same shall in any way be uttered or vended, either for foreign or home consumption, or exposed to sale, or offered or kept ready for sale, and not in bulk, in any shop, house, or other place, by any such owner, proprietor, maker, compounder, or original and first vendor aforesaid, or any person or persons on his or her behalf." The payment of duty is indicated by affixing a stamp (purchasable at any district Post Office) of the requisite value to the packet or other inclosure containing the medicine, as provided by the Act of 1812, which states that "if any person or persons, whether licensed or not, shall utter, vend, or expose to sale, or offer or keep ready for sale, whether for foreign or home consumption, or buy, or receive, or keep for the purpose of selling by retail, either on his, her, or their own account, or on the account or behalf of any other person or persons, any packet, box, bottle, pot, phial, or other inclosure containing any of the drugs, herbs, oils, waters, essences, tinctures, pills, powders, preparations, or compositions mentioned and set forth in the schedule annexed to this Act, without a paper cover, wrapper, or label, provided and supplied by the Commissioners of Stamps, pursuant to the said Act of the forty-fourth year of His Majesty's reign, or to the Act of the forty-second year of His Majesty's reign hereinafter recited, and duly stamped, for denoting the duty charged on such packet, box, bottle, pot, phial, or other inclosure, being properly and sufficiently pasted, stuck, fastened, or affixed thereto, so and in such manner as that such packet, box, bottle, pot, phial, or other inclosure cannot be opened and the contents poured out or taken therefrom without tearing such stamped cover, wrapper, or label so as to prevent its being made use of again, then and in such case the person or persons so offending shall for every such offence forfeit the sum of ten pounds, to be recovered and applied in such and the same manner as the pecuniary penalties imposed by the said Acts of the forty-second and forty-fourth years of His Majesty's reign, or either of them in relation to the duties on medicines, are or ought to be recovered and applied." In view of the virtual impossibility of affixing the duty-labels to bottles, etc., containing dutiable medicines in such a way that the contents cannot be removed without tearing the labels, the Board of Inland Revenue does not now enforce a literal compliance with the provisions of the Act in that respect, but it has been intimated that this concession will be withdrawn if found dangerous to the revenue.

Allowance for Spoiled Stamps.

An allowance for spoiled stamps, or for stamps on unsaleable stock, will be made by the Commissioners of Inland Revenue if application be made to the Board or to the nearest Revenue officer within six months of the accidental spoiling of the stamps or labels. This is in accordance with the Act of 1802, which provides that "in case any covers, wrappers, or labels shall be damaged, defaced, or spoiled in affixing the same upon such wares or other articles as aforesaid, or otherwise, so as to be rendered unfit for use, it shall and may be lawful for any person or persons, licensed in pursuance of this Act, to bring such covers, wrappers, or labels so marked and stamped as aforesaid, together with the wares or other articles to which the same shall have been affixed, to the Commissioners for managing the stamp duties, or to the head officer appointed by them; and on oath (or solemn affirmation in case such licensed person shall be one of the people called Quakers) thereof made by such licensed person to the satisfaction of the said Commissioners or head officer so appointed (who are hereby authorised to administer such oath or solemn affirmation, and to examine into all circumstances relating to the damaging, defacing, or spoiling the same), that such covers, wrappers, or labels, so defaced or spoiled, or rendered unfit for the purpose intended, have not been used for any other purpose, or in any other manner whatsoever, and that none of them have been fradulently rebought or returned, after the same have been sold or disposed of, and that no money or other consideration hath been paid or given for the same, save and except the money first paid for such covers, wrappers, or labels, at the stamp office or other places appointed by the Commissioners for the distribution thereof, then, and in such case, the said Commissioners are hereby required and directed, after destroying such defaced covers, wrappers, or labels, to deliver to such licensed person other covers, wrappers, or labels of the same denomination or value instead of the covers, wrappers, or labels so damaged, defaced, or spoiled, or rendered unfit for use as aforesaid, without demanding, or taking, directly or indirectly, for the same any sum of money or other consideration whatsoever."

Liability to Medicine Stamp Duty.

Broadly speaking, there are four separate and distinct grounds on which liability to stamp duty may attach to a medicine which is not mentioned by name in the schedule to the Act of 1812, viz.:—

(1) A claim, whether well founded or not, to any secret or art in the preparation.
(2) A claim whether well founded or not, to any proprietary right in the preparation.
(3) The sale of the preparation, either present or past, under the authority of Letters Patent.
(4) The use at any time of any handbill, label, or advertisement holding out the preparation (*a*) as a nostrum or proprietary medicince, or (*b*) as a specific, or (*c*) as beneficial for the prevention, cure, or relief of any distemper, malady, or ailment, disorder, or complaint, incident to or in anywise affecting the human body.

A medicinal preparation may not be sold unstamped, without involving liability to penalty, unless care has been taken to avoid any expression or phraseology which can be construed as representing:—

(1) That the preparation of the medicine is a secret, or that the medicine is a specialty of any person, or that it is made in conformity with any special recipe. For instance, such fancy names as "The City of Liverpool Cough Lozenges," "St. Mark's Linctus," "Mephisto Corn Paint," etc., must be avoided.
(2) That it is the preparation of any particular person, or that anyone has a proprietary right in its manufacture or sale, for example, "Smith's Liver Pill," "Neuralgic Tincture, prepared only by Jones."
(3) That it will prevent, cure, or give relief in any disorder.

All such expressions must not only have been avoided on the label, itself, but also in all references to the medicine, whether on the label, wrapper, or cover, or in any printed or manuscript matter whatever, including newspapers, handbills, posters, show cards, advertisements, almanacs, lists, etc., inasmuch as, although the labels *per se* may not render the preparations to which they relate liable to duty, the preparations may be made so liable by the publication of other printed or written matter. It is well established that where any such expressions as aforesaid have been so used at any time before sale, the medicine is thereby rendered liable to stamp duty, even though the actual label on the package is entirely innocent. The Board of Inland Revenue formerly recognised the necessity that exists for giving to a preparation such a designation or name as shall distinguish it from other medicines, and did not attribute any further meaning to such words as cough mixture, teething powders, corn paint, etc., etc., but that concession has now been withdrawn.

Exemptions from Stamp Duty.

By the Act of 1815, it is provided that ginger and peppermint lozenges, and other articles of confectionery, are exempt from stamp duties, unless the person vending the same shall sell the same as medicines or as beneficial for the prevention, cure, or relief of any distemper, malady, ailment, or disorder, incident to or in anywise affecting the human body, nor to compel the person or persons vending the same to take out the licence required by persons vending medicines. A similar exemption is extended by the Act of 1833 to all artificial mineral waters, and all waters impregnated with soda or mineral alkali, or with carbonic acid gas, and all compositions in a liquid or solid state to be used for the purpose of compounding or making any of the said waters. With respect to these statutory exemptions, the terms of that applicable to articles of confectionery not vended as medicines are clear and unmistakable, and it follows from the decision of the Court of Appeal in the case of the Attorney-General *v.* Lamplough (L.R., 3 Exch. Div. 214) that effervescent preparations similar in composition to Lamplough's Pyretic Saline are exempt from duty. The addition of a medicinal substance to such compositions, would, however, take them out of the exemption, *e.g.*, effervescent citrate of iron is liable. The Act of 1812 also provides for three special exemptions:—

Special Exemptions.

(1) All drugs named or contained in the 'Book of Rates,' subscribed with the name of Sir Harbottle Grimstone, Baronet, and mentioned and referred to by the Act of tonnage and poundage made in the twelfth year of the reign of King Charles the Second, and in another 'Book of Rates' intituled "An additional book of rates of goods and merchandizes usually imported and not particularly rated in the 'Book of Rates,' referred to in the Act of tonnage and poundage made in the twelfth year of the reign of King Charles the Second, with rules, orders, and regulations signed by the Right Honourable Spencer Compton, Speaker of the Honourable House of Commons, and mentioned and referred to by an Act made in the eleventh year of the reign of His Majesty George the First."

(2) All medicinal drugs whatsoever which shall be uttered or vended entire without any mixture or composition with any other drug or ingredient whatsoever by any surgeon, apothecary, chemist, or druggist who hath served a regular apprenticeship, or by any person who hath served as a surgeon in the Navy or Army under any commission or appointment duly entered at the War Office or Navy Office, or by any other person whatsoever licensed to sell any of the medicines chargeable with a stamp duty.

(3) All mixtures, compositions, or preparations whatsoever mixed or compounded with or prepared from medicinal drugs, medicated or chemical preparations or compositions, or other ingredients bearing different denominations or having different properties, qualities, virtues, or efficacies, which shall be uttered or vended by any such surgeon, apothecary, chemist, or druggist as aforesaid, or by any such person who hath served as a surgeon in the Navy or Army under any such commission or appointment as aforesaid, the different denomination, properties, qualities, virtues, and efficacies of which mixtures, compositions, and preparations as aforesaid are known, admitted and approved of in the preservation, cure, or relief of any disorder, malady, ailment, or complaint incident to or in anywise affecting the human body, and wherein the person mixing, compounding, preparing, uttering, or vending the same hath not nor claims to have any occult secret or art for the mixing, compounding, or preparing the same, nor hath nor claims to have any exclusive right or title to the mixing, compounding, or preparing, or to the vending of the same, and which mixtures, compositions, or preparations have not been, are not, nor shall hereafter be prepared, uttered, vended, or exposed to sale under the authority of any Letters Patent under the Great Seal, nor at any time heretofore have been, now are, or shall hereafter be by any publick notice, advertisement, or by any written or printed papers or handbills, or by any labels or words written or printed and affixed to or delivered with any such packet, box, bottle, pot, phial, or other inclosure aforesaid, held out or recommended to the publick by the owners, proprietors, makers, compounders, original or first vendors thereof as nostrums or proprietary medicines, or as specifics, or as beneficial for the prevention, cure, or relief of any such distemper, malady, ailment, or complaint as aforesaid.

The list in the 'Book of Rates' contains the names of no articles now in use except crude or entire drugs, such as are specifically exempted from stamp duty in the second paragraph, when sold by duly qualified or licensed persons. With regard to the third special exemption, which does not apply to sales by limited companies or by unqualified individuals, it is sufficient to state that the Board of Inland Revenue now regards as falling within the special exemption all medicines composed of drugs the denominations, properties, qualities, virtues, and efficacies of which are known, admitted, and approved, when they are sold by a duly qualified chemist and druggist, provided that either

(1) The label contains an adequate indication of the ingredients of the medicine; or

(2) The medicine is prepared in accordance with a formula in the British Pharmacopœia or other well-known book of reference, such as the 'Pharmaceutical Journal Formulary,' and that fact is stated or otherwise indicated on the label.

It must be pointed out, however, that the Board considers it has now no alternative but to regard such titles as "Cough Mixture" or "Antibilious Pills" as *per se* involving liability. But if such medicines fall within the scope of the exemptions above-mentioned, and one or other of the conditions stated above is satisfied, they do not require to be stamped, if sold by a duly qualified chemist or druggist. It must, however, be distinctly understood that where such words as "Cough Mixture" or "Antibilious Pills" are used, without an adequate indication of the ingredients of the medicines, or an indication of the formula from which they are prepared, liability to duty is thereby held to be incurred. It may be added that the Board regards as being *primâ facie* within the scope of the special exemption medicines described by such titles as "Quinine and Iron Tonic," or "Compound Rhubarb Pills" when sold by chemists with a recommendation—provided the title in each case discloses the principal active ingredients of the preparation.

SCHEDULE OF DUTIABLE MEDICINES.

Adam's Solvent.
Addison's Re-animating European Balsam.
Æthereal Anodyne Spirit.
Ague and Fever Drops (by Wilson)
Allan's Nipple Liniment.
Amboyna Lotion.
,, Mouth Powder.
,, Tooth Powder.
American Alterative Pills.
,, Salve.
,, Soothing Syrrup.
,, Tincture.
Andalusia Water.
Anderson's Scots Pills.
Angibaud's Lozenges of Blois.
Anodyne Necklace.
Antapoplectic Pills.
Appleby's Tea.
Arabian Balsam.
Arnold's Drops.
,, Pills.
Arquebusade Water.
Aromatick Spirit of Vinegar.
,, Condensed.
Asiatic Bilious Pills.
,, Tonic Tincture.
Austin's Chalybeate Pills.
,, Liniment.
Balm of Mecca.
,, of Quito.
Balsam of Iceland Liverwort.
Barclay's Antibilious Pills.
,, Asthmatic Candy.
,, Ointment.
Barlowe's Specific Medicine.
Barron's Cachou de Rose Lozenges.
Barton's Alterative Pomade.
,, Vital Wine.
Bateman's Drops.
,, Golden Spirit of Scurvy Grass.
,, Plain Spirits of Do.
Bath's Pills.
Bayley's British Tooth Powder.
,, Ointment.
,, Pectoral Pills.
Beaseley's Family Plaister.
Beaume de Vie.
Beiker's Tincture.
Bell's Restorative Pills.
Bennet's Worm Powders.
Benzoin, Essence of.
Berry's Bilious Pills.
Betton's British Oil.
Bird's Ague Tincture.
Birt's Martial Balsam.
Blair's Cephalic Fluid.
Blenkensop's Bilious Pills.
Boerhaave's Antiscorbutic Wine.
Bolderson's Worm Cakes.
Bollman's Specific.
Bolton's Asthmatic Tincture.
Bostock's Cordial.
,, Grand Elixir.
Bott's Corn Salve.
,, Tooth Powder.
Bourne's Æthereal Essence.
Box's Magnesia Lozenges.
Brabham's Oil.
Brandon's Composition or Medicine for the Evil and Scrophula.
Brazil Salts.
Brodum's Botanic Pills.
,, Botanical Syrrup.
,, Nervous Cordial.
Browne's British Pills.
,, Rheumatic Powders.
,, Tincture of Yellow Bark.
Bryant's Essence of Coltsfoot.
Burridge's Specific for Rheumatic Gout and Rheumatism.
Byron's Pills.
Bythell's Pectoral Lozenges.
Camphor, Æthereal Essence of.
Catharmian Water.
Cathcart's Edinburgh Ointment.
,, Water.
Cephalic Snuff.
Chamberlain's Ointment.
,, Pills.
Chapman's Cerate.
,, Chilblain Water.
Ching's Worm Lozenges.
Chinner's Pills.
Church's Anodyne Essence.
,, Antispasmodic Elixir.
,, Chilblain Ointment.
,, Cough Drops.
,, Eye Salve.
,, Pectoral Pills.
,, Volatile Tincture.

Clerval's Syrup.
Clinton's Oil for Deafness.
,, Snuff.
Clyde's Balsam.
,, Ointment.
Coates' Cough Drops
Collier's Assistant Pills.
,, Ointment.
,, Remedy for Fistula and Piles.
Complin's Specific.
Cooke's Rheumatic Pills.
,, Family Pills.
Cordial Balm of Gilead.
Cornwell's Fruit Lozenges.
,, Opodeldoc.
,, Oriental Vegetable Cordial.
Costello's Cerate.
,, Collyrium.
,, Liniment.
Cottier's Resolvent and Healing Plaister.
Cox's Tincture.
Coxwell's Castor Oil Medicine.
Culpepper's Herb Cordial.
Cundell's Balsam of Honey.
Curtis's Syrup.
Daffy's Elixir, by whomsoever made.
Dalby's Carminative.
Dalmahoy's Sal Poignant.
,, Tasteless Salts.
Dawson's Lozenges.
Deering's Drops.
Delescot's Myrtle Opiate.
De Velnos' Pills.
,, Syrup.
Dicey and Co.'s Bathing Spirits.
Dickenson's Cephalic Drops.
,, Red Drops for Convulsions.
,, Drops for Fits.
Dixon's Antibilious Pills.
Donavan's American Vegetable Syrup.
Doranstorff's Opodeldoc.
Dutch Drops.
Earl's Remedy for the Hooping Cough.
Eau de Cologne. *Note.*—The payment of Stamp Duty is not now insisted upon in this case, unless the perfume is held out or recommended as a medicine or medicament.
Eau Medicinale de Husson.
Edge's Chronic Embrocation.
,, Universal Cerate.
Edward's Ague Tincture.
,, Nipple Ointment.
Elixir of Longevity, or Swedish Preservative.
Ellis's Aperient Pills.
Essence Kayou Pouti.
Falck's Cerate.
,, Universal Pills.
Felton's Mucilage of Marsh Mallows.
Findon's Drops.
Fisher's Golden Snuff.
Flexney's Wart Dissolvent.
Fogoni's Tincture.
Ford's Balsam of Horehound.
Foredyce's Cooling Opening Pills.
Foreign Medicines of all kinds, except Drugs. *Note.*—Foreign medicines are now dealt with, as regards payment of Stamp Duty, upon the same footing as other medicinal articles.
Fothergill's Pectoral Pills.
,, Restorative.
Fraunce's Elixir.
Freake's Tincture of Bark.
Freeman's Bathing Spirits.
,, Eye Water.
,, Gutta Salutaris.
Friar's Balsam.
Friend to Man.
Frith's Antibilious Elixir.
Fry's Worm Pills.
Gall's Antibilious Pills.
Gamble's Aromatic Snuff.
,, Sanative Tea.
Garaveni's Styptic.
Gardener's Ointment.
,, Pills.
German Corn Plaister or Salve.
Gifford's Pills.
Gilbert's Roseate Lotion.
Glasse's Magnesia.
Godbold's Balsam.
Godfrey's Cordial. *Note.*—The sale of this preparation unstamped is not now interfered with when the medicine is sold without a descriptive label, but the use of a slip-label describing it as "Godfrey's Cordial, or "Carminative Cordial (Godfrey)" incurs liability to Stamp Duty.
Godfrey's Rose Lozenges.
Gordon's Pills.
Gould's Powders and Lotion.
Gowland's Lotion.
Grand Specific or Infallible Antidote to Consumptions.
Grant's Drops.
,, Lisbon Tonic Pills.
Green's Honey Lozenges.
,, Oil, or Infallible Oil.
,, Toothache Pills.
Greenhough's Tincture.
,, Tolu Lozenges.
Grey's Lozenges.
,, Tooth Powder.
Griffin's Asthmatic Tincture.
Grubb's Fryars Drops.
Guest's Lotion.
,, Pills.
,, Powder.
,, Tooth Powder.
,, Welcome Guest.
Haarlam's Drops.
Hadley's Convulsion Powders.
Hallam's Anima of Quassia.
,, Antibilious Pills.
,, Quassia Do.
Hamilton's Asthmatic Effluvia.
,, Cinnamon Drops.
,, Corn Salve.
,, Patent Mineral Water.
,, Vegetable Balsamic Tincture.
Hannay's Wash.
Harrison's Pile Lozenges.
Harvey's Anti-Venereal Pills
,, Grand Restorative Drops.
Hatfield's Tincture.
Hayman's Maredant's Drops.
Hayward's Stomachic Lozenges.
,, Anti-Acid Do.
,, Samaritan Water.
Hemet's Essence of Pearl.
,, Pearl Dentifrice.
Heming's Pine Bud Lozenges.
Henry's Aromatic Spirits of Vinegar.
Henry's Magnesia. *Note.*—Fluid magnesia, though sold as a proprietary article, was exempted by the repeal of the charge upon artificial mineral waters.
Hewitt's Analambanic Pills.
Hickman's Pills.
Hill's Balsam of Honey.
,, Bardana Drops.
,, Canada Balsam.
,, Essence of Water Dock.
,, Gout Essence.
,, Tincture of Centaury.
,, ,, ,, Sage.
,, Valerian.
Hinde's Powders.
,, Drops.
Hodson's Aromatic Nervine Tea.
,, Imperial Oil.
,, Persian Restorative.
,, Syrup.
Holdsworth's Lozenges.
Hollingshead's Balsam.
Hooper's Female Pills.
Hooping Cough Drops.
Hope's Hectic Pills.
Howell's Powders for Epilepsy.
Hudson's Tablets for the Worms.
Hungary Balsam for the Stone and Gravel.
Hunt's Family Pills.
Hunter's Elixir.
,, Pills.
,, Restorative.
Jackson's Asthmatic Candy.
,, Corn Salve.
,, Ointment.
,, Tincture.
Jacobson's Cough Drops.
James's Analeptic Pills.
,, Antibilious Pills.
James's Fever Powder.
,, Medicine for the Dropsy.
,, Tin Powder for the Worms.
Jebb's, Sir Richard, Elixir.
,, ,, ,, Pills.
Jenkins's Salve.
Jesuits' Drops.
Imperial Anodyne Opodeldoc.
Infallible Restorative.
Inglis's Scots Pills.
Johnson's Golden Ointment for the Eyes.
Johnston's Essence of Horehound.
Johntenocco's Tooth Powder.
Jones's Rheumatic Tincture.
Irvine's Fruit Lozenges.
Juniper's Essence of Penny Royal.
,, ,, ,, Peppermint.
Kemp's Gangrene Ointment.
Kennedy's Corn Salve or Plaister.
Keyser's Pills.
Knight's Pills.
Lamert's Balsam.
Lancaster Black Drop.
Leake's Cerate.
,, Chilblain Water.
,, Pills.
,, Purifying Drops.
Leathe's Lotion.
Le Cour's Imperial Oil.
Lee's Lozenges.
Lewis's Salve.
,, Specific Pills.
,, Tincture of Angustura Bark.
Liquid Shell for the Stone and Gravel
Lobb's Stomachic Tincture.
Lockyer's Pills.
Lord's Corn Salve or Plaister.
Lorraine's Consumptive Pills.
Lowrie's Eye Water.
Lowther's Drops.
,, Nervous Powders.
Lozenges, Aniseed.
,, Benzoin.
,, Camomile.
,, Ginger.
,, Horehound.
,, Ipecacuanha.
,, Patirosa.
,, Peppermint.
,, Poppy.
,, Rose.
,, Roseated Liquorice.
,, Specific.
,, Spermaceti.
,, Tolu.
Lozenges, Tolu. *Note.*—Lozenges and other articles of confectionery are now exempted from liability unless they are sold as medicines, or as beneficial for the prevention, cure, or relief of human ailments.
Lucas's Pure Drops of Life.
Luzatte's British Pills.
Lygnum's Antiscorbutic Drops.
,, Lotion.
,, Pills.
Lynch's Embrocation.
Madden's Vegetable Essence.
Magnesia Tablets. *Note.*—Liability is not now incurred if the tablets consist of magnesia alone, without any admixture.
Manne's Cough Medicine.
Mapson's Sanative Salve.
Marshall's Cerate.
,, Wart Dissolvent.
,, Heal-all.
Mason's Ointment.
Matthew's or Matthews's Alterative Medicine
,, Chymical Tincture.
,, Remedy for Curing Fistula and Piles without Cutting or Pain.
,, Samaritan Restorative.
Mayersbach's Balsamic Pills.
,, Mixture.
,, Restorative Powders.
Medley's Aromatic Herb Snuff.
Metallic Tractors.
Military Drops.
Millman's Itch Ointment.
Mollineaux's Ointment.
Monsey's Rheumatic Powders.
Nailor's Corn Ointment.
Newton's Restorative Tooth Powder.
Norman's Syrup.
Norris's Chalybeate Pills.
,, Drops.
,, Tonic Essence.
Norton's Maredant's Drops.
Odontalgic Elixir for Toothache.
Oliver's Remedy for Consumption.
Oliverian Ointment for the Piles.
Orme's Medicine.
Ormskirk Medicine for the Bite of a Mad Dog.
Oxley's Essence of Jamaica Ginger.
.. Stomachic Tincture.
Palmer's Laxative Pills.
Paraguay Lotion.
Paris Ointment.
Paschall's Teething Remedy.
Pectoral Essence of Coltsfoot.
Perkins's Metallic Tractors.
Perrin's Balsam of Lungwort.
,, Antibilious or Cough Pills.
,, Pile Ointment.
,, Powder for the Hooping Cough.
Perry's Essence.
Peter's Pills.
,, Tincture.
Pidding's Balsam of Liquorice.
Pike's Ointment.
Pomade Divine.
,, Royal.
Potter's Pills.
Powell's Camphor Liniment
,, Eye Salve.
Price's Breast Salve.
Prickett's Styptic.
Prince's Russia Oil.
Pullen's Antiscorbutic Pills.
,, Purging Pills.
Purland's Expectorating Pills.
Pyrmont Tablets.
Radcliffe's Purging Elixir.
,, Rheumatic Tincture.
Randall's Essence of Ginger.
Refined British Oil.
Relfe's Nipple Ointment.
Richardson's British Corn Salve or Plaister.
Riga Balsam.
Robberd's Cough Drops.
Robert's Worm Sugar Plums.
Robertson's Vegetable Julep.
Roche's Embrocation.
Roe's English Coffee for Nervous Disorders.
Rogers' Antibilious Elixir.
,, Antiscorbutic Pills.
Rook's Balsam.
Rose Tablets.
Ruspini's Styptic.
,, Tincture.
,, Tincture for the Tooth Ache.
,, Tooth Powder.
Ryan's Essence of Coltsfoot.
Rymer's Cordiac and Nervous Tincture.
,, Detergent Pills.
,, Essence of Garlick.
,, Pectoral Medicine.
,, Tonic Pills.
Salmon's Guttæ Vitæ.
Savage's Oil.
Saville's Ointment.
Schnid's Liquid Dentifrice.
Schult's Vegetable Acid Air.
Scot's Gout Pills.
Senate's Aromatic Steel Lozenges, or Lozenges of Steel.
Severne's Worm Tea.
,, Ague Cakes.
Sharpe's Hepatic Pills.
Sharp's Drops for Cancers.
Shaw's Sovereign Itch Ointment.
Shee's Specific Drops.
,, Pills.
,, Preventive Lotion.
Sibley's Lunar Tincture.
,, Solar Do.
Simson's Infallible Æthereal Tincture.
Singleton's Golden Ointment.
Sloane's, Sir Hans, Pills.
Smart's Tincture of Cascarilla Bark.
Smellome's Eye Salve.
Smith's Antibilious Pills.
,, Antihectic Balsam.
,, Cooling Opening Pills.
,, Drops.
,, Purifying Pills.
,, Restorative Medicated Wine.

Smyth's Drops.
,, Restorative.
Solander's Sanative Tea.
Soley's Essence of Squills.
Solomon's Abstergent.
,, Anti-Impetigines.
,, Balm of Gilead.
Spain's Restorative Oil.
Speediman's Stomach Pills.
Specific Convulsion Drops.
,, for the Yellow Fever.
,, Remedy (by Wessels).
,, Tincture.
Spence's Dentifrice.
Spilsbury's Antiscorbutic Drops.
,, Compound Essence.
Spinluff's Aromatic Bilious Cordial
Squire's Elixir.
Squirrel's Drops.
,, Tonic Pills.
,, Powders.
Steer's Camomile Drops.
,, Camphorated Eye Water.
,, Convulsion Oil.
,, Nitre Drops.
,, Opodeldoc.
,, Paregoric Lozenges.
,, Purging Elixir.
,, Solution of Myrrh.
Sterne's Balsamic Æther.
,, Stomachic Tablets
,, Tincture of Gout Drops.
Storey's Worm Cakes.
Stoughton's Bitters.
,, Elixir.
Stringer's Essence of Myrrh.
,, Myrrh Dentifrice.
,, Paregoric Lozenges.
Swedish Preservative, or Elixir of Longevity.
Swinfen's Anti-Acid.
,, Electuary.
,, Ointment.
,, Worm Sugar Cakes.
Swiss Balsam.
Syrian Corn Pialster.
Tasteless Ague Drops.
,, Fever Drops.
Taylor's Antispasmodic Pills.
,, Remedy for Deafness.
,, Restorative Balsam for the Eyes.
Thomas's Tolu Essence.
Thompson's Ague Tincture.
,, Patent Medicinal Water.
Tickell's Æther.
Tincture for the Teeth and Gums. *Note.*—Now dealt with upon the same footing as toilet preparations, and not held to be dutiable unless held out or recommended for the prevention, cure, or relief of human ailments.
Tooley's Cordial.
Tooth Ache Fluid.
Tooth Powder, Asiatic.
,, ,, Paraguay.
,, ,, Royal.
Trotter's Asiatic Tooth Powder.
Trowbridge's Golden Pills.
Tuberosa Vitæ, or Chilblain Water.
†Turlington's Balsam.
Vandour's Nervous Pills.
Van Swieten's Gout Cordial.
Vegetable Embrocation.
Vital Balm.
Waite's Worm Nuts.
Walford's Pancreatic Powders.
Walker's Jesuits Drops.
,, Specific Remedy.
,, Stomachic Wine.
Walkley's Tooth Powder.
Waller's Ointment.
Walsh's Antipertussis.
,, Coltsfoot Lozenges.
,, Ginger Seeds.
,, Pills.
Ward's Dropsy Pills.
,, Essence for the Head Ache.
,, Liquid Sweat.
,, Paste.
,, Powders.
,, Red Pills.
,, Sack Drops.
,, Sweating Powder.
,, White Drops.
Ware's Asthmatic Drops.
Warren's Analeptic Powders.
,, British Tooth Powder.
Waters, videlicet—All artificial Mineral Waters, and all Waters impregnated with Soda or Mineral Alkali, or with Carbonic Acid Gas, and all Compositions, in a liquid or solid State, to be used for the Purpose of compounding or making any of the said Waters. *Note.*—This charge has been repealed, with the result that effervescing Salines or Waters are now held to be exempted from liability, unless they are used as vehicles for the administration of medicines other than Mineral Alkalies.
Webster's Diet Drink.
Welch's Female Pills.
Wheatley's Ointment.
,, Fluid.
Whitehead's Cerate.
,, Essence of Mustard.
,, ,, ,, Horehound.
,, Pills.
Whitteil's Black Drops.
Williams' Aperient Pills.
,, Essence of Benzoin, or Pulmonic Drops.
,, Spa Elixir, or Restorative Drops.
Willis's Asthmatic Pills.
Wilson's Balsam.
,, Opening Pills.
,, Powders.
Winch's Cough Drops.
Withers's Essence of Camomile.
Wray's Ague Pills.
York Medicinal Preventive Lotion.
Zimmerman's Stimulating Fluid.

WHEN LIABILITY TO MEDICINE STAMP DUTY IS INCURRED.

Preparations to be used or applied, externally or internally, as medicines or medicaments for the prevention, cure, or relief of any disorder or complaint incident to or in anywise affecting the human body are, in certain circumstances, liable to Medicine Stamp Duty in Great Britain if exposed to sale or sold in any packet, box, bottle, phial, or other inclosure. Unless so inclosed, medicines are not liable to duty, and may be sold loose unstamped.

Grounds of Liability to Duty.

1. Claims to any Occult Secret or Art for making or preparing the medicine, when the preparation is held out or recommended to the public for the prevention, cure, or relief of any human ailment. Such claims are made by—

(*a*) A statement that the method of preparing the medicine is a secret, or that the preparation is the specialty of any person, or that the maker possesses the original or sole recipe.

(*b*) The use of a name in the possessive case, or its equivalent, *e.g.*, Smith's Antibilious Pills, or Antibilious Pills (Smith) (see *P.J.*, November 21, 1903, pp. 737-8).

(*c*) A warning, or caution, to beware of spurious imitations, or that no other similar preparation is genuine.

2. Claims to any Exclusive Right or Title for making or preparing the medicine, when the preparation is held out or recommended as aforesaid. Such claims are made by—

(*d*) A statement that the compound is "prepared *only* by Smith."

(*e*) The use of a trade-mark appropriated to a particular medicine.

3. Making or Selling Patented Medicines, *i.e.*, preparations which are or have been the subject of Letters Patent in the United Kingdom.

4. Holding Out or Recommending Medicines by any public notice, as by a town-crier, or by an advertisement in a newspaper, poster, or placard in a conveyance; or by any written or printed papers or handbills, books, showcards, price-lists, etc.; or by any label or words, written or printed, affixed to or delivered with the inclosure containing the medicine.

(*f*) As Nostrums or Proprietary Medicines, *e.g.*, Smith's Pills, or Liver Pills (Smith).

(*g*) As Specifics or Remedies for the cure of some particular disorder.

(*h*) As beneficial to the prevention, cure, or relief of any distemper, malady, ailment, disorder, or complaint incident to or in anywise affecting the human body. Such a recommendation is held to be implied in the designations "Antibilious Pills," "Cough Mixture," and "Toothache Essence," but not in the names "Liver Pills," "Bronchial Mixture," and "Tooth Essence."

Articles Which Are Exempted.

1. Entire or Crude Drugs are not liable to Stamp Duty, however described or recommended, when sold by Chemists and Druggists; they may be dissolved in water, but if mixed with colouring matter, or any other substance, they become dutiable if held out or recommended to the public for the prevention, cure, or relief of any human ailment, unless they are brought within the scope of the special exemption in favour of Chemists and Druggists (see below, 8).

2. Mechanical Appliances, such as Trusses, Bandages, and Unmedicated Corn Rings, or Plasters.

3. Soaps, Medicated or Otherwise, intended to be used in the ordinary way for washing purposes only, and not intended or directed to be left upon the skin, like an ointment or salve.

4. Effervescing Salines or Waters, unless used as vehicles for the administration of medicines other than Mineral Alkalies.

5. Dutiable Medicines supplied to chemists and druggists for use in dispensing only, as *part* of a medical prescription.

6. Veterinary Medicines, except when also recommended for use by human beings.

7. Foods, Hair Washes, Perfumes, Skin Pastes, Toilet Preparations, Tooth Powders, Tooth Stoppings, etc., when not held out or recommended for the prevention, cure, or relief of human ailments. The following are not regarded as ailments, and a claim to Medicine Stamp Duty does not arise if any preparation is held out or recommended for their prevention, cure, or relief:—Abrasions, baldness, blemishes, chafes, chapped hands or lips, dandruff, freckles, husky voice, impure breath, insect bites or stings, languor, loss of appetite, mental depression, nits, roughness of the skin or voice, scurf, smelling feet, stomach weakness, sunburn, tan, tender feet, tickling of the throat, want of nerve power.

8. Preparations Known, Admitted, and Approved of in the prevention, cure, or relief of human ailments, when sold by Chemists and Druggists with an adequate disclosure of their composition. The disclosure may be made by stating the names of all the active medicinal ingredients of the medicine upon the label, or by making it in accordance with a Formula in the British Pharmacopœia, the 'Pharmaceutical Journal Formulary,' or some other well-known book of reference, and indicating that fact upon the label.

PERFUME BLENDING AND SOAP-MAKING.

A VISIT TO HOMERTON.

It has been said that one of the first symptoms of civilisation makes itself apparent by a desire for perfumery; and it is doubtless true that as soon as civilisation overtakes a nation perfumes and soaps are among the first articles for which a demand is created. It would appear that this desire for perfumes, however, is not confined to civilised lands, and, in fact, in some cases it seems to precede the advance of civilisation. The chiefs of West African tribes, it appears, have already evinced a great liking for these things, and more than one of these rude barbarians have sent orders for odours direct to the Crown Perfumery Company. These orders, unaccompanied by cheques, however, are almost invariably worded alike and ask for "a full range of samples"; from this it would appear as though they were already acquiring civilised habits, even though they cling to the heathen garb. If then the fame of Crown Perfumery perfumes has reached even the ears or rather the noses of the chiefs of savage tribes, it is not surprising that these articles are so popular in the boudoirs of Belgravia. The demand for these perfumes is universal, and to obtain a few details of the manner in which the firm copes with this demand a Journal representative recently paid a visit to Homerton.

The Crown Perfumery Company was founded in 1872, by Mr. W. S. Thomson, and it will be unnecessary to tell readers of the *Pharmaceutical Journal* of the very high quality of the goods manufactured by this firm. The works at Homerton cover a large area, and find employment for hundreds of workpeople. It does not come within the province of the columns of this Journal to describe the departments in which the various operations of bottling and packing are carried on. Nor is it necessary to give details of the factories in which the labels are printed, and the boxes and fancy caskets are manufactured. Suffice it to say that everything is done on a very large and up-to-date scale. It will be interesting, however, to go through the processes followed

In the Preparation of Perfumes

and fine soaps. There are, of course, several methods of combining, in the form of "extracts," the various odorous principles which enter into the composition of perfumes. For the most part, the odorous principles of the flowers are abstracted in the South of France, and are sent over here in the form of pomades. But this is only one of the various sources from which perfumes are obtained. Essential oils, odorous gums and resins, animal matter are among the other substances employed in the blending and mixing of perfumes.

When the odours are made from the first-mentioned source, the pomade is placed, together with the requisite quantity of spirit of wine, in a centrifugal machine technically known as a *batteuse*. The mixture remains here for a period varying from two or three days to two or three weeks, according to the nature of the pomade. During the whole of this time the revolving fans inside the machine are kept in motion, and the constant heating and stirring cause not only the soluble essences contained in the pomade to become intimately incorporated with the spirit, but the insoluble portion becomes so minutely divided and distributed in the spirit as to be in a state of practically uniform suspension. This solution is then removed to the refrigerating chamber, where it remains until the whole of the insoluble fat is deposited. The undissolved portion is then separated by filtration—still in the cold chamber—and the filtrate is then ready for the perfumers' laboratory.

The *batteuse* s also employed to extract the odorific principles from flowers, from leaves, and from other substances. The resulting tinctures, or infusions, as they are termed by practical perfumers, form the base of a wide range of perfumes. Gums, resins, essences, and animal substances are treated with alcohol, either by solution or maceration.

The great art in the preparation of perfumes, however, is in the blending, and those exquisite blends, for which the Crown Perfumery Company is so justly noted, speak volumes for the chemist in charge of their laboratory. The general chemical principles involved in the manufacture of soap are already familiar to readers of the Journal, but a brief outline of the manner in which this theory is put into practice at the Crown Perfumery factory is of particular interest.

The various articles required for

The Manufacture of Fine Toilet Soap

are run from storage tanks and barrels into large vats in which the mixture of fat or oils and the saponifying agent is boiled for many hours. During the boiling process the mixture is constantly stirred, and when chemical action is complete, heat is removed, and the mass allowed to cool until it reaches a semi-solid condition. The semi-liquid soap is then poured into huge moulds, and when it becomes cold and hard is cut into bars. These bars of soap are placed on racks in a drying chamber, in which a temperature of about 110° F. is maintained, and they remain there until, roughly speaking, the soap has lost about 25 per cent. of its weight by reason of the evaporation of moisture, the soap is then chipped into small pieces, which are placed on trays, and again subjected to a current of warm air.

When these chips are adequately dried they are ready for the milling process. The mills consist of large solid granite rollers, through which the soap is passed three times. This has the effect of making the soap of even consistency, and after the third operation the soap appears in the form of thin ribbons. This is then placed into mixing machines, and the perfume is added and thoroughly incorporated with the soap. The mixed mass is then transferred to a pressing apparatus, and by means of this machine the soap is pressed into long rolls, which are cut off with a knife into the required size. The small blocks are then stamped by machinery. The rough tablets are then scraped and polished, and again placed in the drying-room, where they remain until sufficiently dry for the packing room.

This, very briefly, is a general outline of the method of manufacture employed by the Crown Perfumery Company at their works at Homerton. The processes in the case of some soaps are modified and sometimes supplemented, as in the case of their transparent soap, for which article there is a large and increasing sale. After going through a modification of the process just described, the unfinished material is dissolved in spirit placed in large stills, by means of which the spirit is removed. The residue remaining in the still is then transferred to long cylindrical tins, and allowed to solidify. Then follow cutting, stamping, and drying, as with the other varieties.

The finished products of the Crown Perfumery Company, and the dainty and attractive manner in which they are packed, are known to every chemist, and require no describing here, whilst such products as Crown Lavender Salts and Crab Apple Blossom Perfume have become famous all over the world.

Label Varnish.

Mastic, 6; clove oil, 1; alcohol (methylated), 10; benzol, 8. Digest until solution is effected. The labels are first painted with the varnish and dried, then coated with collodion, previously diluted with half its volume of ether, and, finally, when dry, again coated with a solution of gelatin, 1, in hot water, 4. *Canad. Drugg.*, **37**, 65.

LEGAL INTELLIGENCE.

High Court of Justice—Chancery Division.

The "Tabloid" Action.

Wellcome v. Thompson and Capper.

On Friday, November 20, 1903, the hearing of this case began before Mr. Justice Byrne, together with the motion of the defendants, in the matter of the Patents, Designs, and Trade Marks Acts, 1883-1888.

Plaintiffs asked for an injunction to restrain the defendants from "in any manner passing off or attempting to pass off, any preparation not of the manufacture of the plaintiffs as and for a preparation of the plaintiffs; also from selling or supplying any such preparation as aforesaid in response to orders for tabloid products as a preparation of Burroughs, Wellcome, and Co.; and from infringing the plaintiffs' registered trade marks." Damages were also claimed. The defendants asked in a counter-action that the plaintiffs' trade marks should be struck off from the Register of Trade Marks, on the ground that "Tabloid" was a descriptive word which should never have been registered.

Mr. Fletcher Moulton, K.C., Mr. Ralph Neville, K.C., Mr. Levett, K.C., Mr. Sebastian, and Mr. Kerly were the counsel retained by the plaintiff. The defendants were represented by Mr. A. J. Walter and Mr. Hunter Gray. Mr. Moulton, however, did not attend before Wednesday.

The plaintiff's case was opened by Mr. Neville, who said that his client traded under the style of Burroughs Wellcome and Co., at Snow Hill Buildings, Holborn Viaduct, and he was the only surviving partner of the original firm. The action was brought against the firm of Thompson and Capper, who for some years had carried on business at Manchester and Liverpool, and the claim was in respect of the alleged passing off of goods not of the plaintiff's manufacture as and for the goods of the plaintiff. In the year 1884 the plaintiff desired to adopt an original and distinctive trade mark and trade designation for his manufactures so as effectively to distinguish them from the goods of other manufacturers, and for this purpose he invented and adopted the word "Tabloid," which had never existed before, and was absolutely new and unknown. This word he registered in March, 1884 (No. 36,154) in Class 3, in respect of chemical substances, and in January, 1885, he registered the word "Tabloids" in a frame (No. 42,378) for the same class of goods in Class 3. Both had been renewed, and now stood in his name. Then, in March, 1884, he registered "Tabloid" as his trade mark (36,155) in Class 42, for preparations of food for human use, and in January, 1885, he registered "Tabloids" in a frame in respect of the same sort of goods in Class 42. From the date of his first registration he had used the word extensively as his distinctive trade mark in respect of a variety of goods he manufactured, on bottles and other receptacles for goods, and in an extensive system of advertising, and also extensively in connection with goods exported. The word had thus become familiar to the trade and to the medical profession, and also to the public, as meaning goods made by the plaintiff and by no one else. The defendants, as he had said, had shops in Manchester and Liverpool, and they had been in the habit of selling preparations not of the plaintiff's manufacture in response to orders for tabloids or tabloid preparations, even when the name Burroughs Wellcome and Co., or the initials B. W. and Co., were expressly mentioned. In no single instance of purchase of which the plaintiff had evidence had the goods so supplied been of his manufacture. Counsel went on to say that the case set up by the defendants was that "Tabloid" was not a word which could properly be registered as a trade mark, as the first syllable signified "table" and the last signified "form." He then cited cases, such as the Mazawattee, Bovril, and Solio cases, which turned upon the distinctions between words allowed and disallowed as trade marks. It was never intended, he said, that the Act of 1883 should hamper a man in giving his goods a name, but only that it should safeguard existing rights. The registration of "Tabloid" put no possible restriction on the sale of tablets, which were freely made and sold by other firms. "Oid" was not a term of invariable meaning, and he did not believe that it had in this case any reference to form or to the Greek word *éidos*. He claimed (1) that the word was a good trade mark, (2) that, even if it were not so originally, it had come to have the meaning of referring only to plaintiff's products, and (3) that he must succeed as to the passing off of other goods, because they had distinct evidence of this in orders specifying by name or initials the tabloids of Messrs. Burroughs Wellcome and Co.

Mr. H. S. Wellcome was then called and examined in support of his case. He said he had no partner now. Mr. Burroughs died in 1895. Plaintiff made a specialty of compressed medicines, which were then in the market, but he invented machinery to secure extreme accuracy of division, and was thus able to divide a grain equally into many hundred parts. He referred to the enormous business which the firm had done, and said that he had himself invented the word "Tabloid." He endeavoured to find a word which was euphonious and easy to remember. He had not found that the word existed anywhere prior to the date of registration. He produced a variety of tabloid medicine chests, cases, etc., including the belt supplied to Nansen and a chest supplied to the hospital ship "Maine." Recently the word "Tabloid" had been used with inverted commas in his price-lists.

Cross-examined: At one time he had claimed rights in "tablets," but they had allowed that claim to drop. He would not admit that tabloid was in any sense a descriptive title of a form of medicament; it referred to Burroughs Wellcome and Co.'s products only. The 'Century Dictionary' and other books had made a mistake in assuming that the word was an English word, and the various authors mentioned had in almost every instance, at his request, undertaken to alter their definitions to meet his wishes.

Mr. Walter quoted a number of advertisements of the firm, in some of which it was stated that tabloids (of zymine, etc.) were the most convenient form for administering the drug. He said that he would produce over a hundred written orders for tabloids of drugs which the plaintiff firm did not make, such as phospherine, *Pareira brava*, picric acid (3), etc. What was the chemist to do in such cases.

Mr. Wellcome said that the chemist should consult the prescriber or explain the circumstances to the patient.

Mr. Walter quoted an article from the *Academy and Literature*, entitled "Wisdom in Tabloids."

Witness said that he had not registered the word in the "wisdom" class of trade marks. Again, he was not responsible for the use made of the word by *Punch*, which had spoken of "grand opera in tabloids," or by Dr. Butler, who had used the phrase "spiritual indigestion tabloids" in a religious book.

Mr. Walter proceeded to quote from a large number of periodicals, novels, and dictionaries, in which the word "tabloid" seemed to be used in a descriptive sense. One of the quotations was from a novel by Mr. Frankfort Moore, entitled "They call it love," in which "time-saving tabloids" were referred to. In Mr. Ince's 'Latin Grammar of Pharmacy' *tabella compressa* was given in the vocabulary as Latin for "tabloid."

Witness said that in every case the use of the word as an ordinary English word was either a mistake—which he had in many instances caused to be corrected—or a gratuitous advertisement for his firm's goods. He further stated that a tabloid was not necessarily of any particular shape; they made tabloids in a great many different shapes.

Second Day.

On Saturday, November 21, the cross-examination of Mr. Wellcome was continued by Mr. Walter, who quoted from the *Daily Mirror*, where a flat had been spoken of as a "house-tabloid," and the staircase of a flat as a "bottle of tabloids." The *Daily Express* had spoken of "modern art in tabloids." Was it not the fact that before the mistake was pointed out all the authors and writers referred to had confused tabloids and tablets?

Mr. Wellcome replied in the negative.

Mr. Justice Byrne referred to Murray's 'Oxford Dictionary,' and quoted some of the various chemical, botanical, mathematical, and other terms, ending with the suffix "oid." Such were adenoid, albuminoid, alkaloid, anthropoid, asteroid, celluloid, colloid, crystalloid, cycloid, deltoid, ellipsoid, rhomboid, etc. Murray had not yet reached the letter "t."

Mr. Walter said that the Greek *eidos* was given as the derivation of the suffix, which was, in every case, descriptive of form. He proceeded to ask why plaintiff had registered "tabloids" as well as tabloid. (Trade Marks, 42,378 and 42,379, March, 1885).

Mr. Wellcome said that he could not recall the reason, except that it had reference to divided doses. He was unwilling to agree with Mr. Walter that "tabloids" referred to more than one pellet, while "tabloid" referred to one only. Asked if the process of tablet-making was not a perfectly well-known laboratory method, he denied that his firm's method of obtaining extreme accuracy of dosage was well known to other firms. He would express no opinion on the merits of the tablets made by Messrs. Allen and Hanburys, Limited, or by Messrs. Parke, Davis, although he knew that they made tablets.

Mr. Walter quoted a letter from Mr. T. Lauder Brunton (now Sir Thomas Lauder Brunton) in the *Pharmaceutical Journal* of March 9, 1895, with reference to another letter which had appeared in that Journal referring to the alleged improper use of the word "tabloid."

In answer to further questions, Mr. Wellcome said that Thompson and Capper were fairly good customers of his firm; it was, so far as he knew, the fact that the writ had been issued without any correspondence or communication with the defendants. He had instructed that tests should be made. He would not accept Mr. Walter's suggestion that "traps" had been set to catch the defendants. With reference to the tablets supplied, he did not know, he said, whether, in any single instance, the word "tabloid" appeared on the label of Messrs. Thompson and Capper.

Mr. Neville, K.C., said that he would admit that in no case was the word "tabloid" on defendant's label with reference to the sales complained of.

Re-examined by Mr. Neville, Mr. Wellcome said that before giving instructions for the purchases to be made, he had received information that "substitution" was being practised by defendants. There was much substitution practised by chemists. Tabloids were often dispensed with different labels, on which the name of his firm did not appear. All the authors with whom he had communicated had given satisfactory assurances with regard to the future use of the word "tabloid."

Reference was then made to a letter signed by "Galen," which appeared in the *Pharmaceutical Journal* on February 9, 1895. The writer spoke of "tabloid" as a coined word—a hybrid of Latin and Greek.

Witness then assented to Mr. Neville's suggestion that one of the pellets made by his firm was a "tabloid," and that two or more were "tabloids."

Evidence of purchases was then taken, eleven clerks—both male and female—in the employ of a firm of Manchester solicitors being called to prove the purchase from defendants of bottles labelled "tablets" or "pellets," when "tabloids" had been asked for verbally, by written orders, or by prescription. In two or three instances the name "B. W. and Co." had been written on the prescription.

Winifred B. Sykes, the first witness, took a prescription in September, 1902, for "Tabloids Potassii Chloratis, B. W. and Co.," and also a written order for voice-tabloids. With reference to the latter, she had said, in reply to a question, that she specially required Burroughs, Wellcome's tabloids, and, as she admitted in cross-examination, she had received them. The bottle supplied from the prescription was not labelled "tabloid," and was not one of the plaintiff's bottles.

T. Smith, the next witness, said that he had asked verbally at one of defendant's shops for cascara sagrada tabloids. The bottle was produced, and was not labelled "tabloids." He had stumbled over the pronunciation of the word "sagrada," but said "tabloids" distinctly. In cross-examination he said that he purposely stumbled over the word "sagrada." He had been told the reason for the purchase being required.

There were few remarkable features about the other witnesses' evidence, but some amusement was caused by the admission of one youth that he had shown a written order for "cascara tabloids," but had placed his thumb over the word "tabloids." He subsequently explained that when he said "over" he meant "opposite to." One witness remarked that he had a discussion with Thompson and Capper's assistant with reference to the merits of india-rubber sponges Another witness said that he asked if the tabloids supplied were Burroughs and Wellcome's, and the assistant replied that they were. In every instance the packets had been wrapped up before being given to the customer. Where a prescription had been taken, it appeared that the customer had been asked to call again in one hour. In reply to the Judge, Mr. Walter remarked, with a smile, that it was due to the usual mystery which attached to a prescription. At the conclusion of the day's proceedings the Judge said he hoped that the business of the Manchester solicitors might now be resumed.

Third Day.

Monday, November 23, was occupied in the examination of over thirty witnesses, all of whom were closely connected with medicine or pharmacy. Practically every one of these witnesses said that he always understood "tabloid" to be a non-descriptive word, except that it referred to the goods of the plaintiff, and to those goods only. In no case had a witness heard of the word before it was made familiar by Messrs. Burroughs, Wellcome, and Co. The medical witnesses included Sir F. Laking, Sir Patrick Manson, Sir Anderson Critchett, Dr. A. P. Luff, Dr. Suckling, Dr. Cantlie, Dr. MacAlister, Dr. Havilland Hall, Mr. Creasey, Dr. Seton, Dr. Walshe (of Dublin), Dr. Harvey, and Mr. Ernest Clark. The pharmacists who were called were very numerous, evidence being given by Messrs. G. C. Druce, R. McAdam, Burrows, Peet, J. Foster, H. Wilson (of Southampton),

S. R. Atkins, J. H. Wilson (of Harrogate), A. C. Wootton, W. P. Want, Waring, F. A. Rogers, C. B. Allen, Horsey, Drs. Attfield and Paul, Mr. T. Barclay (of Messrs. Barclay and Sons, Limited), Mr. Lionel Newbery (of Messrs. F. Newbery and Sons), and Mr. Woodgate (manager of Messrs. W. Edwards and Sons).

Dr. Attfield said that "tabloid" conveyed to his mind "a small piece of matter" associated with Messrs. Burroughs, Wellcome, and Co.

Several of the medical men stated that they frequently prescribed tabloids, sometimes adding on the prescription the initials "B. W. and Co." The practice of prescribing tabloids was described by Mr. Druce as "unfortunately, far too common." Asked about the initials "B. W. and Co." on the prescription, Mr. Druce said that medical men have acquired the habit of putting down initials after the name of nearly every article which they prescribe.

Mr. Peet, of Liverpool, said that no respectable chemist would substitute other goods when tabloids were asked for, but, "unfortunately, there are members of our body who are not respectable." He had occasionally received orders for tabloids not listed by Burroughs, Wellcome, and Co., but he thought that the public was too wide awake not to know that tabloids and tablets were different things.

Mr. John Foster caused some amusement by saying that he had been asked for "Burroughs and Watts'" tabloids.

Mr. H. Wilson, Mr. J. H. Wilson, and Mr. Rogers said that they had been asked very occasionally for tabloids not listed by Burroughs, Wellcome, and Co.

Dr. Seton said that in his mind the word "tabloid," besides being associated with plaintiffs' products, conveyed a definite idea of form. Nearly all the witnesses, however, held a different opinion.

Mr. Newbery, questioned by Mr. Walter as to a reference to the "tabloid" trade-mark in his firm's price-lists, said that the notice in question was inserted at the wish of Messrs. Burroughs, Wellcome, and Co.

Dr. Cantlie said that sometimes, in order that there might be no delay, he wrote on his prescriptions "tabloids or tablets."

Mr. Woodgate said that most chemists, when ordering tabloids from his firm, used the initials "B. W. and Co."

Mr. Allen did not agree with some of the other witnesses that in no circumstances was it justifiable for the pharmacist to supply other goods when tabloids were ordered by an evident mistake in a medical man's prescription. If, for example, he received a prescription for "taka-diastase tabloids," he should use the discretion which a dispensing chemist had a right to exercise, and should assume the main object of the doctor to be that the patient should have "taka-diastase." He should, in such a case, take it upon himself to supply "taka-diastase" *tablets*, without consulting the prescriber. Mr. Allen was the only witness who was not cross-examined.

Monday's witnesses agreed that "tabloid" was always understood, in medical and pharmaceutical circles, to refer to plaintiffs' goods, and those only.

Fourth Day.

Nearly the whole of Tuesday, November 24, was occupied with the hearing of further evidence for the plaintiff. The medical witnesses called included Sir William Thomson (of Ireland), Sir J. Crichton Browne, F.R.S., Sir T. R. Fraser (of Edinburgh), Sir Douglas Powell, Dr. Allen (of Brighton), Dr. Whitehead, Dr. Edward Treves (of Brighton), and Dr. Benjamin Harrison. Among the wholesale or dispensing chemists called were Mr. Leonard Johnson (of the Army and Navy Stores), Mr. Albert Blackburn, Mr. Thomas Tyrer, Mr. Ricketts (manufacturer of proprietary medicines), Mr. Rogers (Southsea), Mr. David Morgan, Mr. Reeve, Mr. Jules Fuerst, Mr. J. F. Harrington, Mr. Guy, Mr. Davis, and Mr. John Jackson (Bradford), while other witnesses included various persons connected with the photographic business. All gave very similar evidence to that given by the witnesses on the previous day. Mr. Walter was able to obtain from some of the chemists the admission that occasionally "tabloids" were ordered of drugs not in the plaintiffs' price-lists. The Judge asked more than once whether Mr. Neville could not cut short this part of the evidence, and eventually the suggestion was adopted, several medical men and chemists who were prepared to give evidence not being called.

Mr. C. J. S. Thompson, who is in the employ of Messrs. Burroughs, Wellcome, and Co., produced a long list of dictionaries which did not contain the word "tabloid."

Mr. Walter, however, in cross-examination, elicited the fact that several dictionaries since 1889 had contained the word.

The Judge remarked that the first reference to the word seemed to be in Remington's 'Practice of Pharmacy,' 1888, except for a reference in the 1885 edition of Martindale's 'Extra Pharmacopœia.'

Mr. Levett, K.C., then summarised the evidence for the plaintiff, and stated that he could have called many other expert witnesses if the Judge had thought it necessary. At the conclusion of Mr. Levett's speech the Court rose.

Fifth Day,

On Wednesday Mr. A. J. Walter proceeded to open the case for the defendants. He said the case presented various aspects. The plaintiff said he owned certain trade marks, and that these had been infringed. He said also that he had gained a trade reputation, and that the word "tabloid' meant goods of his manufacture. There was a motion by the defendants to rectify the Register by striking out the word tabloid. Counsel proposed to deal first with the registration question, secondly with the alleged passing off, and later on with the case made by the defendants in reply to the plaintiff's claim to have the exclusive use of the word tabloid. They needed to look to the Acts of 1883, Sec. 64, to see if the word was rightly upon the Register. The allowable word must either be the name of a particular firm or a distinctive mark, brand, etc., or a fancy word or words. That was the term of the section under which this word was registered. It was suggested that a word which had no previous existence was of necessity a fancy word, and therefore that the plaintiff was the first and true inventor of the word tabloid, and therefore that it was of necessity a fancy word within the meaning of the Act. The authorities, he said, were entirely opposed to such a contention. He would refer to the highest authority on this point. The termination "oid" had already been put forward as a novelty when the word "electroid" was claimed as a fancy word in the case of Hannay's Trade Mark in the Seventh Reports of Patent Cases before Mr. Justice Chitty. There it was argued that "electroid" was a fancy word, not a descriptive word and not a word in common use. Mr. Justice Chitty decided against that.

Having cited a number of cases, Mr. Walter said that, taking the whole of these, they had failed. This was a word registered by the plaintiff applied to goods hitherto sold by them as tablets. It was properly descriptive, and was not a fancy word.

His Lordship: They apply it to a particular variety of drugs.

Mr. Walter said that it was applied to particular goods which had been supplied by the same maker under the name of tablets.

Under the circumstances he asked his Lordship to say that that was a trespass against the Act, and could not be registered. It was a compound word having a definite meaning, and only meant "in the nature of." There was no other meaning, and the word was distinctly descriptive. As to the evidence, he said there was no attempt to make a case for the trade mark. They said that the passing off was an infringement of the trade mark, but there was no evidence of the defendants, by using any label or description in writing, having used the word "tabloid." There had never been any attempt to prove the infringement of the trade mark. What was their case as to passing off? It was that the medical profession, the wholesale chemists and retail chemists, knew that the mark "Tabloid" meant the goods of Burroughs and Welcome. All their evidence was covered by that. Before showing that the plaintiffs had absolutely failed to come up to the proper standard, he would call attention to their own use of the word "tabloid." From the first they had used the word as a purely descriptive word. In concluding his address for the defendants, Mr. Walter submitted that the plaintiff had wholly failed to make out the case he had set up, and asked his Lordship to direct that the trade marks in question should be removed from the Register.

Mr. Charles K. Ransby, a qualified chemist in the employ of the defendants, at 51, Piccadilly, Manchester, said when he went to the firm twenty-five years ago, they were in the habit of selling tablet goods. There were a large number of articles made by Messrs. Thompson and Capper which were their own proprietary goods. Witness produced a large number of written orders from customers asking for tabloids. None of the goods mentioned in those orders were the goods of Burroughs and Wellcome. All the orders were within the last year or two, and many of them were from doctors. Witness's firm had been in the habit of purchasing goods from the plaintiffs, and they were usually purchased in bottles containing 500 tablets. These goods were retailed in small bottles containing twenty-five or fifty tablets with Messrs. Thompson and Capper's label, stating that the bottle contained compressed tablets. They also retailed some of Messrs. Burroughs and Wellcome's goods in the small original parcels as sold by them.

Mr. Walter: Except when retailing the goods of Burroughs and Wellcome in their original parcels, have you ever placed upon any goods in your shop the word "tabloid"?—Never.

And the use of the word "tabloid" upon these goods was the original label of Burroughs and Wellcome?—Yes, that is so.

Asked as to the purchases made by some of the plaintiffs' witnesses Mr. Ransby said he had made inquiries, but could not trace the alleged sales.

In cross-examination, he said that Poths were the manufacturers of the bottles, but he did not know they had been stopped from using "tabloid" in connection with their bottles because it was a trade mark. He knew that "tabloid" had been largely advertised and was recognised as plaintiffs' trade mark. His employers had given orders that when tabloids were ordered they were to serve the goods of the plaintiff. The great bulk of the stock of their tablets was tabloids made by Burroughs and Wellcome. In cases where he was certain that Burroughs and Wellcome's products could not be intended, he gave what he knew was intended, usually or frequently supplying Burroughs and Wellcome's tabloids in a bottle labelled "tablets," and with Thompson and Capper's name on it.

Asked if such a course of trading was calculated to lead to confusion, he said he thought not, as the confusion was already in the mind of the customer. The tabloids of Burroughs and Wellcome were bottled in the same way as the goods of other firms, and sold as tablets to prevent confusion. Had heard of firms offering their goods to be sold at a profit of 250 per cent., but he did not connect that with the substitution of one manufacturer's goods for those of another. They gave an order to the plaintiff's firm a few days before the issue of the writ. Some of Burroughs and Wellcome's goods in small bottles they sold with Burroughs and Wellcome's name "tabloid" upon them. Before the action, practically all the tablets they put up from the large bottles were the tabloids of Burroughs and Wellcome. Now they had alternatives. He was unable to say whether the contents of the bottle produced to him were "tablets" or "tabloids." The goods were kept in the same case, but the assistant would not mistake one from the other except by acccident.

In reply to his Lordship, witness said that goods might have got into the wrong case by mistake. There was nothing in the appearance of the bottles or the articles in them to distinguish one from the other. The assistants were told that those in a certain corner were not Burroughs and Wellcome's. There was no distinguishing mark on the bottles.

In further cross-examination, witness said that he did not know that twelve cases had been found in which tablets were served when tabloids were ordered. Those cases might be accidents. Allen and Hanburys, and Parke, Davis and Co. were both firms with a very high reputation.

Mr. John Rymer Young, chemist, Warrington, was the next witness, and said that the public used the words "tabloid" and "tablet" indiscriminately. He should use his discretion and send something different, if he knew that a doctor had made a mistake in ordering "tabloids." Asked in cross-examination with reference to his sending something other than what was ordered by the doctor, Mr. Young said that if chemists did not use their discretion in dispensing, the death-rate would rise considerably.

Sixth Day.

On Thursday, November 26, Dr. James Watson, of Edinburgh University, a homœopathic practitioner, and Dr. Reid gave evidence. They considered that "tabloid" was a descriptive term, and that it was used as such by the public, who did not know any difference between "tabloid" and tablet.

Mr. H. W. Kilby Pears, of Brighton, also gave evidence, and produced over 400 orders for "tabloids," all of which he considered to refer to his own tablets. Mr. Pears was cross-examined at considerable length by Mr. Neville. Mr. Pears said that his goods bore a profit of 250 per cent. to the chemist, but he did not think that exorbitant, nor did he consider that it encouraged or tempted chemists to substitute.

Mr. Michael Carteighe said that, although Messrs. Burroughs Wellcome and Co. had recently taken steps, by inserting advertisements in packages containing tabloids, to educate the public, he believed that the public did not even now discriminate between "tabloids" and "tablets." Nor did the rank and file of the medical profession, although the consulting physicians of the West End of London might know that "Tabloid" was the trade mark of the plaintiff. Out of 100 prescriptions dispensed at his pharmacy for tabloids, fifty bore the initials "B. W. and Co.," while forty-eight did not specify the maker, and in two Wyeths were mentioned by name. He had received orders for "tabloids" of goods not made by Messrs. Burroughs Wellcome and Co.

Cross-examined, Mr. Carteighe said that although he personally did not now take an active part in the routine work of his business, he was accustomed to meet medical men at clubs and in social life, and was familiar with their views on the subject.

Mr. A. L. Blain, pharmaceutical chemist, manager of the business of Messrs. Woolleys, Limited, at 69, Market Street, Manchester, produced four prescriptions for "tabloids" made by other firms. In one case "Oppenheimer" was specified, and, in another, "aspirin tabloids, 8 grains," were ordered. He, like Mr. Carteighe, said that when tabloids which were made by plaintiff were ordered, he should supply Messrs. Burroughs Wellcome and Co.'s goods.

Mr. T. F. Abraham (Liverpool) said that many years ago the plaintiff's firm threatened him with proceedings because he applied the word "tablets" to goods not of their manufacture. He produced nine prescriptions, all written by different doctors, for tabloids not made by plaintiff, and a written order for "castor-oil tabloids." Asked for a definition of tabloids, Mr. Abraham said that he considered that a tabloid was a small round compressed medicine, nearly flat, which was made practically without the use of any excipient.

Cross-examined: In his two shops he had eleven qualified assistants, who had instructions to find out what the customer wanted, where there was any doubt. If there was no doubt that Burroughs Wellcome and Co.'s tabloids were required, his assistants had orders to sell them. Asked with reference to his knowledge that "tabloid" was a trade mark, Mr. Abraham said that he knew they claimed it as such, and would not infringe it, although in his opinion the word should not be a registered trade mark. If he were crossing a road in front of a cabman, he should get out of the way, although he knew that he had a right to the use of the road.

Mr. J. Bain (Liverpool) said he was often asked for tabloids when the customers required articles not of Messrs. Burroughs Wellcome and Co.'s manufacture. His own ammoniated tincture of quinine tablets were frequently asked for as "tabloids," and he had also received orders for gelatin capsules under the same name. In one instance, he received a prescription in which bi-palatinoids were ordered, but the directions on the prescription ordered the patient to take one or two "tabloids" as required. Both medical men and private individuals were accustomed to use the words "tablets" and "tabloids" indiscriminately. He knew that the name "tabloids" was claimed as a trade mark, but the public did not.

Mr. F. Foster (Scarborough) also gave evidence to the effect that he was constantly receiving orders for "tabloids" when ordinary compressed tablets were required. The terms "tabloids" and "tablets" were used synonymously by medical men and the public generally. In cross-examination, witness said he remembered the attempt being made by Messrs. Burroughs Wellcome and Co., to restrict the use of the word "tablets," but the matter was not proceeded with.

Mr. R. H. Jones (London) said he was accustomed, some years ago, to call regularly upon some eight hundred medical men, 90 per cent. of whom were in the habit of ordering "tabloids," though they wanted articles prepared by the firm he represented. He considered that the term "tabloid" was a descriptive one, equivalent to tablet or *tabella.*

Mr. J. Fernie (London) confirmed the statements of the preceding witnesses, that the public did not, as a rule, mean the goods of Messrs. Burroughs Wellcome and Co., when they asked for "tabloids."

Mr. Walter then proceeded to make his closing speech, in the course of which he stated that the word "tabloid" had been used descriptively from the time it was introduced, and that it had only recently been used as the name of a brand.

Mr. Neville followed, but had not concluded when the Court rose.

The "Absorbine" Case.

On Wednesday, November 25, 1903, before Mr. Justice Kekewich, the action of Christy *v.* Tipper, which, it will be remembered, related to a veterinary preparation known as "Absorbine," was mentioned by Mr. Sebastian on behalf of the plaintiff. The learned counsel said that some days ago he applied to his Lordship to fix a day before which the hearing should not be taken. The plaintiff was an American, and would have to come over from the States to this country. He required a little time to arrange his business in America, and he (Mr. Sebastian) thought that if the hearing were fixed for December 14, the parties would be able to make all necessary arrangements.

Mr. Justice Kekewich pointed out that if the hearing stood over for so long a period, there was just a possibility that the action would not be disposed of before Christmas. Counsel must be prepared to take their chance of that.

Mr. Sebastian said they must do that.

Eventually it was arranged that the hearing should not take place before December 14, and that a summons relating to the same matter should not be disposed of at any earlier date.

Pharmacy Act, 1868.

Proceedings Under Section 15 at Hamilton.

Pharmaceutical Society v. Lamb.

On Monday, November 23, 1903, at the Sheriff Court House, Hamilton, before Sheriff Thomson, Robert Lamb, assistant to William Ferguson, chemist and druggist, Craigneuk, Motherwell, was charged, at the instance of the Registrar of the Pharmaceutical Society, with having sold laudanum in contravention of Section 15 of the Pharmacy Act. Mr. P. Morison, jun., S.S.C., appeared for the prosecutor, and Mr. Murray was for the respondent, who pleaded guilty.

It was contended for the defence that the offence was purely technical, and his Lordship was asked to take that view and impose a nominal penalty only.

Mr. Morison said that the accused's employer had another business in Motherwell, and this unqualified assistant was left in charge of a branch shop.

The Sheriff imposed a penalty of £1 5s., or ten days' imprisonment, with costs amounting to £1 2s. 6d.; making £2 7s. 6d. in all.

Sale of Food and Drugs Acts.

Camphorated Oil and Spirit of Nitre.

On Thursday, November 19, 1903, at Sheffield Police Court, H. Cooper, 61, Moore Street, Sheffield, was summoned for selling camphorated oil and sweet spirit of nitre that were below the necessary standard of quality.

Mr. Brown, who prosecuted, said that it was a dangerous thing that this man should deal in drugs at all.

The Chairman: Are you prepared to give up the sale of drugs?

The Defendant: Yes, I will destroy these bottles.

The defendant was let off with the payment of costs on this understanding.

W. H. Paget, 77, Moore Street, was summoned for selling sweet spirit of nitre under the required strength.

Mr. Brown said the spirit was defective in its most active constituent, so that it was worth nothing at all practically. Of course, spirit of nitre gradually underwent deterioration when kept, and an allowance was made for this by the Pharmacopœia, but this had gone much below that. Mr. Brown read the result of the analysis, which stated that the stuff would be absolutely no good medicinally, and contained a coloured sediment of an indefinite nature which might be described as dirt.

Defendant said that, like "the other gentleman," he took the shop with the stuff in it. He had left the business now, as it did not pay.

The defendant was ordered to pay the costs.

Sweet Spirit of Nitre.

On Tuesday, November 24, 1903, in the Summary Court, Glasgow, before Sheriff-Substitute Davidson, a complaint was heard, at the instance of Mr. Peter Fyfe, sanitary inspector, against Richard McEwan for a contravention of the Sale of Food and Drugs Acts by having sold sweet spirit of nitre which was deficient in ethyl nitrite to the extent of 14 per cent.

Mr. Shaughnessy, writer, said that his presence there was out of courtesy to the Court, there being no respondent. He was there as representing Mr. Richard Jones Owen, chemist, carrying on business at the address given in the complaint under the name of Richard McEwan and Co. The circumstances were that the sanitary inspector called at the shop of Mr. Owen and bought the spirit of nitrous ether, but asked Mr. Owen if he was a partner of McEwan and Co., and was answered to the effect that he was a partner. If Mr Owen had been asked his name he would at once have given it as Richard Jones Owen.

The Sheriff said that in these circumstances the complaint must drop.

Dr. Neilson said that was so, but the trouble was that he could not bring a new case against this man Owen, as the time required by statute had almost expired.

Mr. Shaughnessy again assured the Court that he wrote without delay to the sanitary inspector, explaining that there was no Richard McEwan.

The Sheriff then dismissed the complaint.

Pepper.

On Wednesday, November 25, 1903, at the Lancashire Quarter Sessions, Preston, an important appeal under the Sale of Food and Drugs Acts was heard and decided. The appellant, who was represented by Mr. Sanderson, K.C., and Mr. W. J. Lias, was John Walmsley, a grocer, of Brierfield, and the respondents were the Justices of Colne, for whom Mr. Sutton and Mr. Wingate-Saul appeared, and the appeal was in respect of a conviction for selling white pepper adulterated with not less than 10 per cent. of bleached pepper husk, and consequently not of the nature, substance, and quality demanded.

Mr. Sutton said that the real question was whether the presence of 10 per cent. of bleached husks in pepper caused that pepper to become an adulterated article. It would seem from the evidence that the ground husk was added after the peppercorn had been ground, and the fact that it was bleached was a point upon which the respondents desired to lay some stress, because the outside shell, or husk, of the peppercorn was black or dark, and if added to pepper in its natural state would give distinct colour.

A large number of witnesses were called. The first was Dr. Campbell Brown, who informed the Court that the outer husk of the peppercorn contained an acrid resin, but bleaching took out all the pungency and other qualities.

Mr. Collingwood Williams said that the addition of bleached husks as an adulterant was just as much a fraud as the introduction of olive stones or sawdust.

Other evidence having been given, Mr. Sanderson denied there had been any adulteration, which, he said, was the addition of some foreign substance. No one in this case could say a foreign substance had been added, when nothing had been put in but pepper. He should be able to show that the outside husk was the most valuable part of the corn, containing, as it did, more of the piperine and the volatile oil, which was the aid to digestion.

Mr. E. R. Allen, of the firm of Messrs. Stafford, Allen, and Sons, spice merchants, London, denied that the sample contained anything of a foreign character. The trade demanded what was called a "speck," and 10 per cent. of the husks of the black berry was added.

Mr. Otto Hehner said he did not find any traces of bleaching in the sample in question. If bleaching was carried out in such a way as not to destroy the pepperiness of the pepper he could not see why objection should be raised to the pepper.

Dr. Dyer, Mr. E. J. Bevan, Mr. Herbert Davies, and other public analysts denied there were any traces of bleaching; while a number of trade witnesses were called who, while admitting the sample to be of low grade, expressed the opinion that in the eyes of the trade it was what was known as white pepper.

The Court dismissed the appeal, with costs, and declined to state a case.

Dentists Act.

Foreign Diplomas.

On Wednesday, November 25, 1903, at Bow Street Police Court, Jacques Flax, Tottenham Court Road, was summoned for using, in an advertisement, a description wrongly implying that he was registered under the Dentists Act of 1878, and that he was specially qualified to practise dentistry. Mr. Turner supported the summons on behalf of the British Dental Association.

Mr. Ritchie Macoun, for the defence, said that although the defendant was not registered in this country, he held diplomas from America, Germany, and Austria. There was nothing in the advertisement, he contended, to imply that the defendant was specially qualified, and that was the important point.

A fine of £5 and £5 5s. costs was imposed.

The Case of Joint Stock Companies.

On Friday, November 20, 1903, in the King's Bench Division of the Irish High Court of Justice, judgment was given by Lord O'Brien, Chief Justice, Mr. Justice Gibson, and Mr. Justice Madden, in the case of O'Duffy *v.* Marcus L. Jaffe and Jaffe, which had been argued on former days. The plaintiff, Mr. O'Duffy, a well-known Dublin dentist, is Secretary to the Irish branch of the British Dental Association; and the defendants are a joint-stock company, carrying on the business of dentists and dental surgery, in Cecil Street, Limerick.

Summonses charging them with having performed dental operations, and taken their title without being registered under the Dentists Act of 1878, were heard before the magistrates of Limerick, who refused to convict, but stated cases for the opinion of the King's Bench Division.

The Lord Chief Justice, in giving judgment upholding the decision of the magistrates, said the question was, did the word "person," in Section 3 of the Dentists Act, mean a natural person, or did it include an artificial person, such as a corporation or a company? He was of opinion that it meant a natural person, and had no extended signification. There was no provision in the Act for the registration of corporations or companies. All through the Act there was evidence that the word "person" was not applicable to companies, which could not be educationally qualified or imprisoned for improper or fraudulent conduct, although they might be fined.

Mr. Justice Gibson concurred.

Mr. Justice Madden, in concurring, said that if the intention of the Legislature had been frustrated—as he believed it had—that was the necessary consequence of the language they had employed. But what had occurred was quite intelligible. The mischief against which the present prosecution was directed was not in existence in 1878. If it had been he had no doubt that an interpretation clause for the purpose of including corporations would have been embodied in the Act. But the Legislature then dealt only with persons professing to be dentists, and omitted such a clause. Years afterwards, the mischief now complained of came into existence. In that state of things it was the duty of the Court to construe the Act as it was passed, and it was not for them as a court of construction—more especially as from their decision there was no appeal—to supply the deficiency of the Legislature. If they thought fit they could pass an Act specially directed against the mischief that afterwards came into existence.

POISONING CASES AND INQUESTS.

The cases by poisoning reported during the seven days ended Wednesday, November 25, 1903, numbered eleven:—

Poison.	Accident.	Suicide.
Arsenic	—	1
Carbolic Acid	—	1
Chloroform	1	—
Hydrocyanic Acid	—	1
Laudanum	1	2
Oxalic Acid	—	1
Potassium Cyanide	—	1
Kind not Stated	1	1
Total	3	8

Arsenic.—The managing director of a firm of wholesale ironmongers committed suicide at Upper Holloway by taking arsenic.

Carbolic Acid.—A man at Cardiff took a fatal dose of carbolic acid.

Chloroform.—A child at Hebburn died under chloroform given as an anæsthetic.

Hydrocyanic Acid.—A ship's surgeon committed suicide by taking prussic acid.

Laudanum.—A woman at Navenby died from an overdose of laudanum: the coroner regretted that laudanum was not in Part I. of the Poisons' Schedule. A woman at Seacombe, and a dairyman at Lincoln, committed suicide with the same poison.

Oxalic Acid.—A woman at Coventry committed suicide by taking oxalic acid.

Potassium Cyanide.—A dental mechanic at Penwortham, near Preston, committed suicide by taking this substance. A signature had been taken by the chemist who supplied the potassium cyanide, but the man was not personally known or introduced, and the chemist was reprimanded by the coroner at the inquest.

Kind not Stated.—A man at Sloane Square, London, took poison, the nature of which was not stated. A corrosive fluid, taken by mistake two and a-half years ago, has proved to be responsible for the death of a man at West Wycombe. For the last two and a-half years all nourishment has been taken through a tube inserted in the stomach.

Attempted Suicides.—A number of cases of attempted suicide with carbolic acid, and one with salt of lemon, are reported.

GLASGOW AND WEST OF SCOTLAND PHARMACEUTICAL ASSOCIATION.

MONTHLY MEETING.

Thursday, November 19, 1903, at 94, West Regent Street, Glasgow, the Vice-President, Mr. J. Murchie, in the chair.

A practical demonstration on the

Making of Suppositories,

pessaries, bougies, etc., by the cold process was given by Mr. J. Leckie. Two machines were shown, one working by means of a lever, which pushed a piston down upon the mass, contained in a conical filler, into the mould below. By this machine suppositories could be made in small quantities at the dispensing counter. The other machine was of the horizontal variety, and was of the same kind as that shown by Mr. Jennings at the last evening meeting of the Pharmaceutical Society in London (see p. 712).

On the motion of the Chairman, a hearty vote of thanks was awarded Mr. Leckie for his demonstration.

Mr. J. Crombie then read a paper on

Urine Analysis,

which he commended as an excellent and profitable subject for the pharmacist to take up. He described the composition of normal urine, and the physical characters of the urine of healthy and diseased persons respectively. He proceeded to describe the chemical reactions by which the presence of various substances might be qualitatively or quantitatively determined. It is hoped to make further reference to Mr. Crombie's paper in a future issue.

A hearty vote of thanks was accorded to Mr. Crombie.

CARDIFF AND DISTRICT PHARMACEUTICAL ASSOCIATION.

ANNUAL MEETING.

Wednesday, November 25, 1903, at the Park Hotel, Cardiff, the President, Mr. Jabez A. Jones, in the chair.

The statement of accounts, giving detailed accounts of the annual dinner, picnics, etc., and showing a balance in hand of over £4, was read by the Hon. Secretary.

Election of Officers.

Mr. David Anthony was elected President for the ensuing year. For the position of Vice-President, Mr. Blake Benjamin, of Penarth, was chosen; and Mr. Richard Mumford was elected Hon. Secretary. For the post of Commercial Secretary, Mr. Bellamy was re-elected, and a good deal of discussion ensued in reference to the co-operative buying scheme, and the report of the Sub-Committee thereupon. After the meeting had decided to hold another whist drive upon December 9, the proceedings terminated.

NORTHAMPTON CHEMISTS' ASSOCIATION.

MONTHLY MEETING.

Friday, November 20, 1903, at the Black Boy Hotel, Wood Hill, Northampton, the President, Mr. W. D. Mayger, in the chair.

Medicine Stamp Duty.

Mr. Dennis read a short but interesting paper upon the changes in the medicine duties which the Board of Inland

Revenue are enforcing. Mr. Dennis then concisely outlined the effect of the new regulations as set forth from time to time in the *Pharmaceutical Journal*. He referred to the list of titles for various preparations which had been compiled to show which were liable to duty. In regard to cough lozenges, he urged that they should be made according to formula and then labelled as "Lozenges: P.J.F., 42," or whatever other formula was used. In concluding, he reiterated his belief that the chemists, as a whole, had little to fear from the innovations.

Mr. Ashford thought that the chemists of the country owed a debt of gratitude to the Pharmaceutical Society and the Journal for the steps they had taken to obtain information with regard to the working of the new regulations. Whatever the shortcomings of the Pharmaceutical Society in the past, they had certainly taken the bull by the horns this time, and their services had proved of great value to the trade.

Mr. McKinnell, Mr. G. Ingle, Mr. R. F. Wright, Mr. L. North, and Mr. D. McKinnell (the new Divisional Secretary) continued the discussion.

Vote of Condolence.

Mr. Ashford moved that a vote of condolence be accorded to Mrs. Negus, widow of the late Mr. S. Negus, of Northampton. Mr. Negus, he added, was the oldest inhabitant of Northampton, and the oldest chemist of the county—and probably of the country—for he was in his ninety-eighth year.

Mr. W. McKinnell seconded the vote, which was carried unanimously. It was agreed to send a donation of one guinea to the Benevolent Fund of the Society as a tribute to the memory of Mr. Negus.

Divisional Secretary.

Mr. W. McKinnell moved that a resolution be forwarded to Mr. John Bingley, J.P., for thirty years Divisional Secretary for Northampton of the Pharmaceutical Society, expressing the Association's appreciation of his valued services to the chemists of Northampton in that capacity.

The vote was carried unanimously.

LINCOLN AND DISTRICT CHEMISTS' ASSOCIATION.

ANNUAL MEETING.

On Thursday, November 19, 1903, at the Coffee Palace, Lincoln, the President, Mr. Battle, in the chair. The meeting was preceded by a supper.

President's Address and Re-Election.

The President, reviewing the year's work, said that several very important events had taken place since the last annual meeting. The business event was the P.A.T.A. Convention, to which the Association sent the Secretary as delegate. He (Mr. Battle) looked upon the Convention as a most important meeting, which had already done a vast amount of good. The social event of the year was the visit of Messrs. Bremridge and Chater on the occasion of the conference of Lincolnshire chemists in February last. The personal event was his going to the Pharmaceutical Society's annual meeting in May.

Mr. Councillor Allison proposed the re-election of Mr. Battle as President. Mr. Hill seconded, and it was carried unanimously.

Financial.

Mr. Watson, Treasurer, gave his report. He said he commenced the year with a balance in hand of £1 16s., but ended the year with a balance due to the Treasurer of £1 18s. To keep out of debt and to have sufficient funds to carry them through the coming year he asked the members to approve of a 5s. subscription instead of 2s. 6d. for the present year. The meeting agreed to the suggestion, and thanked Mr. Watson for his services and re-elected him for the coming year.

Mr. Dixon, in proposing the re-election of Mr. Birkbeck as Secretary, said the Association was fortunate in having a Secretary who took so much interest in its affairs. Mr. Walker seconded, and it was carried unanimously. Messrs. Battle and Elmitt were appointed a Parliamentary Committee to act with the Divisional Secretary, when necessary.

BRADFORD CHEMISTS' ASSOCIATION.

SMOKING CONCERT.

Tuesday, November 24, 1903, at the Royal Hotel, Bradford, Alderman Henry Dunn, the President, in the chair. There was an attendance of over forty members and ladies, a couple of hours being spent in excellent entertainment provided by capable entertainers. Misses Maud and Agnes Mitchell, Mr. H. R. Jackson, and Mr. Arthur Hanson contributed songs, which were in the best of taste and served to display voices of good quality; Mr. H. G. Dutton, who is well remembered always as a most capable ventriloquist, appeared on this occasion as a 'cello soloist of no mean capability; Mr. L. B. Sutcliffe displayed a facile handling of the violin; and Mr. George B. Parker exhibited a gramophone, which was all that could be desired in respect of its performances. Mr. Mitchell did most satisfactory service as pianist. The thanks of the audience were adequately expressed by Mr. Waddington and the President, who moved and seconded a vote of thanks to those responsible for the entertainment, and their sentiments were heartily endorsed by all present, the general feeling being that the evening had been spent most agreeably.

BOURNEMOUTH AND DISTRICT PHARMACEUTICAL ASSOCIATION.

ANNUAL MEETING.

Thursday, November 19, 1903, at the Albert Restaurant, Bournemouth. Present: Messrs. Worth, Hardwick, Curtis, Bingham, Bilson, Reid, Hornby, Botham, Williams, Norris, Hughes, Robinson, Scrampton, and Rose.

Election of Officers.

Mr. E. Worth was re-elected President; Mr. F. Rose, Secretary; and Messrs. Bingham, Hornby, Pars, and Morris to form the Committee.

Subscription.

It was resolved that the subscription to the Association be fixed at 5s. for the ensuing year.

Place of Meeting.

Mr. Curtis proposed that the Secretary be instructed to make inquiries as to the possibility of obtaining other rooms as a place of meeting, and also as to rental, etc., and to make what arrangements as to meeting he thought fit.

This was seconded by Mr. Williams and carried unanimously.

NORTH-EAST LANCASHIRE CHEMISTS' ASSOCIATION.

MONTHLY MEETING OF EXECUTIVE.

Wednesday, November 25, 1903, at the White Bull Hotel, Blackburn, Councillor Critchley presiding.

The Formulary and the Pharmacy Bill.

Mr. Jos. Hindle (Hon. Sec.) said he believed the Executive would appreciate the work of the *Pharmaceutical Journal* in recognising the everyday needs of pharmacists by compiling the 'P.J. Formulary.' Another matter he wished to refer to was the wavering of some of the members of the Pharmaceutical Society on the proposed Bill. He thought it incumbent upon them to make it clear to all and sundry that they would not accept any modification whatever of Clause 7. Without that clause, or with that clause modified, the Bill was of no use whatever to practising pharmacists. He would be glad if Mr. Gifford, as a member of the Council, would give them a definite statement of the view the Council took on that matter.

Mr. R. Lord Gifford said that in October the Pharmaceutical Council emphasised the fact that Clause 7—around which criticism had centred—embodied the essential principle of the Bill and would not be sacrificed. The principle of professional qualification, which focussed the policy of the Council, was the foundation of all professions. Public opinion accepted it as a sound principle, as was proved week by week. A month ago the British Medical Association showed their keen anxiety on the matter, and the Scotch Courts had upheld the claim of the Chartered Accountants against a company for using titles, and so on. Their special and immediate work was to demonstrate that the accepted professional principle applied to pharmacy so far as the practice of the profession extended.

SCHOOL OF PHARMACY STUDENTS' ASSOCIATION.

ORDINARY MEETING.

Friday, November 20, 1903, in the Lecture Theatre, 17, Bloomsbury Square, London, Mr. J. T. Cart in the chair.

Mr. J. Stuart Hills gave a demonstration of

Some Modern Photographic Printing Processes.

Mr. Stuart Hills said that he did not intend to read a scientific paper, but merely to demonstrate in a practical way the methods which he had found most satisfactory in his endeavours to produce artistic photographic prints. He deplored the tendency among amateurs to content themselves with the production of highly-glazed P.O.P. prints; these productions had but little artistic quality, and he considered the gelatino-chloride process far less interesting than the three processes he was about to show—namely, the platinum, bromide, and carbon processes. After developing a platinum print, he exposed a bromide print to the electric light, printing in clouds from a separate negative, then developed and fixed this print; finally he demonstrated the procedure of carbon printing, and, after explaining the method of exposure by means of actinometers, he developed a seascape print in Italian green. The three prints were all highly satisfactory. Mr. Stuart Hills then lucidly explained the chemical changes involved in the exposure, development, and fixing of his prints, and finally discussed briefly the relative merits of these three processes. The platinum process, he considered, gave excellent permanent prints, and was specially well adapted to the production of prints in large batches. The carbon process, with its great variety of colour, undoubtedly possessed the highest artistic merit. The advantages of the bromide process were apparent, especially to Londoners, who had so little opportunity of printing by daylight in the winter months. The black prints were, he considered, a very satisfactory imitation of platinum prints, but the coloured prints were not to be compared with those produced by the carbon process. One great advantage of the bromide process was that "plucky" prints could be obtained from negatives which would only give poor prints, lacking in contrast, by the platinum and carbon processes. Some large prints lent by the Autotype Company were exhibited, and also a number of specimens of Mr. Hills' own work, including a large carbon print from a paper negative, which was, in turn, produced by means of a carbon transparency from an original half-plate negative.

A short discussion then followed, in which Messrs. Cart, Garsed, and Deane took part, the last-named strongly upholding the bromide process.

Mr. T. E. Wallis proposed that a hearty vote of thanks be accorded to Mr. Stuart Hills, and, Miss Renouf having seconded the motion, it was carried by great acclamation. Mr. Hills having suitably replied, the Chairman announced that the next meeting would be held on Friday, December 4.

TORQUAY CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Thursday, November 19, 1903, at the Pavilion Hotel, Torquay, Mr. Newlyn, President, in the chair.

Expressions of sympathy were passed with Mr. Sloman and Mr. March in their recent illness, and Mr. Taylor was congratulated upon his re-election to the mayoralty of the borough.

Apenta Water.

The Secretary was instructed to write the Apollinaris Company, asking them to consider the question of fixing the minimum retail price of the 1s. 3d. size at 1s.

Co-operative Buying.

The list of articles stocked by the various members taking part in the scheme was considered, and several alterations were agreed upon.

Medicine Stamp Duty.

The Secretary read correspondence which he had received from various trade journals bearing upon this question, and after some discussion it was resolved that Mr. Young write to the Somerset House authorities asking them for a definite reply to the following questions:—"(1) If it is necessary to put the number of formula upon the label; (2) what do they consider a sufficient description to enable anyone to refer to the 'Formulary' and find the exact formula." It was stated, however, that the authorities had already conceded the point as to numbering. [*** But see page 774.—Ed. *P.J.*].

PLYMOUTH, DEVONPORT, STONEHOUSE AND DISTRICT CHEMISTS' ASSOCIATION.

ANNUAL DINNER.

Wednesday, November 25, 1903, at the Hotel Continental, Plymouth, Mr. J. Barge, President, in the chair.

The President having given the loyal toasts,

Mr. J. Davy Turney followed with the toast of the

Pharmaceutical Society.

Mr. Turney said he thought the feeling and attitude of chemists throughout the country towards the Pharmaceutical Society were very different to-day to what they were some ten years ago. Every year now marks a closer bond of relationship between local associations and the Pharmaceutical Council. Much of the grumbling and criticism in the past levelled at the Society was due to a great extent to a want of knowledge of the difficulties the Society had to deal with. If they looked at some of the men who had been Presidents of the Pharmaceutical Society, and the active work they had personally done to further the interests of chemists—it was hardly necessary at such a gathering to mention their names—they would find a strong personality about all these men, and each in his own way had worked hard to improve the position of chemists and to bring about a better state of things. He was sure there was not a chemist in the country worthy of the name who did not feel proud of these men and grateful for the work they had done. He wished to congratulate the Editor of the *Pharmaceutical Journal* on the improvement of the official organ. As for the progress in pharmaceutical reform during the year, he would refer to the Pharmacy Bill, which was still waiting for introduction into the House of Commons. He considered the Bill a just, honest, and fair one; at least, it covered what was absolutely their legitimate right and gave full protection to their titles. The Bill would pave the way for a simpler Act for the protection of titles.

Mr. C. J. Park, on behalf of the Council, thanked them for the way the toast had been received. He had no doubt that if the present feeling had existed twenty years ago between the Council and the chemists, pharmacy would now occupy a better position. Unfortunately, chemists as a body did not move until they felt the personal pinch. The past year had been very busy, apart from the routine work of the Society. It had drafted a Bill which they considered would meet with their requirements. The Council had hoped that the Privy Council would have introduced the Bill as a Government Bill. The Bill was bound to excite opposition from members who had monetary interests opposed to their own. Local members of Parliament were surprised at the audacity of certain unqualified people interested in the sale of poisons who desired free sale of powerful poison to put money into their own pockets; but the Council had exploded that view. Difficulties had arisen with Somerset House, but the Council had done its best to safeguard chemists' interests. They owed considerable gratitude to the Editor of the *Pharmaceutical Journal* and his staff for bringing out the Formulary, thus placing chemists in a position hitherto not held. He joined with the toast the names of the Divisional Secretaries, Mr. R. F. Roper and Mr. C. T. Weary.

Alderman H. Gadd, J.P., submitted the toast of

Plymouth, Devonport, Stonehouse and District Chemists' Association.

Mr. Gadd said that no one could help being pleased at the progress which the Association had made. Unfortunately, the attitude of chemists was one of divided allegiance all along the line. Presidents of the Pharmaceutical Society had to confess that they represented only a proportion of the craft, but they were on the way to gain lost ground.

The President, in reply, said that ten years had rolled away since this Association was formed. There were those present that night who formed part of that first meeting in 1893, and it was to their perseverance and response to duty that the success of this Association was due, and they were experiencing now the strength and influence of that bond of union they sought to cement. The aim of their Association might, he thought, be expressed in two words, instruction and interest, and although the goal of their expectations had not been reached, good progress was to be recorded. He then gave a brief account of the educational facilities afforded by the Association, and emphasised the fact that the library contains a number of excellent text-books, in addition to the well-arranged museum. Speaking of the Pharmacy Bill, he said that he felt the only means of improving the pharmaceutical status was through the parent Society. There never was a time when such scrupulous care was exercised in the preparation and storing of drugs, or a more thorough and systematic training in pharmacy, than to-day, and he believed that all the leading medical men preferred that their dispensing should be in the hands of qualified chemists. To any young man entering upon his duties, he would say, "endeavour to become a specialist in one department or another." To all such this Association held out a helping hand.

The toast of

The Officers of the Association

was proposed by Mr. C. T. Weary, and Mr. F. A. Goodwin replied. Mr. Fairweather, Hon. Secretary, supported.

Mr. Spear proposed the toast of "The Visitors," to which Mr. Hoole and Dr. Bushnell responded. Dr. Bushnell condemned the unrestricted sale of proprietary medicines, which should, he said, be supervised by the British Medical Association and the Pharmaceutical Society.

SCHOOL AND COLLEGE NEWS.

Nottingham School of Pharmacy.—The second annual supper of the Nottingham School of Pharmacy will take place in the Mikado Café, Long Row, on Tuesday, December 8, at 8.30 p.m., when Mr. R. Fitzhugh, J.P., will take the chair, and be supported by several of the leading local chemists. All applications for tickets from students and their friends should be made without delay to F. E. Thorpe, Secretary, School of Pharmacy, Nottingham.

Pharmaceutical Football Club.—The match against the Polytechnic Football Club B team was played last Saturday on the home ground. This team was much stronger than the one which opposed the Square last year, and eventually proved the winners. The field had been properly drained, and was consequently in a much better condition. A strong wind was blowing, and, the Square losing the toss, at half-time the visitors had four goals to their credit, and before the end of the game this number was increased to eight. But although beaten, the Square made a very good stand, and once found the net, but the player was unfortunately declared offside.

Football.—Metropolitan College *v.* Westminster College.—Following up their hollow victory over Muters in the Inter-Pharmacy League, the Metros accounted for the Westminster team on Saturday last by three goals to nil. The match was played at Old Oak Farm, Shepherd's Bush, but the high wind that prevailed spoilt the play. Metros, playing with the wind, were continually pressing, but could only score once in the first half, through Lester. On changing ends more even play was witnessed. The bustling tactics of Westminster prevented scoring for a time, but eventually Lloyd and Prince scoring for "Metros," they won as stated.

Leeds College of Pharmacy.—The Leeds College of Pharmacy was *en fête* on Wednesday, November 18. In the afternoon the lady students held a reception, which was attended by over 100 ladies and gentlemen. An excellent programme included songs by Messrs. Crawford and Mackay, Misses Knowles, Hughes, Hardwick, Lee, and Nurse Franklyn, the latter also taking part in a duet with Mr. Jackson, which was much appreciated. Mr. Lee acted as violinist, whilst Mr. Hoyle and Miss F. Hebblethwaite presided at the piano. During the afternoon demonstrations of radium and the X rays were given by the principal, in which radium and radium bromide were exhibited, also the spinthariscope, the structure of which was explained. An exhibition of jewels, mineralogical and geological specimens, plants, plaster casts, and curiosities was also on view. At night the students held their annual smoking concert, with Mr. Maskew, of Clacton-on-Sea, in the chair. Over 100 visitors included representatives from nearly every important town in Yorkshire. The usual toasts were submitted. and a programme of more than fifty items was concluded at two a.m. The proceedings throughout were characterised by the utmost enthusiasm, and the day was voted one of the best in the annals of the college.

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

Forfarshire and District Chemists' Association.—At a meeting of the above Association, held on Wednesday, November 25, 1903, Mr. William Cummings read a short paper on the interpretations of the Medicine Stamp Duty Acts.

Linnean Society of London.—At an evening meeting, to be held on Thursday, December 3, 1903, the following papers will be read:—"On the Littoral Polychæta from the Cape of Good Hope," by Dr. Arthur Willey, F.L.S., and "Notes on *Myriactis areschougii* and *Coilodesme californica*," by Miss May Rathbone.

Pharmaceutical Prosecutions in Glasgow.—Mr. Peter Morison, jun., who acts as solicitor to the Pharmaceutical Society in connection with prosecutions in Scotland under the Pharmacy Act, has written to the *Glasgow Herald* denying the accuracy of a statement which had appeared in that paper on the subject of the recent prosecutions in Glasgow.

Advertising Rubber Goods.—The London police force is taking steps to prevent the exhibition in shop windows of advertisements which are of an illegal or indecent nature, and a conviction was secured at Bow Street Police Court on Tuesday last, against a tradesman in Southampton Street, and against a printer who had printed the advertisements complained of.

Chemical Society.—A meeting will be held on Thursday December 3, when the following papers will be communicated:—"On the Molecular Formulæ of Some Fused Salts as Determined by their Molecular Surface Energy," by J. F. Bottomley; "Acid Salts of Monobasic Acids," by R. C. Farmer; "The Atmospheric Corrosion of Zinc," by G. T. Moody; "The Solubilities of the Hydrates of Nickel Sulphate," by B. D. Steele and F. M. G. Johnson.

Society of Arts.—At the first ordinary meeting of the 105th Session of the Society of Arts, held on Wednesday, November 18, Sir William Abney, F.R.S., presided, and gave an address on the subject of "Commercial Education." Except in the case of Science and Art, the State was, he said, aiding commercial education as much as it aided technical education. So far as evening classes were concerned the demand for State aid had been fairly met, and it was only necessary for the localities to use such aid to meet their full requirements.

Poisoning of Dogs at Ballycastle.—A large and representative meeting of the inhabitants of Ballycastle and district was held on Wednesday, the 18th inst., in order to express abhorrence at the wholesale and indiscriminate poisoning of dogs during the past few months. One of the persons present had two valuable fox terriers poisoned on his own doorstep, and several others also lost valuable dogs recently. And even in Ireland there is an agitation on foot to free from restrictions the purchase of poisons by farmers and others!

A Boy's Weakness for Medicines.—A boy's passion for proprietary medicines led to his being charged at Birmingham recently with forging an order and obtaining goods by false pretences. He was alleged to have written an order in the name of Bellamy and Wakefield, and obtained several bottles of lung tonic, boxes of pills, and two large tins of cocoa. The lad was found to have stored at his residence a large quantity of pills, lozenges, and medicines of all descriptions. Titled medical men and consulting physicians are evidently not the only persons who are in the habit of ordering proprietary medicines.

Worshipful Company of Spectacle-makers.—At the last meeting of the special committee on sight-testing the following witnesses were present, and gave evidence:—Messrs. A. E. Grey, W. Salt, and J. Raphael, representing the wholesale industry; Mr. G. E. Ellis, F.R.M.S., representing refractionists and opticians; Mr. A. D. Jameson, Editor of the *British Optical Journal*, and promoter of the third memorial from the livery to the court of the S.M.C.; Mr. G. Bennett, representing chemist-opticians; and Mr. E. Spiegelhalter, representing jeweller-opticians. The committee will meet on December 1 to hear evidence from doctors and opticians.

Gratifying.—Mr. Allwood, of Wolverhampton, in his report as inspector under the Sale of Food and Drugs Acts, states:—"It is gratifying and reassuring to the public for me to be able to testify to the purity of drugs sold in Wolverhampton by duly qualified chemists. During the last ten years, however, in the course of my inspections of this town, I have found that certain drugs are sold by traders other than chemists, and usually by the smallest class of shopkeepers, who, in many instances, have not the slightest elementary knowledge either of their therapeutic or medicinal effects, or of the care that is requisite in the sale and preservation for sale of such drugs. Where so much depends upon the potency of certain drugs, I do not think that this method of sale, by irresponsible persons, is one that is conducive to the health and well-being of the community; and it may even be attended by most injurious effects."

Certification of Opticians.—At the November examinations, 1903, of the Worshipful Company of Spectacle-makers, the following candidates were successful in passing the full examination:—W. F. Wood, A. E. Slinn, A. Mackenzie, H. A. Hobbs, H. C. Patey, R. J. O'Sullivan, A. T. Thompson, E. Corner, F. Cherry, and C. Hyde. The following have passed the modified examination to pass extra subjects:—H. R. Metcalf, G. F. Baker, E. Thompson, H. S. Gilberd, F. N. Mercer, and G. L. Rea. The following have passed the modified examination:—H. S. Cox, J. Blackham, W. Dennis, J. McIver, W. Gray, W. J. Morgan, W. G. Whiting, G. W. Meiszner, R. A. Webber, E. Hodgson, and F. A. Davis. All the examiners were unanimous in saying that the candidates at the late examinations were the best-informed that have ever been examined by them, the candidates doing exceptionally well in mathematics, heat and light, and the special subject. The next examination will most probably be held in July, 1904.

Royal Society.—The following is the list of Council and officers of the Royal Society nominated by the Council for election by the Society at the next anniversary:—President, Sir William Huggins, K.C.B., O.M., D.C.L., LL.D.; Treasurer, Alfred Bray Kempe, M.A.; Secretaries, Professor Joseph Larmor D.Sc., D.C.L., LL.D.; Sir Archibald Geikie, Kt., D.C.L., Sc.D. LL.D.; Foreign Secretary, Francis Darwin, M.A., M.B. Other members of the Council:—George Albert Boulenger, F.Z.S., Professor John Rose Bradford, M.D., D.Sc., Professor Hugh Longbourne Callendar, LL.D., Frank Watson Dyson, M.A., Professor Harold Baily Dixon, M.A., Sir Michael Foster, K.C.B., D.C.L., Professor Percy Faraday Frankland, Ph.D., Sir Robert Giffen, K.C.B., LL.D., Professor William Dobinson

Halliburton, M.D., F.R.C.P., Ernest William Hobson, Sc.D., Professor John Wesley Judd, C.B., LL.D., Professor George Downing Liveing, M.A., Professor Augustus Edward Hugh Love, M.A., Adam Sedgwick, M.A., William Napier Shaw, Sc.D., Captain Thomas Henry Tizard, R.N., C.B.

Irish Workhouse Apothecaries' Salaries.—At a meeting of the Guardians of the Limerick Union last week, Mr. W. Frost proposed and Mr. Thomas Hartigan seconded the adoption of a return to be forwarded to the Local Government Board in connection with the application that the salary of the workhouse apothecary be increased from £100 to £120 per annum. This return set forth that in the Kilkenny Union there are two medical officers and one hundred patients, the apothecary there receiving a salary of £60 a year. In Galway Union there are two medical officers and ninety patients, the apothecary's salary being £70 per annum. In Limerick Workhouse there are four medical officers and 380 patients. It was also pointed out that in Belfast, to which the Local Government Board referred in a recent communication, the apothecary, along with his salary, was supplied with fuel, light, and first-class rations. The apothecary previous to Mr. McMahon was paid £150 by the Limerick Guardians. On a poll being taken, fifteen voted for the return being adopted and five for a direct negative.

Another Poison-Bottle Device.—A correspondent of the *Lancet* has sent to that paper some specimens of an appliance for preventing accidental poisoning. It consists of a flat tin disc having the word "Poison" stamped on it, which can be fitted on to the neck of a bottle like a collar, although the eight points made by a corresponding number of scallops in the outer edge of the disc give it more the appearance of a frill. "It is instantly fixed," says the inventor, "by pulling the free ends apart at right angles to the plane and passing it round the neck. It is not easily removed again by those who do not know how. If the persons handling the poison bottle do not prick the fingers at first they are almost certain to do so on replacing the cork or putting the bottle down again, but if a prick does not give them warning the disc rings like a bell and conveys a curious rattling sensation to the hand as soon as the bottle is handled." The *Lancet* expresses commendation of the appliance. But when so many inventions with the same object in view have been put forward, is there anything to be gained by voluntarily submitting one's fingers to mild forms of torture such as that suggested?

Arsenic in Beer.—An action arising out of the large number of cases of arsenical poisoning which happened a year or two ago, through the drinking of beer, is said to be pending in the Law Courts, and is likely to come on for hearing early in the spring. The action is brought by the liquidators of Bostock and Co. (Limited), who were manufacturers of brewing sugar, against Messrs. John Nicholson and Son, chemical manufacturers, of Leeds, and the sum involved is understood to be no less than £259,000. The action is based on the allegation that the defendants supplied to Messrs. Bostock sulphuric acid which contained arsenic, and that thus the sugars manufactured by that firm for sale to brewers became contaminated by arsenic; the defendants, on the other hand, attribute the arsenical contamination to malt used by the brewers. It will be remembered that in the spring of 1901 the Manchester Brewers' Association appointed a commission of experts to inquire into the subject of arsenical poisoning in beer, whose report, besides dealing with the allegations as to Messrs. Bostock's sugars, contained recommendations in regard to the arsenical contamination of malt.

Chemists' Assistants' Association.—On Thursday, November 19, 1903, there was a good attendance of members at 73, Newman Street, London. The programme for the evening was a paper on "Systematic Pharmaceutical Education: A Suggestion," by C. E. Franklin-Vallet; but the President announced that Mr. Vallet had intimated that morning that he would not be able to be present to read his paper. He (the President) was sorry that there had not been time to arrange for another paper or to notify members. The members present thereupon held an impromptu concert, songs and recitations being given, and an enjoyable evening was spent.—In response to the many wishes of members and friends, this Association will hold, during the present session, two cinderella dances at the Portman Rooms, Baker Street, on December 3, 1903, and February 11, 1904. The price of the tickets will be 2s. 6d. for each dance. Mr. A. Latreille is Hon. Sec. of the Dance Committee. Tickets may be obtained from Mr. C. W. Martin, 98, Camberwell New Road, S.E., and Mr. A. H. Solomon, 75, Holland Road, W., who have kindly consented to act as M.C.'s; and also from Mr. A. B. Britton (President), 7, Aldersgate Street, E.C.; Mr. A. R. Arrowsmith, 4, Stratford Place, W.; Mr. H. Haylings, 28, Milman Street, W.C.; Mr. W. S. Parker, 143, New Bond Street, W.

The Truth about William Allen.—The story told in Mrs. Crawford's 'Life of Queen Victoria,' concerning the part played by the late William Allen, first President of the Pharmaceutical Society, in the affairs of the Duke of Kent, prior to the birth of Queen Victoria, has been generally accepted as correct. But Mr. Henry Chapman, a member of the Society of Friends, now residing in Philadelphia, has written to the Editor of *Truth*, stating that from 1837 to 1842 he attended the Schools of Industry, Lindfield, Sussex, started by William Allen, and while there became acquainted with the story of William Allen's connection with the Duke of Kent. Mr. Chapman thinks Mrs. Crawford's book has done the Duke an injustice. He states that when visiting the Duke of Kent, William Allen asked the Duke, "What are all these people doing that I see about thy place?" The Duke replied that they were there to try to collect bills that he could not pay. He asked William Allen what he advised him to do, and William Allen said, "Pay thy debts." The Duke answered, "How can I? The estates won't pay them." William Allen answered, "Yes, they will; and, if thou wilt take my advice, it is easily done." The Duke asked him if he would undertake the matter for him, and William Allen said he would, provided the Duke followed his instructions. The Duke answered that he would. The instructions were that he should go to the Continent and live in moderation, and in the meantime he (William Allen) would see that his debts were paid. The Duke agreed, and William Allen then went among the people and asked to see their bills. He saw that the prices charged were beyond all reason, so he told the people to go to those who had sent them, and when they had made out proper bills at the market prices, they were to meet him on a certain day, and he would pay them. They went off and made out proper bills, and William Allen paid them. Mr. Chapman says that was the whole story, and that when the time for Queen Victoria's birth became nigh, there was no lack of funds and no borrowing.

TRADE NOTES.

Zepto Tartar Remover has been placed upon the list of the Proprietary Articles Trade Association; the price has been fixed at 9d. each, minimum price 7½d. The proprietors of this well-known article are Messrs. Thomas Christy and Co., Old Swan Lane, E.C.

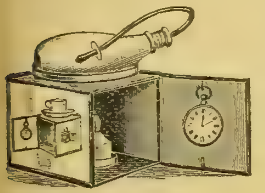
Fire.—Messrs. Thos. Guest and Co., of Carruthers Street, Ancoats, Manchester, announce that their three factories were completely destroyed by fire on Thursday night last, and that they are unable to execute orders for the present.

The Lantern Season.—Messrs. John Wrench and Son, 50, Gray's Inn Road, W.C., are making a special feature of optical lanterns and cinematographs, and they will be pleased to forward, post free, to any dealer in photographic apparatus, an illustrated catalogue, giving full particulars; also a schedule of discounts to the trade.

St. Jacob's Oil, Limited.—The pamphlet, 'Beauty and Health,' prepared for the St. Jacob's Oil Co., Limited, and containing a weather forecast for 1904, is now ready for distribution. It will doubtless be remembered that a weather forecast and calendar has been issued on behalf of the company's preparations for a number of years, and has been a very popular book of reference.

Enlarging Lanterns.—The Midland Camera Co., Slaney Street, Birmingham, has designed an enlarging lantern for use with an ordinary field camera, to meet the requirements of those photographers who prefer to use the same lens for enlarging as they used for taking the picture. The company has also enlarging lanterns for use by daylight, or with oil lamp, incandescent gas, limelight, acetylene, or arc lamp. These lanterns are all well made, in the usual sizes, and are supplied at reasonable prices. A copy of the firm's price list will be sent to any reader of this Journal on application.

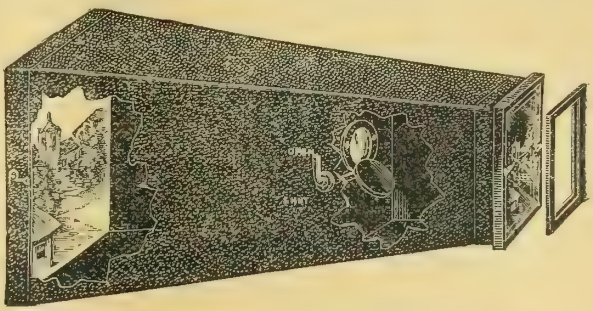
Night Light Screens.—Chemists who are married will doubtless appreciate the utility of the night-light screens supplied by the Bedside Watch-holder Co., of Harrogate, either direct or through wholesale houses. The screens can be used for vaporising or for warming baby's food, while at the same time a bright light is thrown upon the face of a watch hung upon the hinged door of the screen.



Electrical Novelties.—Perhaps at no time in the world's history has electricity been so popular as a source of power and light as at present, and probably never before were the rising generation so greatly interested in electrical novelties as they now are. Several firms have laid themselves out to cater for the business that has thus sprung up in these articles, and one of the best-known is the firm of F. Darton and Co., 142, St. John Street, Clerkenwell, E.C. The new issue of their catalogue which will shortly be published contains some thirty odd pages, giving particulars of many new electrical novelties, as well as of those that have previously been introduced, and chemists who are interested in this class of goods should write at once for a copy of the catalogue.

"Syphon" Stoves.—Messrs. S. Clark and Co., Compton Works, Canonbury Road, Highbury, N., having made a special study of heating stoves for use in dwelling houses, offices, shops, and similar places, have introduced "Clark's Patent 'Syphon' Hygienic Stoves" for using coal gas or petroleum. It is well known that "open fires," whether coal or gas, are wasteful, inasmuch as a large percentage of heat passes directly up the chimney or flue, and is not utilised. Messrs. Clark's "Syphon" Stove is constructed so as to require no flue pipe, thus the whole heat generated is retained in the apartment, and great economy is effected. The heat produced is pure, no fumes or smell being given off. The stoves may be placed in any position in an apartment, and can easily be moved, when necessary, from room to room. All who require a simple, economical, and hygienic stove, should write to Messrs. Clark for one of their illustrated catalogues.

Enlarging Apparatus.—The "Express" daylight enlarging and reducing apparatus has been recently introduced by Messrs. W. Butcher and Sons for those who desire to have an instrument capable of enlarging, or reducing, to various sizes with a minimum of trouble. The enlarger is made in polished mahogany, with strong bellows, and is an entirely new construction, closing into the smallest possible space when not in use, and requiring no focussing adjustments, as all the usual size of enlargements and reductions can be made by fixing the apparatus at the respective positions as marked on the scale attached at the side. The prices are £2 2s. for 1/1 plate; and £3 3s. for 12×10 size. The "Valu" daylight enlarger, shown in the illustration, is a special cheap apparatus for enlarging $3\frac{1}{2} \times 2\frac{1}{2}$ and $\frac{1}{4}$-plate negatives, the price being 7s. 6d., complete in cardboard box. Messrs. Butcher and Sons' No. 6a Enlarging Lantern is a cheap model to retail, without objective, at £2 15s., $\frac{1}{4}$-plate size with 5-inch condenser; with objective the price is £3 10s.



PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. Vincent Shaw, chemist, has purchased the business at 8, Acre Street, Lindley, Huddersfield.

Mr. A. Gilchrist has recently acquired the old-established business of the late W. M. Maxton, chemist, Kelso.

Mr. Mason, chemist, Raeburn Place, Edinburgh, has taken over the business of Mr. Sutherland, 76, Rodney Street, Edinburgh.

Mr. Thomas McMaster, chemist, Partick, has acquired the business formerly carried on by Dr. Hunter at Dumbarton Road, Whiteinch.

Mr. J. Mitchell Wilson, Shettleston, has taken over the business lately carried on by the Caledonian Chemists, Limited, at 153, New City Road, Glasgow.

Mr. E. H. Kendall, who has been for several years an assistant with Mr. C. B. Allen, of Kilburn, N.W., has recently opened a business at 195, Widmore Road, Bromley, Kent.

Mr. John Taylor, member of the Pharmaceutical Council, who was unable to attend the November meeting of the Council on account of illness, is better, though far from well, and has resumed his duties.

Mr. W. A. Dotchin has sold his business at Howick Street, Monkwearmouth, to Mr. J. Roberts, chemist, Newcastle, and is engaged with Messrs. Roberts and Taylor Gibson, 17, Bigg Market, Newcastle-on-Tyne.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

The Drug Sales.

London, Thursday, November 26, 1903.

The supplies at to-day's auctions were moderate, and comprised New Drugs only; the demand was fair, but the "features" were not numerous. Menthol was disposed of at a lower price than that paid privately; but in view of the unsettled state of the market this was perhaps what might have been expected. Peppermint Oil, H.G.H., sold at fair rates, but Kobayashi dementholised was lower. Gum Benjamin sold well with strong competition. Cardamoms were in very moderate supply and slightly dearer, and the offerings of Senna were small. The Cascara Sagrada catalogued was bought in, and a good quantity of Cape Aloes was disposed of at fair rates. In the private market things are exceedingly quiet, and fluctuations are not numerous. It seems as though Shellac has at last reached its highest mark, and cables from Calcutta come lower; as yet, however, this has not affected the price here, owing to the small supplies on the spot. Although this article has been the subject of considerable speculation, this has not been the sole reason for its rapid and continued advance in price. Of late new uses have been found for this product, and it has been employed in the manufacture of a rubber substitute. The legitimate demand is therefore large, whilst the output is limited. As regards Opium, reports received from Smyrna state that during the last few weeks considerable business has been done for America; the prices were virtually unchanged. The weather continues favourable for the sowing, and the general impression in Smyrna is that lowest prices have not been reached. If buyers hold off for a time needy holders may have to make concessions, but should large buyers continue to operate and speculators come forward, a slight advance may be the result. The market here has been very quiet, and only sales of shipping and manufacturing qualities at the old rates have been made. Codeine and Morphine are unchanged. Concerning Cod-liver Oil, it is not possible to forecast with any degree of certainty what the results of the approaching cod-fishing season are likely to be. Meanwhile news comes from Norway to the effect that the fish are being frightened off by the seals, which have come down in large numbers from Russian waters. Whether this report is correct, or only a fish story, remains to be seen. Last season the seals kept the cod (at the spawning period) away from the banks for so long that when these latter were at last captured, their livers were remarkably lean. Small captures of big, fat fish, off the North coast of Norway are already reported, however, and the season may not be so bad as some seem to anticipate. But the new season's oil can scarcely be expected before the early part of March. Quinine is quiet.

ALOES.—A good quantity of Cape sold at prices varying from 41s. for dull softish to 49s. for fair bright hard.

AMBERGRIS—Sold at varying prices up to 75s. per oz. for fair grey.

ANNATTO SEED.—3¾d. to 4d. were the prices paid for Madras.

ARECA NUTS.—A small lot of slight wormy sold without reserve at 11s.; the market price, however, is 17s. 6d. for sound and strongly held.

ARGOL.—Grey realised 53s.

BUCHU LEAVES.—Round green leaf realised 9½d., being unchanged.

CAMPHOR OIL—Sold at 32s. 6d. per cwt.

CARDAMOMS—Were in small supply, and sold rather better.

CASCARA SAGRADA.—Two year old bark was held for 85s.

CASSIA FISTULA.—30s. was paid for lean.

CASSIA OIL.—A bid of 2s. 10d. per lb. was refused for Cassia Oil (Umney's analysis, Cinnamic Aldehyde 76 to 77 per cent.).

CIVET.—3 horns, "not" of the finest quality, sold at 2s. per oz.

COCA LEAVES.—10d. was paid for brown Ceylons, and 1s. 2d. for green.

CROWN BARK.—A bid of 10¼d. was accepted.

EUCALYPTUS OIL—Realised 1s. 2d. per lb.

GUAZA.—3s. 3d. per lb. was accepted for an odd box.

GUM ARABIC.—For good grains 80s. was obtained.

GUM BENJAMIN.—Fine Sumatra was in small supply, and sold at high prices, up to £8 17s. 6d.; middling seconds at £5 5s., down to 95s. Siam was held at firm rates.

HONEY.—Jamaica was in small supply, and the prices paid varied from 24s. to 27s. 6d.

IPECACUANHA.—The demand was slow. Mattogrosso was held at firm prices, 6s. to 6s. 3d. A quantity of Minas was disposed of without reserve at 5s. to 5s. 4d.

LIME OIL.—Two cases were knocked down at 1s. 3½d. to 1s. 4d. for distilled.

MENTHOL.—Kobayashi, offered "without reserve," realised 19s.

PEPPERMINT OIL.—H.G.H. was sold, without reserve, at 12s. 3d. to 12s. 6d. Japan dementholised (also without reserve) Kobayashi realised 5s. 3d. to 5s. 9d., and Yazawa 5s. 6d.

SARSAPARILLA.—Jamaica sold at 1s. 1d. per lb. Lima 11d. to 1s., and nondescript at 8d.

SEEDLAC OIL.—9 bags sold at £8 2s. 6d. per cwt., and for part block £7 10s. was paid.

SENNA.—Only 40 bales Tinnevelly were offered; small green leaf sold at from 2½d. to 3¾d., being about last prices. Shipments coming in are small.

TAMARINDS.—Good Barbados sold at 14s. 6d.

TONQUIN BEANS.—A case of black sold at 11d., some foxy at 4½d.; whilst good frosted were held at 1s. 3d.

WAX.—Prices were firm where sales were made. Zanzibar sold up to £6 15s.; Madagascar, £7; West Indian, £6 12s. 6d. (subject); Mozambique, £6 17s. 6d.; Jamaica beeswax bought in at £7 12s. 6d. to £7 17s. 6d.

General Markets.

ACID CITRIC.—1s. 0½d. per lb.

ACID TARTARIC.—English on the spot, 1s. 1d.; foreign, 1s. to 1s. 0½d.

ARROWROOT—Was rather easier at the sales on Wednesday. A fair quantity of St. Vincent sold, good manufacturing at 1⅞d.

BELLADONNA ROOT.—There is some offered on the spot at 37s. to 42s. per cwt.

BISMUTH CARBONATE.—8s. 1d. per lb.; subnitrate, 7s. 4d.

BLEACHING POWDER.—English. £5 5s.

BORACIC ACID.—Crystals, 22s. 6d.; powder, 24s. 6d.

BORAX.—Crystals, 13s. 6d. to 14s. 6d. per cwt., according to quantity; powder, 15s. 6d. to 16s. 6d.

BROMIDES.—Unaltered.

CARBOLIC ACID.—Crystals, 39-40°, 5d.

CASTOR OIL.—A trifle easier if anything. Belgian 1sts, £20 2s. 6d.; 2nds, £18 12s. 6d.

CLOVES.—No Zanzibar were catalogued for the spice sales. Penang were bought in. In the private market the price is 7⅜d. for Zanzibar.

COCAINE.—13s. 6d. to 14s. per oz. for the hydrochloride, according to quantity. For the pure alkaloid the price is 16s. to 16s. 6d.

COCOANUT OIL.—Ceylon spot, £25 10s. Cochin spot, £30 10s.

CODEINE.—The quotations are as follow:—8s. 11d. per oz. for the pure alkaloid, 7s. 11d. for the muriate and sulphate, 7s. 1d. for the phosphate, with a slight reduction for large quantities.

COD-LIVER OIL.—Best quality is quoted at 475s.; for oil a little bit off colour, 450s. is asked; and for third quality, 400s. is the price.

ESSENCE OF LEMON.—New crop samples of good brands are now coming in; these are offered at 2s. 3d. to 2s. 4d. for forward contract c.i.f. terms.

GINGER.—All the offerings of Cochin were held at the auctions on Wednesday.

GLYCERIN.—68s. per cwt. for ½-ton lots.

INSECT FLOWERS—Are just now very cheap. Triest advisers say that the market is getting very sensitive. The prices are 92s. to 100s., c.i.f. for closed; and for wild, 102s. to 120.

IODIDE OF POTASSIUM.—The convention price is unchanged at 8s. 9d. per lb.

IODINE.—9s. 9d. to 10s. per lb. for the resublimed, according to quantity.

IODOFORM.—11s. 8d. per lb. for the pure crystals or powder.

ISINGLASS.—At the auctions held on Tuesday the total of all descriptions offered amounted to 665 packages. There was a fairly steady demand, and about one-half of the offerings was disposed of at generally unchanged rates.

MERCURIALS.—Calomel, 2s. 8d.; corrosive sublimate, 2s. 4d.; red precipitate, 2s. 11d.; white precipitate, 2s. 11½d.; mercuric sulphate, 2s. 4d. per lb.

MORPHINE.—4s. 6d. to 4s. 8d. per oz. for the hydrochloride.

NUTMEGS.—No Penang or Singapore sold at the spice sales. Three barrels West Indian sold 112's dark at 11d.

OIL OF SWEET ORANGE.—New crop, superior quality, 5s. 10d. c.i.f. prompt shipment.

OPIUM.—Considerable business has been done in Smyrna for America at practically unchanged prices. The market here has been very quiet, with a few sales of shipping and manufacturing qualities at old rates.

OXALIC ACID.—2⅝d. to 2⅞d., delivered free London.

PEPPER—Was slow at the spice sales, and only a few bags of white sold, good at 10½d.

QUICKSILVER.—£8 7s. 6d.

QUININE.—The market is quiet. The following are the nominal prices for spot and December, 1s. 0⅜d.; for March delivery, 1s. 0⅝d. German makers' price remains unchanged at 1s. 1d.

SHELLAC.—Cables from Calcutta come lower; on the spot, however, quotations are firm, with a market quiet.

LONDON GAZETTE NOTICES.

PARTNERSHIPS DISSOLVED.

Mayou, J., and Thornley, J. H., chemists and druggists, Birmingham, under the style of Mayou and Co.

Armstrong, J., and Scott, W., veterinary surgeons, under the style of Armstrong and Scott, Penrith.

Anning, J. J., and Jackson, G., carrying on business as chemists and druggists, 145, Woodhouse Lane, Leeds, formerly under the style of J. J. Anning, but recently under the style of George Jackson.

RECEIVING ORDERS.

Male, Elliott William Graves, late Cheltenham, Gloucestershire, now Newport, Monmouthshire, chemist and sub-postmaster.

Rains, Robert Harding, 207, Derby Street, and 362, St. Helens Road, Bolton, Lancs., surgeon.

BANKRUPTCY INTELLIGENCE.

Wm. Longwood Fewster, Chemist and Druggist, Dewsbury. This debtor applied at the Dewsbury County Court, on November 18, for his discharge; the petition was filed in 1901. The liabilities were put down at £408 16s. 6d., and the assets, which were estimated at £266 7s. 6d., realised only £74 7s. 5d., this being due mainly to the fact that trade-effects only produced £36 10s. 1d., as compared with £121 15s. 9d., the figure they were estimated at. A first and final dividend of 1s. 6½d. had been paid. Debtor attributed his failure to keen competition, bad trade in the neighbourhood owing to strikes, and shortness of capital. The Judge said it appeared to be a case of clear misfortune. Bankrupt would be discharged on consenting to judgment of £70 being made against him. This would enable a dividend of 5s. in the £ to be paid. Debtor consented, and the discharge was granted.

Re **Samuel Hurman Longman**, Chemist and Druggist, 10, Fforchaman Road, Cwmaman, Aberdare.

In this case, where the deficiency was estimated at £148 odd, the debtor attended for his public examination at the Aberdare Bankruptcy Court, on Monday, before the Registrar (Mr. R. Williams), and was examined at considerable length by the Official Receiver (Mr. W. L. Daniel), in reply to whom the debtor said that he had been in business about three years altogether. His assets now amounted to £19 odd. Three years ago he carried on a chemist's business at Highbridge, near Bridgwater, but ceased to do so on the occasion of his assigning the business to a trustee for the benefit of creditors. His liabilities then totalled about £600 or £700, and about 4s. in the £ was paid, though he believed that if the business had been disposed of as a going concern, instead of being carried on by the trustee, possibly it would have realised sufficient to pay 20s. in the £. Questioned as to why he made this statement, debtor said that he had given a high price for it, and he had bought it as a going concern. He admitted that he had not taken the precaution to see the ledgers or books of account to see what his predecessor's trade was. He only saw a part of the day-book and the prescription book. There was much prescription business done. The Official Receiver asked: How came you to give a high price for a business of that kind? I had been told that business could be done there.—But you took no steps to see what business had been done by your predecessor? I could not find out exactly.—You didn't try, seemingly. Pressed to give an answer to this point, debtor admitted that he had not.—The mistake you did was to undertake to purchase a business you knew nothing at all about. After leaving Highbridge he had been engaged as an assistant by Messrs. Smith and Co., of Aberdare, at a salary of £60 a year, indoors. He had, however, left Messrs. Smith and Co. because it "was not comfortable in the house." It was in March last that he took over the present premises at Fforchaman Road. His knowledge of the district was that which he had been able to gain from his taking walks there on the closing day, and friends had also told him that Cwmaman would be a good place for business, as there were no chemist's shops in the district, which comprised a population of about 6,000 inhabitants. His mother had given him £150 to start with, which was placed to his credit at the bank on April 4. Though he took the premises in March, he was not able to go into the business until May, owing to the delay of the contractor in making the alterations, and the difficulty experienced in getting the tenant to go out. He had only carried on business there for about six months, but during that time he had sustained a loss of about £148, or, at the rate of £1 per day. By June 30 he had not only exhausted the £150 paid into the bank, but he had overdrawn to the extent of about £11 odd. His acccounts showed that he had spent about £9 odd for cab fares. The Official Receiver, in the course of the examination, strongly commented on what he characterised as debtor's extravagance in face of the paltry business which he was doing, and the fact that this was the second failure within three years, and asked if debtor could give him any explanation.—Debtor, in effect, said that he could not. The only books of account which he kept were a ledger with debtors, and a poison and a prescription book. From March 10 to October 14, the cash receipts amounted to £260 odd. He averaged his takings at £4 a week. The goods received during the same period came to £175 odd.—The Registrar having remarked that debtor had been reckless and careless, said that there was, nevertheless, nothing to be gained by keeping open the examination.

The public examination of the debtor was then declared closed.

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

The Students' Columns.

I shall be pleased to avail myself of your offer to supply specimens of jaborandi leaves. I should also be pleased to have specimens of long and crenate buchu. I find the Students' Column the most useful part of *P.J.*, and hope to enter for competition next week. Although not expecting a prize. I shall be able to judge my progress. I fancy, too, that it will be of great help to me in the Jacob Bell competitions, which I purpose to enter for again in June. Thanking you in anticipation of specimen.

November 20, 1903. "R. R."(256/37).

Specimens of Eucalyptus and Angophora.

I beg to inform you that I have undertaken the genera *Eucalyptus* and *Angophora* for Engler's 'Pflanzenreich,' and that I shall be grateful for any assistance by loan of specimens or otherwise. I do not think that my work will be finished for two years at the earliest.

J. H. Maiden, Director.

Botanic Gardens, Sydney, October 12, 1903.

Recipe for Toilet Cream.

Please accept my best thanks for your reply and formula in this week's issue (see *P. J.*, November 21, page 772). The recipe is just what I required, and works well. I send you a sample of the finished cream, which will attest to its value as formula. It leaves the skin nice and clean after use, and is, without doubt, efficacious—a fact not to be overlooked—so many of these later-day things, elegant they may be, but not much else methinks.

November 21, 1903. "R. S. D." (257/31).

The Medicine Stamp Difficulty.

I shall feel obliged by your sending me twenty-five reprints from current Journal of the article entitled "Chemists and the Medicine Stamp Acts," for distribution to the chemists in my division. It is the best *résumé* of the present situation that I have seen up to now. I enclose also five shillings and sixpence for copy of the 'P. J. F.,' and I think you are to be congratulated for the very able manner in which you have got the mass of formulæ together. I think it will tend to keep the chemists better amalgamated in the future. As Shakespeare (or someone else) said, "If we don't hang together, we shall soon hang separately."

Todmorden, November 23, 1903. H. P. Lovatt.

The Pharmacy of Phenol.

I notice that the ordinary dispenser of to-day is liable to make certain slips in compounding preparations of phenol which were impossible to assistants of some short time ago, who were more prone to consider the effects than the strengths of carbolic solutions. Probably it is because, as Mr. Peck points out, even the qualified chemist has had so little experience of counter-dispensing. He is taught in the class-room that the glycerin solution of carbolic acid contains 20 per cent., and the ointment 4 per cent. Fortified with these figures, but without practical knowledge that the action of phenol depends so much on the basis in which it is exhibited, when a customer asks him for a few pennyworths of carbolic lotion for a sore leg, he attempts to dispense a solution of 4 or 5 per cent., and when this is applied the patient becomes a life-long enemy to him. Or, again, with that cocksuredness which characterises the fledgling chemist, when he finds a prescription calling for 1 oz. of phenol with 3 oz. of alcohol, he assumes that the person who wrote it was ignorant of the fact that carbolic solutions are usually made about 2 per cent., and he takes on himself to substitute a drachm for an ounce. Or, because he knows that carbolic tooth-gum is a common remedy for toothache, he undertakes to apply pure phenol to a carious molar, and smears it along the lips, with disastrous effects. Again, if he gets a prescription for 2 drachms of carbolic acid with 3 oz. of vaseline, he melts both together, and pours it into a bottle whilst hot, with the result, of course, that the acid crystallises out and lodges in the bottom of the bottle, and when the patient applies this portion to his ulcer it plays Hades with it. Now, I want to insist on the fact—known, of course, to many of your readers—that the action of phenol on an abraded surface differs materially, and in a way immediately appreciable by the user, according as the crystal acid or the liquefied is used; accordingly, it is dispensed with common or distilled water, with strong alcohol or weak, with vaseline or hard paraffin, or mixed with lard or with vegetable oils, or fluid paraffins, with lanoline, hydrous or anhydrous, with glycerin, or with glycerin and water. It is either an anæsthetic, or an irritant, or a slight antiseptic, according to its strength and its combination; or according as it is applied to a cutaneous or a mucous surface, and according as to whether it is in solution, as in alcohol, or a mere mechanical mixture, as in most carbolic ointments.

Dublin, November 23, 1903. J. C. McWalter.

The Pharmaceutical Journal Formulary.

I take this opportunity to thank you for your kindness in inserting so many of my formulæ in the 'P.J.F.' I think you have inserted all I have sent, with two exceptions. If you could insert them, all my troubles will be at an end. I have not belonged to the Society for years, but, on account of your good work in this matter, I shall rejoin in the New Year, and continue a member.

November 19, 1903. "H. P. W." (255/36).

I am very glad to add my humble quota to the many congratulations that have already been showered on your head. I think you have achieved results, in the interests of our trade, which two years ago seemed almost hopeless. I hope your services on behalf of our craft will be rewarded by a great increase of membership.

Falkirk, November 18, 1903. James Bryce.

I am glad to see you are now taking a real interest in us, and we look on the Journal as a friend and a thoroughly representative Journal, not of a class, but of the ordinary chemist, like myself.

Leeds, November 19, 1903. J. H. Beacock.

I heartily congratulate you on the great improvement in the Journal, and note with pleasure the great interest you have taken in such an important matter. Wishing the Journal and the 'P.J.F.' every success.

November 20, 1903. "J. C." (256/1).

I thank you heartily for the prompt attention you have taken on our behalf. It will no doubt be a great help, and should have a tendency to increase membership of the Society now that outsiders are beginning to see that the Pharmaceutical Society is not dead to the interests of the profession.

Bulwell, November 21, 1903. W. Rayner.

I hail with delight the new departure from the old-world groove, and the adoption of up-to-date methods in the conduct of the said Journal and Society. May they both flourish for the benefit, unity, and organisation of the body pharmaceutical. Advance, Society!

Brighton, November 13, 1903. C. A. Blamey.

Aerated Water Manufacture.

In aërated water making (syphons) on a small scale, is the "Agitator" or "Saturator" type of mixer best?

November 23, 1903. "T. B." (102/4).

BIRTHS.

Fairweather.—On November 19, at 37, West Holmes Gardens Musselburgh, the wife of J. Y. Fairweather, M.P.S., of a son.

Paris.—On November 24, at "The Hollies," Hook Road, Epsom, Surrey, the wife of William Paris, M.P.S, of a daughter.

Prior.—On November 18, at 19, High Street, Stamford, to Mr. and Mrs. James S. Prior, a daughter.

MARRIAGE.

Pratt—Wills.—On November 11, at the Presbyterian Church, Cape Town, Arthur Pratt, of Johannesburg, to Georgina, eldest daughter of G. S. V. Wills, of South Croydon, Principal of the Wesminster College of Chemistry, London.

DEATHS.

Campion.—On November 10, Rowland Campion, Chemist and Druggist, Erdington, formerly of Ashby-de-la-Zouch. Aged 81.

Negus.—On November 18, Samuel Negus, Pharmaceutical Chemist, Northampton. Aged 97. Mr. Negus, who joined the Pharmaceutical Society in 1842, and was a life member, had carried on business in Northampton for over fifty years, retiring about twenty years ago in favour of his nephew, the late Mr. Samuel T. Negus, who was succeeded by his son, the late Mr. John Negus. On the death of the latter, the business passed into the hands of Mr. Irvine Negus, second son of Mr. S. T. Negus, who has now retired and is living at Eastbourne.

Redmayne.—On November 21, John Redmayne, Chemist and Druggist, Liscard. Aged 78.

Warren.—As we briefly announced, last week, William M. Warren, general manager of Messrs. Parke, Davis, and Co., died at his home, 154, Lafayette Avenue, Detroit, Mich., on November 11. Aged 39. Mr. Warren entered the New York office of Messrs. Parke, Davis, and Co. at the age of sixteen, and gradually rising in the esteem of his employers, in 1886 he was removed to the head office at Detroit. Here he studied the details of manufacturing in the firm's laboratories, and later he gained considerable experience as a commercial traveller. He then became assistant to the general manager, Mr. G. S. Davis, and on Mr. Davis retiring in 1896, Mr. Warren succeeded him as head of the establishment. During Mr. Warren's management, many additions and improvements have been made to the laboratories at Detroit, and numerous branch houses have been established in various parts of the world. Mr. Warren's wife—the daughter of Theodore D. Buhl, president of the firm—died some three years ago, and he himself had been unwell for about three months, but was able to attend to business. On October 29, however, he had an attack of acute indigestion, and fell, aggravating a spinal trouble from which he had suffered for some time. He became gradually worse, and died from spinal meningitis. His death is sincerely regretted by his many friends and business associates.

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Stomach and Liver Pills (A. J. W.—102/6).—The concession does not apply to sales by chemists only.

Menthol (G. C. J.—101/31).—You cannot dissolve in glycerin; will not a solution of olive oil serve your purpose?

Sales at Branch Shop (J. W.—101/33).—You may do the same at one place as at the other.

Infants' Friend (J. J. C.—102/3).—The unaltered label may be used without stamping the preparation.

Corn Shields (C. and J.—102/2).—Your question is answered by an editorial note in the *P.J.* of October 10 last, at page 515.

Library (P. F. R.—256/37).—Yes, student-associates in the provinces may borrow books from the Society's Library, postage being paid one way.

Sale of Poison (T. F. T.—102/7).—(1) The sale must be properly registered in the poisons' book. (2) Each separate packet should be duly labelled.

Waxes (C. N.—101/26).—Wright's 'Fixed Oils, Fats, Butters and Waxes' (Griffin, 25s. net). See also the *P. J.*, January 4, 1902, page 19. We do not know the other book you mention.

Liability to Stamp Duty (H. M. L.—257/18).—Thanks for the information you send. Your suggestion has been anticipated by the preparation of the summary printed in this week's issue at page 813.

Students' Competition (F. T.—257/9).—(1) Student-associates only may enter for the competition. (2) If you fill up the proper form and pay your subscription now, you will receive the Journal regularly until the end of 1904.

Digitalis Preparations (A. Y.—101/28).—The chief principle is digitoxin, but digitalin, digitonin, and digitin are also stated to be present. A fresh infusion is understood to be more active than the tincture.

Recipe for Pills (A. D.—258/3).—Your recipe will be included with the rest. You can avoid liability by selling pills without a label if you are careful not to hold out or recommend them in handbills, advertisements, etc. A rubber stamp may be used as you suggest.

Eucaine (G. C. J.—101/31).—Will it not serve your purpose if β-eucaine, 3 grains, and sodium chloride, 24 grains, are dissolved in distilled water, 7 fl. ounces, the solution being rendered sterile before use? For local anæsthesia of the ear, throat, or nose, β-eucaine, 1, and cocaine, 1, have been dissolved in aniline, 5, and rectified spirit, 5.

Recipes (J. D.—102/3).—Your recipes are being included. Provided you comply with the conditions laid down by the Inland Revenue authorities, you may issue a handbill as suggested, but you must be careful how you name the powders, as there is now some doubt about the use of the word "purifying." Read the article on the subject at page 773.

Dental Cement (O. K.—102/5).—It is probably like one of the following:—(1) Mix desiccated zinc sulphate, 2, with zinc oxide, 3 to 5, both the ingredients being in fine powder. Make into a paste, when required for use, with a solution of gum acacia, 120 grains, in distilled water, 1 pint; or dissolve zinc chloride, 10 grains, in distilled water, 1 fl. drachm. (2) Mix finely powdered zinc oxide with 2 per cent. of calcined magnesia, and make into a stiff paste, when required for use, with syrupy phosphoric acid.

Calendar for the Week (Nov. 29—Dec. 5, 1903).

Days of M	Days of W	Events of the Week.	Sun Rises	Sun Sets.
29	S	**First Sunday in Advent.**	7.41	3.55
30	M	Swift born 1667, died October 19, 1745.	7.42	3.54
1	Tu	Blackpool and Fylde Chemists' Association, at 9 p.m.	7.44	3.54
		Grimsby and District Chemists' Association, at 9 p.m.—General Meeting.		
		Wakefield and District Chemists' Association, at 8.15 p.m.		
2	W	Pharm. Soc. G.B., 17, Bloomsbury Square, at 11 a.m.—Meeting of Council.	7.45	3.53
		Pharm. Soc. of Ireland, 67, Lower Mount Street, Dublin, at 3 p.m.—Meeting of Council.		
		Stockport Chemists' Association, at 9 p.m.		
3	Th	Chemical Society, Burlington House, at 8 p.m.—Ordinary Meeting.	7.47	3.53
		Chemists' Assistants' Association, Portman Rooms.—Cinderella Dance.		
		Great Yarmouth Pharmaceutical Association, at 8 p.m.		
		Linnean Society, Burlington House, W., at 8 p.m.—Evening Meeting.		
4	F	○Full Moon, 6.13 p.m.	7.48	3.52
5	S	Inter-Pharmacy Football League.—Metros *v.* London College.	7.49	3.51

PUBLICATIONS RECEIVED.

Banks and Their Customers. By Henry Warren. Seventh Edition. Pp. 155. London: Effingham Wilson, Royal Exchange, E.C. 1904. From the Publishers.

The Photo-Miniature—Aërial Photography. June, 1903. Pp. 146-192. Price 6d. net. London: Dawbarn and Ward, 6, Farringdon Avenue, E.C. 1903. From the Publishers. This number deals with telephotography as applied to aërial photography and the making of bird's-eye views.

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Abraham, Allen, Allgood, Andress, Andrews, Anthony, Archer, Atkins, Atkinson, Auckland, Baker, Bamford, Banbury, Barlow, Bartlett, Batchelor, Bateson, Battle, Batty, Bell, Beresford, Betty, Bilson, Birkbeck, Blair, Blakeley, Bloor, Bolton, Bonnet, Borrow, Bourne, Brackenbury, Bradshaw, Brand, Bransby, Brassington, Breeze, Briggs, Brigham, Brisley, Bristow, Brown, Bryce, Buchan, Buckley, Burch, Burkinshaw, Burnett, Burr, Burrell, Campkin, Carruthers, Chambers, Chaston, Christie, Clarke, Clarkson, Clave, Cleobury, Cleworth, Clift, Cockle, Colley, Collins, Colwill, Conway, Cook, Cooper, Cossey, Coulson, Combie, Cran, Crow, Crozier, Culbert, Cullen, Cummings, Cutcliffe, Cuthbert, Dalton, Dampney, De Peare, Denton, Dodd, Dorning, Dotchin, Douglas, Duncan, Dunn, Dunning, Dutton, Dyson, Edge, Edwards, Eley, Ellis, Ewell, Fairley, Fairweather, Fast, Fielding, Finlay, Fletcher, Flower, Forbes, Fortnam, Francis, Freeman, French, Fryer, Galbraith, Gardiner, Garner, George, Gibson, Gilliatt, Glendinning, Goble, Goldby, Goodall, Gough, Gould, Gowen, Graham, Gray, Green, Gresswell, Grimble, Gross, Haines, Halkyard, Hallett, Hals, Hamer, Hamnett, Hannah, Harden, Harding, Hardy, Harrison, Harum, Haslop, Havard, Hawksworth, Head, Hearder, Heaver, Henderson, Henshaw, Hibbert, Hick, Highley, Hill, Hitchcock, Hitchin, Hodgson, Hogg, Holding, Holt, Hopkins, Hopps, Horner, Horton, Howes, Hughes, Hugill, Hunt, Jack, Jackson, Jeffrey, Jenner, Jennings, Jewson, Johnston, Johnstone, Jones, Kent, Kelner, Knowles, Lander, Lapthorn, Lee, Leith, Litchfield, Lloyd, Lovatt, Lowther, Lucas, Lyon, McCowan, Macdonald, MacGeorge, McHardy, Macmillan, Macnaught, Macnaughton, McLaren, MacWalter, Macnie, Maiden, Martin, Martindale, Mason, Matthews, Matz, Maynard, Mayor, Mercer, Middleton, Miller, Milne, Milton, Morgan, Morris, Moss, Moverley, Moxon, Mumford, Munro, Murdoch, Neale, Nettleship, Newbould, Newey, Nicklinson, Nicol, Nuthall, Onion, Orton, Osmond, Palmer, Park, Parker, Paris, Parlby, Patchett, Paton, Peel, Penberthy, Pentney, Perkins, Perry, Philpot, Pickard, Pickup, Pidd, Pilvin, Polley, Pollock, Pott, Potter, Powell, Powers, Prescott, Price, Prince, Prior, Raynor, Rearsley, Rees, Reynolds, Rhind, Riches, Richards, Roberts, Robeson, Robinson, Roebuck, Rose, Rowell, Rowlands, Ruoff, Ryley, Sandford, Sandiland, Sargeant, Saunders, Senior, Shaw, Sheard, Shuttleworth, Smith, Squire, Stableforth, Stephens, Stewart, Stirrup, Stockdale, Stocks, Strode, Strongitharm, Sumner, Tanner, Tate, Taylor, Taylorson, Thomas, Thompson, Thorne, Thorpe, Tinker, Tod, Todd, Town, Townsend, Trinder, Troughton, Tulley, Turner, Waddington, Walker, Ward, Watkins, Watt, Waugh, Wedden-Sims, Welton, Wharton, Whigham, White, Whitfield, Widgery, Wild, Wilfred, Wilkin, Williams, Willis, Wills, Wilson, Wink, Winter, Wise, Withers, Wolstenholme, Wood, Woodhouse, Wright, Wynne, Yates, Young.

Telegrams "PHARMACEUTICAL JOURNAL LONDON"
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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

THURSDAY, DECEMBER 3, 1903.

AN IMPORTANT LETTER from the Board of Inland Revenue will be found at page 868.

STILL ANOTHER SUMMARY of the present position with regard to the Medicine Stamp Duty Law is published in this issue.

THE REPORT OF THE ROYAL COMMISSION ON ARSENICAL POISONING has been issued. Standards are suggested for the purposes of the Sale of Food and Drugs Acts.

THE "TABLOID" CASE has not yet been decided. The arguments of counsel were concluded on Friday, and it is expected that judgment will be given on Monday next.

ANOTHER EVENING MEETING of the Pharmaceutical Society will be held at 17, Bloomsbury Square, on Tuesday, December 8, when some experiments with radium will be performed.

ANY MEMBER or student-associate who may not have subscribed for a copy of the 'Pharmaceutical Journal Formulary,' is advised to fill in at once the subscription form which will be found in the '*P.J.* Inset.'

SEVERAL PROPRIETARY MEDICINES have been analysed by Dr. ROBERT HUTCHISON, but the results of his analyses are in many cases only approximately accurate. He finds them in most instances to be comparatively harmless.

KELLER'S METHOD for the assay of alkaloidal drugs has from time to time been modified. Mr. A. B. LYONS now suggests a new improvement which, it is thought, is free from the objections to which the original method is open.

REPRESENTATIVES OF THE PHARMACEUTICAL SOCIETY have been appointed to attend a Conference with the Consultative Committee of the Board of Education on the subject of a general system of leaving certificates for Secondary Schools.

MUCH OF THE HISTORY of the way in which the concession with regard to identification of formulæ was granted by the Board of Inland Revenue, and afterwards withdrawn, may be gathered from the article which begins on this page.

THE LEEDS AND DISTRICT Chemists' Association has held a very successful dinner. Several meetings and social functions are reported from other centres of pharmaceutical activity, and the General Medical Council has been sitting during the past week.

FIVE PENALTIES, each of forty shillings and costs, were imposed yesterday at Marlborough Street Police Court on a limited company, under the Medicine Stamp Duty Acts. The summonses for the most part related to medicines described by proper names in the possessive case.

COD-LIVER OIL and its adulterants formed the subject of a paper read before the Midland Pharmaceutical Association on November 26 by Mr. E. W. MANN, and printed in full in this issue. The B.P. sulphuric acid test is considered to be of no value, since a violet colour is given by many fish-liver oils.

THE COUNCIL of the Pharmaceutical Society decided by a large majority, at its meeting on Wednesday, to send a deputation to the Board of Inland Revenue on the subject of the Board's practice in administering the Medicine Stamp Duty Acts. The deputation is to consist of the President, Vice-President, and Mr. CARTEIGHE.

THE BENEVOLENT FUND ELECTION is to take place on Tuesday next, the 8th inst. The finances of the Fund are not so flourishing as they might be, and any who may send subscriptions before Tuesday will be entitled to vote. At the present time, there is only some £300 in hand to meet grants of about £600, which must be paid before Christmas.

RADIUM is as much to the front as ever. Sir WM. RAMSAY is responsible for the suggestion that possibly gold may be changing slowly into silver and copper. Certainly radium and various other elements of high atomic weight appear to be decomposing into elements of low atomic weight, such as helium. It may be remarked that the "fresh" emanation from radium does not show the spectrum of helium, but, after a time, helium is produced in minute and increasing quantity.

A FALL of 1s. 9d. in the price of Cocaine is the chief feature of the drug markets this week, The hydrochloride is now quoted at 11s. 9d. per ounce, for quantities of 175 ounces.

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THE MEDICINE STAMP DIFFICULTY.

THE Council of the Pharmaceutical Society has decided to send a deputation to Somerset House and, for the present therefore, we refrain from criticising the modifications in practice announced by the Board of Inland Revenue last week. It may be pointed out, however, that the Board of Inland Revenue has been busily engaged for several months past in considering how the change in its practice, regarded as necessary, can be effected with the minimum of inconvenience to everyone concerned. The unfortunate circumstance is that the Board has been prevailed upon to publish the results of its deliberations piecemeal, and before it was possible to consider those results as a whole. As an almost necessary consequence, the pressure put upon the authorities by various interested parties has led to so-called concessions being made in haste and withdrawn with undue lack of consideration for chemists and druggists. Many chemists have had fresh stocks of labels printed in order to comply with what they were reasonably entitled to regard as the regulations which would come into force on January 1 next, but those labels must now be supplemented or replaced by others containing, in each case, a specific reference to the particular formula in accordance with which the medicines are prepared.

VOL. 71. No. 3398. (4th SERIES, VOL. 17. No. 1745.)

In a letter, dated August 14, the Board of Inland Revenue volunteered the information that a full statement of the formula would not be regarded as a condition necessary to bring a medicine within the scope of the special exemption, but that an adequate indication on the label of the ingredients of the medicine would be sufficient. Replying to that communication on August 21, the Editor of the *Pharmaceutical Journal* pointed out that it would be desirable to have some further guidance as to what would be regarded as an adequate indication of the ingredients, and suggested that the names of all the active medicinal substances present should be indicated on the label. He also asked (1) if the seller would be required to identify the particular formula adopted when several formulæ appeared in a recognised book of reference under the same name and (2) whether he might be permitted to submit for the opinion of the Board a list of names for approved remedies, concerning which it seemed desirable to have a definite statement as to whether or not they would be considered to incur liability to Medicine Stamp Duty. The following was the Board's reply:—

Inland Revenue,
Somerset House, London, W.C.
October 7, 1903.

Sir,—In reply to your letter of August 21, I am directed by the Board of Inland Revenue to state that they concur in your view that except in the case of articles prepared in accordance with formulæ in the British Pharmacopœia, and sold under the official names, or of articles stated in the labels to be made in accordance with formulæ contained in other recognised books of reference, the names of all the active medicinal substances contained in a medicine should be stated in the label, if chemists desire to take advantage of the exemption from Medicine Stamp Duty in the Act 35, Geo. III. c. 150, in favour of "known, admitted, and approved" remedies.

As regards the cases in which several different formulæ for a preparation appear in a recognised book of reference under the same name, the Board will not insist on a disclosure of the precise formula from which the preparation is made up.

I am to add that the Board will be prepared to consider a list of names of approved remedies such as that which you propose to submit.

I am, Sir,
Your obedient servant,
(Signed) E. E. Stoodley,
Secretary.

The Editor,
Pharmaceutical Journal.

The second paragraph of the foregoing letter was of such an unexpected character that publication of the communication was deferred until a representative of the Journal had been to Somerset House and asked if the paragraph was intended to apply to cough mixtures and other medicines which are described on the labels by reference to the ailment or ailments they are intended to relieve. The reply was in the affirmative, and as a result of that interview, the following communication was also received:—

Inland Revenue,
Somerset House, London, W.C.
October 13, 1903.

Sir,—I am directed by the Board of Inland Revenue to advert to their letter of the 7th instant, so far as it relates to medicines for which several different formulæ appear in recognised books of reference under the same name.

A letter was recently addressed from this Office to the Editor of the *Chemist and Druggist*, in reply to an inquiry similar to that raised by you, and it was then stated that such information should be given on the label as to enable the formula to be absolutely identified.

In order to obviate any confusion which may arise from the discrepancy between the two statements, the Board desire me to confirm the decision already communicated to you on this point, and to inform you that the terms of their letter to the Editor of the *Chemist and Druggist* have since been qualified in accordance therewith.

I am, Sir,
Your obedient servant,
(Signed) J. E. Chapman,
Assistant Secretary.

The Editor,
Pharmaceutical Journal.

On receiving this confirmatory letter, the Editor was still unconvinced, but, on going to Somerset House in person and explaining how wide was the application of the concession, he was definitely told that it was intended to apply generally to medicines sold by chemists and druggists. He was also informed that such a description as "Cough Mixture—Prepared according to the 'Pharmaceutical Journal Formulary,'" would be regarded by the Board as a sufficient disclosure, no specific reference to the particular recipe being required in order to bring the medicine within the scope of the exemption in favour of "known, admitted, and approved" remedies. Then, and not till then, the announcement of the Board's important concession was published in the *Pharmaceutical Journal.*

It is quite clear that the Board of Inland Revenue did not intend, in October last, to insist that labels for cough mixtures, etc., should contain specific references to the particular formulæ in accordance with which they are prepared. But the effect of certain influences, journalistic and otherwise, which have since been at work, has been to lead the Board to reconsider its decision, with the result that the benefit of the concession has now been restricted to preparations such as "Quinine and Iron Tonic," which did not require it, since the titles of those preparations disclose the principal active ingredients and, on that ground, the Board regards them as being *primâ facie* within the scope of the special exemption, without the necessity of any reference being made on the labels to the book of reference in which the formulæ are published. With regard to the concluding paragraph in the Board's letter of October 7, it is only necessary to say that a list of names of approved remedies was prepared and submitted to the Board, as explained in last week's Journal. That list was returned a month ago, with the names duly marked, but, thanks again, apparently, to a regrettable display of journalistic activity, the Inland Revenue authorities have found it necessary to intimate that some titles which were marked "Not Liable" at the beginning of November, must now be regarded as liable. The latest official information on the subject will be found at page 868, having been received just as the Journal was going to press.

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THE FORTHCOMING EVENING MEETING.

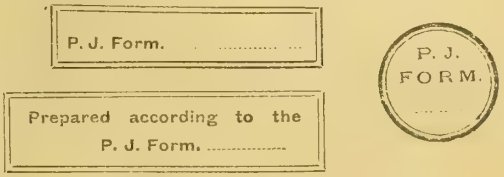
The next evening meeting of the Pharmaceutical Society in London will be held on Tuesday, December 8, at 8 p.m. Professor **Greenish** will read a short "Contribution to the Pharmacy of Chamomile Flowers," which will embody some of the work recently carried on in the Pharmacy Research Laboratory, and a brief paper, on "The Ash of Certain Drugs," which has been prepared by Mr. ohn C. Umney, will also be read. Messrs. H. B. and W. Everson will subsequently give a demonstration illustrating some of the typical properties of radium, Messrs. Hopkin and Williams having kindly offered to supply specimens of that remarkable metal for the purpose. As at the last meeting, there will also be an exhibit of pharmaceutical apparatus and the like. Professor Greenish will show a piece of apparatus designed for the automatic collection of a percolate in any number of definite fractions without the necessity of changing the receiver by hand. Other exhibits of an interesting nature have been promised, and it is hoped that the attendance may not fall short of that at the last meeting.

SLEEPING SICKNESS.

The Fourth Part of the Report of the Sleeping Sickness Commission has now been issued by the Royal Society, and contains a "further Report" (received on September 30) from Lieut.-Colonel D. Bruce, Dr. D. Nabarro, and Captain E. D. W. Greig. This contains accounts of a large number of experimental investigations, which lead to the following conclusions:—That the disease is caused by the entrance into the blood and cerebro-spinal fluid of a species of Trypanosoma, probably *T. nictitans*, first described from the West Coast of Africa, where the so-called Trypanosoma fever is probably sleeping sickness in an early stage; that the disease is transmitted from the sick to the healthy by a species of tsetse fly, *Glossina palpalis*, and by it alone, the distribution of the two corresponding; that monkeys are susceptible to sleeping sickness, the disease running the same course, whether the Trypanosoma injected are derived from cases of Trypanosoma fever or of sleeping sickness; dogs and rats are partially susceptible, guinea-pigs, donkeys, oxen, sheep, and goats have hitherto proved refractory. Sleeping sickness, in short, is a human tsetse-fly disease. In that case the immunity of Europeans and Soudanese is very difficult to explain, unless the wearing of clothes prove, as has been suggested, to have a sufficiently protective effect.

THE PHARMACEUTICAL JOURNAL FORMULARY.

It is now possible to announce that virtually all the recipes submitted by chemists and druggists for registration in the 'Pharmaceutical Journal Formulary' have been arranged for publication. The only exceptions are a few which have been rejected because of the purposes for which the medicines are recommended, and it is only fair to congratulate the chemists and druggists of Great Britain upon the fact that so few recipes of objectionable character have been submitted. At the risk of delaying the publication of the book, the recipes received since October 31 are being included because of the Board of Inland Revenue's further modification of its practice. Any further recipes which may be received will be reserved for publication in supplementary pages to the 'P.J. Formulary,' unless the senders find, as is extremely probable, that similar recipes appear in the book when published. Though much work in connection with the Formulary remains to be done, the book is gradually nearing completion. It will be the most complete work of its kind ever issued, as, in addition to the phenomenal collection of recipes for ailment-named remedies of every description, the book will contain a very large selection of formulæ for unofficial galenicals, as well as for all classes of preparations which the chemist and druggist is likely to be asked to supply. The whole will number something like ten thousand, and will, moreover, be conveniently classified and suitably indexed. The book will also comprise a useful collection of reagents for urine analysis, and notes on the chief tests for abnormal constituents of urine. Furthermore, the volume will contain a fund of useful information concerning other matters of importance to the chemist and druggist, and as a work of reference it may well be regarded as a pharmaceutical "Whitaker." It should be noted, by the way, that it will not be necessary to have fresh labels printed in order to claim the benefit of the special exemption in favour of preparations registered in the 'P. J. Formulary.' A well-known firm of label printers is offering slip labels, like the following, which are intended to be used in conjunction with existing labels :—



P. J. Form. ....

Prepared according to the P. J. Form. ....

P. J. FORM. ....

It is only necessary that the registered numbers of the recipes should be written in the spaces provided for them, and those numbers will be furnished to all who have sent up recipes, in the course of the next week or two. Judging by the steady flow of orders, it would appear as though the number of members of the Pharmaceutical Society who will neglect to take advantage of the exceptional opportunity afforded them as regards the subscription price of the book will be very small, and the circulation will undoubtedly be far more extensive than was ever anticipated. Whilst the special offer, particulars of which will be found in another part of the Journal, applies only to members and student-associates of the Pharmaceutical Society, it should be borne in mind that chemists and druggists or students who apply to be elected at once may enjoy the same privilege. And in this matter those who have delayed seeking election as members even until the eleventh hour will be placed on the same footing as those who have supported and been benefited by the Society during numbers of years. Those persons who are eligible, and who submit their applications at once for election in January next, will receive the *Pharmaceutical Journal* from the date of application, and may subscribe for the 'P.J.F.' on the same advantageous terms as members. But there is no time to be lost, and those who wish to take this step must do so without delay. Members of the Society should take a very early opportunity of drawing the attention of their non-member friends to this unique opportunity, and they should not find much difficulty in persuading those who until now have been content to remain as onlookers that not only is it the right thing to support the Pharmaceutical Society, but that it is to their advantage to do so.

COD-LIVER OIL AND ITS ADULTERANTS.*

BY E. W. MANN.

This note consists mainly of a series of figures obtained by the examination of the various oils which have been by repute at one time or another used as adulterants of cod-liver oil. The samples are authentic, and in most cases they were actually prepared from the fish, under the supervision of the cod-liver oil manager of Messrs. Southall Bros. and Barclay. On inspection, it will be noted that many of them are really excellent in flavour, colour, and smell, and might, as far as the old-fashioned taste and smell test is concerned, be mixed in considerable proportions with the genuine oil without fear of detection.

The detection of adulteration in cod-liver oil is the more difficult, or, rather, the more difficult to give a name to, because in most cases the adulteration of the oil does not consist in adding a foreign oil to it, although there is no doubt that this is done, but that the non-genuine oil is the oil obtained from the livers of a whole catch of fish without discrimination—cod, haddock, coalfish, or even shark, and others. It is thus necessary to expect three, or even more, foreign oils in an adulterated cod-liver oil. The Finmarken oil is more liable to this form of admixture than the Lofoten; during the Lofoten season the cod appear almost alone, very few other fish being found with them. In the Finmarken fishing, however, the cod are accompanied by large numbers of haddocks, ling, and other fish.

Turning now to the question of tests for adulterant, one naturally turns first to the British Pharmacopœia; the tests there given are specific gravity, a colour test with sulphuric acid, albumin and freezing tests. Specific gravity is practically no guide; with one or two exceptions the whole of the oils here to-night will pass the specific gravity test. The sulphuric acid colour test is a valuable test for detecting liver oils generally, but cod-liver oil has by no means a monopoly of giving a violet colour with sulphuric acid; several of these oils give a colour more intense than that given by the genuine oil. The albumin test cannot be considered of any real value, the ring of coagulated albumin is slow to appear, and may be obscured by the colour produced by the action of the acid on the oil.

The whole of these oils have been put through a series of tests, the results of which are here given, but with, for the most part, negative results. The tests include specific gravity, amount of iodine absorbed by Hubl's method, saponification number, free acid, unsaponifiable matter, Reichert number, and two colour tests, the B.P. test with sulphuric acid, and another test, of which I shall speak later, which consists in adding one drop of a cooled mixture of two parts of nitric and one of sulphuric acids to fifteen drops of the oil.

Inspecting these results, it will be at once noticed as regards the figures how generally uniform they are; there is no sharply defined property by which pure cod-liver oil can be identified, and it is hardly to be expected that such would be the case. Fish-liver oils differ in many respects from other fatty oils, but not markedly from each other. Attention may be drawn to the high iodine figure for haddock oil, which indicates what is soon found to be the case on handling the oil that it possesses marked drying properties. I had hoped to give a series of refractometer readings for these oils, but have been unable to do so in the time at my disposal, and must reserve these for some future occasion.

Turning to the colour tests, the B.P. sulphuric acid test is at once put out of court; the violet colour is given by many fish liver oils. The nitric and sulphuric acids, however, give results which seem to be very promising. I have not as yet met with an oil other than genuine which gives the characteristic reaction; it is an unmistakable colour, a vivid salmon pink, not darkening to any considerable extent on standing. To my mind, such a test as this should, after confirmation by other observers, be recommended for inclusion in the B.P. monograph. It has the very great advantage of simplicity; any man can try it for himself. All that is needed is a white pill tile, a glass rod, and a mixture of the two acids; it is also advantageous to test a suspected oil against an oil of guaranteed purity.

In conclusion, I may say that the two oils, Brusmer and Hoi, are probably fresh to most; the names are Norwegian, and the former is known by the systematic zoologist as Brosmius brosme; the Hoi I have not been able to saddle with a scientific name. The collection of these samples has been done at considerable trouble and expense; and for this, and the facilities for making the experiments, my acknowledgments are due to Messrs. Southall Bros and Barclay, and to Mr. H. Goodwin for assistance readily given.

	Sp. Gr.	Iodine Absorbed.	Free Acid.	Saponification Number.	Unsaponifiable.	Reichert Figure, 2·5 Gm.	B.P. Sulphuric Acid Test, Before Stirring.	B.P. Sulphuric Acid Test, After Stirring.	$HNO_3+H_2SO_4$ Test, Before Stirring.	$HNO_3+H_2SO_4$ Test, After Stirring.
Cod-liver oil, Norwegian	0·9262	147·79	0·36	184·1	7·74	2·0	red brown, tinged violet	violet	orange pink	vivid salmon pink
Cod-liver oil, Newfoundland	0·9258	139·25	0·45	188·4	9·87	2·0	red brown, tinged violet	violet	brownish pink	vivid salmon pink, but not so vivid
Cod-liver oil, Japanese	0·9252	134·96	1·40	186 7	7·18	1·4	intense violet	intense violet, nearly black	bright violet	greenish brown
Whale oil	0·9192	92·38	2·08	188·6	7 70	0 4	light brown	vandyke brown	pale brown	very pale pink
Shark oil	0·9290	143·50	6·09	188·5	5·46	0·8	brown	red brown	brown	brown
Haddock oil	0·9318	160·00	2·67	191·2	2·42	1·1	orange brown	brown	light brown	orange
Coalfish oil	0·9272	139 10	1·35	186·1	6·52	0·7	brown, tinged violet	violet	orange brown	pale pink
Seal oil	0 9275	123·40	2·79	194·5	3·60	2·5	dark brown	intense vandyke brown	pale brown	pale orange
Dugong oil	0 9203	66·60	2·39	197·5	3·74	2·5	orange	brown	pale orange	very pale brown
Ling oil	0·9231	122·80	0 29	181·6	6·44	0·7	violet brown	violet	light brown	pale brown
Minhaden oil	0·9301	145 80	2·50	186·1	6·73	2·2	brown	brown	pink	light brownish pink
Hoi oil	0·9186	116·60	0·18	164·7	15·06	1·8	orange, tinged violet	vivid violet	light brown	pale orange pink
Brusmer oil	0·9222	130·11	0·13	180·4	4·92	1·9	violet	vivid violet	brown	pinkish orange

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* Read before the Midland Pharmaceutical Association, on Thursday, November 26, 1903. See page 856.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Characters of Gum Chicle.

F. O. Taylor, having remarked the paucity of data with regard to the constituents of "gum chicle," has examined a purified sample of the substance. His conclusions are summarised thus:—Ash, 0·2 per cent.; moisture, 2·2 per cent.; percentage soluble in chloroform, 82·7; in benzol, 84·7; acid value, 52·0; saponification value, 52·0. No ethers or esters were found.—*Amer. Journ. Pharm.*, **75**, 513.

Determination of Oxygen in Hydrogen Peroxide.

J. McLachlan states that the determination of the available oxygen in a solution of peroxide of hydrogen by an acidified solution of potassium permanganate is utterly untrustworthy. Determinations have been made of the available oxygen of manganese dioxide (1) in its original state, (2) after being boiled with a solution of hydrogen peroxide, (3) after being boiled with a solution of hydrogen peroxide and sulphuric acid, the process employed being the oxalic acid method, in which a known weight of manganese dioxide, mixed with a known volume of a normal solution of oxalic acid, and excess of sulphuric acid (1 in 3) is heated until the whole of the dioxide is decomposed, and the excess of oxalic acid then determined by a standard solution of potassium permanganate. The hydrogen peroxide solution should be added only after the manganese dioxide and sulphuric acid are thoroughly mixed. The results indicate that (1) the manganese dioxide is not decomposed by the hydrogen peroxide in accordance with the equation $MnO_2 + H_2O_2 = MnO + H_2O + O_2$, as in reality only a portion of the oxygen is evolved, (2) the presence of sulphuric acid is absolutely essential, for without it the foregoing reaction does not occur.—*Proc. Chem. Soc.*, **19**, 216.

Action of Water and Dilute Caustic Soda Solutions on Arsenic.

W. T. Cooke has made experiments with the view of ascertaining: (1) whether water alone has any action on either variety of arsenic, (2) whether the action, if any, is increased by the presence of caustic soda, (3) and whether, in the presence of air, the crystalline variety dissolves to a greater extent in caustic soda solution than in water. The results seem to show that water either alone or in the presence of caustic soda has practically no action on arsenic. In the presence of air, however, direct oxidation takes place. If water were concerned in the oxidation, the formation of hydrogen arsenide might be anticipated: $2As + 3H_2O = As_2O_3 + 6H$, $2As + 6H = 2AsH_3$; but this gas was never found in the foregoing experiments.—*Proc. Chem. Soc.*, **19**, 243.

Behaviour of Metallic Oxides towards Fused Boric Anhydride.

C. H. Burgess and A. Holt, jun., have investigated the action of fused boric anhydride on many metallic oxides, and find that only a limited number dissolve. Lithium, sodium, potassium, cæsium, and rubidium, as carbonates, readily dissolve in boric anhydride in all proportions up to saturation, giving clear glasses, and thallium behaves in the same way. With a very large amount of alkali, however, the glass becomes opaque. Calcium, strontium, barium, zinc, cadmium, magnesium, manganese, lead, and bismuth oxides are insoluble in small quantities, but, on gradually increasing the amount, dissolve to clear glasses; with a further addition of oxide, the mass again becomes opaque, except in the cases of lead and bismuth, which yield pale yellow, very fusible glasses. The oxide of mercury appears to be soluble, and those of antimony and arsenic slightly so. The oxides of aluminium, beryllium, zirconium, tin, cerium, thorium, niobium, and silicon are all quite insoluble. The oxides which colour the borax bead, namely those of chromium, copper, molybdenum, uranium, iron, nickel, and cobalt, are all insoluble in the fused anhydride, the manganese oxides in this respect behaving exceptionally. The last series of oxides can, however, be dissolved in boric anhydride containing lithium, potassium, cæsium, rubidium, and thallium, and the clear glasses obtained with larger amounts of the coloured oxides were similar to the borax beads although the colours were sometimes modified.—*Proc. Chem. Soc.*, **19**, 221.

The Assay of Alkaloidal Drugs.

Keller's general method for the assay of alkaloidal drugs, as usually carried out, is not free from objections. These include the solubility of ether in water, and of water in ether, while another source of error is found in the volatile nature of the solvents used. In warm weather it is impossible to avoid loss by evaporation, so that the aliquot part taken is too large. A. B. Lyons has devised a new modification of the Keller method, which seems to him less open to objections than any heretofore proposed. The plan, he states, is the very obvious one of packing the drug in the percolator, having previously moistened it with an appropriate menstruum of which an alkali forms a part. The method which is recommended as the most generally useful is as follows:—Provide a cylindrical percolator about 20 Cm. in length and 2 to 2·5 Cm. in internal diameter, ending in a tube 5 Cm. long and about 3 Mm. in internal diameter. A glass stop-cock in the tube would be a very desirable improvement. In absence of this, the rate of flow of the percolate must be controlled by packing the tube more or less firmly with absorbent cotton. Since the solvent is to be a very mobile fluid, the packing should generally be quite firm. Having prepared the percolator, moisten the drug (5, 10, 15, 20 Gm. or more, according to richness in alkaloid—the finer the powder the better) with the mixture of ammonia, alcohol and ether-chloroform, the proportions of which will be somewhat varied to suit different drugs. If 10 Gm. of such a drug as belladonna leaf is to be used for the assay, the mixture may consist of:—Stronger solution of ammonia, 1 C.c.; alcohol, 4 C.c.; ether-chloroform (6 : 1 vol.), 5 C.c.—Moisten in a small evaporating dish, transfer quickly to the percolator, pressing the powder down firmly with a glass rod. The small amount of powder that remains adhering to the dish, spatula and glass rod can be easily transferred to the percolator by aid of a little absorbent cotton, which is finally pressed down upon the powder. The percolator is then to be covered and allowed to stand five to ten minutes so that the ammonia may thoroughly permeate the drug. A mixture of ether and chloroform, or whatever solvent is best suited to the extraction of the alkaloid present, is next added and the powder percolated with it to exhaustion. It is generally easy to secure a rate of flow of one drop per second, which will ensure thorough exhaustion by the time that 50 to 75 C.c. of percolate has passed. When it is believed that the exhaustion is complete, test this by collecting 15 or 20 drops, stirring this with a drop of normal sulphuric acid, evaporating off the ethereal solvent and testing the acid solution with Meyer's or Wagner's reagent. From this point the assay is to be carried on in the usual manner.—*Pharm. Rev.*, **21**, 428.

PATENT MEDICINES.*

BY ROBERT HUTCHISON, M.D., F.R.C.P.

The first question we have to ask ourselves in approaching this subject is, what is meant by a patent medicine? How should one define the term? Now in the legal acceptance of the word a patent medicine should comply with two requirements. It is laid down in the law of the subject first, that it must be a genuine original invention; and, secondly, that a complete description of it must be filed at the Patent Office so as to be easily obtainable by the public. I need hardly say that neither of those requirements is fulfilled by the majority of the preparations to which the term "patent medicine" is applied. If you consider the former—namely, that the preparation must be a genuine original invention—I have merely to read you an account of some patent medicines that I have collected from the records of the Patent Office to show you to what extent such a description is applicable. I find, for instance, that in July, 1892, a patent was taken out for a specific for the alleviation of asthma or bronchial affections, of which the following is the recipe:—"Steep crushed eggs in lemon juice so as to dissolve the shells, add some rum and strain." That may be an original invention, gentlemen, but whether it is likely to be curative of asthmatic affections I think is extremely doubtful. In October, 1890, a medicine was patented for the cure of pulmonary affections which is directed to be made by mixing one gallon of extract of cloves, a pound and a-half of honey, and one pound of brown sugar-candy. In February, 1895, a certain Mr. Richardson showed great originality by taking out a patent for a medicine for the cure of rheumatism, which consisted of a mixture of sodium salicylate and water. I need not trouble you with further examples other than to mention the original idea of the gentlemen who took out a patent for some pills which were to counteract the effect of taking too much alcohol, the pills consisting of powdered coffee. So much for the first of these requirements, that it shall be a genuine original invention. And I need hardly point out to you that the second requirement—namely, that a full description shall be published so as to be readily obtainable by the public—is one which is not likely to be observed in practice. For obvious reasons it is one which would hardly commend itself to the average patent medicine vendor. Hence it is that the majority of so-called patent medicines are not so in the legal sense at all; they are much better defined as secret remedies or nostrum (from the Latin word which means "belonging to us alone"), and I would remark in passing that this word "nostrum" breathes a spirit which is entirely opposed to what is one of the finest traditions of the medical profession—namely, that if anyone discovers a method of treating a disease which he believes to be new and successful he publishes it at once for the benefit of the profession at large. That is entirely opposed to the meaning of the word "nostrum," and that is where we, the legitimate healers of the public, come into direct conflict with the spirit which animates the charlatan or quack. I think, indeed, that it would not be unfair to describe most of the preparations of which I shall have to speak as "quack" remedies. On referring to a standard dictionary I find that a quack is defined as "one who cries like the common domestic duck," "one who makes pretensions to knowledge, particularly medical knowledge, which he does not possess." And I think it is not unjust to apply such a description to most of the people who sell the so-called patent medicines. The following list gives the ingredients of various preparations.

Approximate Ingredients of Various Patent and Proprietary Preparations.

APERIENT AND LIVER PILLS.

Beecham's Pills.—Aloes, ginger, and soap.

Baillie's Pills.—Aloes, colocynth, oil of cloves, and soap.

Bile Beans.—Cascara, rhubarb, liquorice, and oil of peppermint, coated with gelatin.

Cockle's Pills and Barclay's Pills.—Aloes, colocynth, and rhubarb.

Carter's Little Liver Pills.—Podophyllin (one-eighth grain) and aloes soc. (one-third grain) in each pill.

Dixon's Pills.—Taraxacum, podophyllin, jalap, and soap.

Holloway's Pills.—Aloes, rhubarb, saffron, Glauber's salts, and pepper.

Page-Woodcock's Wind Pills.—Aloes, oleum carui, and soap.

Scott's Pills.—Aloin and cascara, with a soap basis.

Whelpton's Pills.—Rhubarb, aloes, ginger, pulv. ipecac., and soap.

SALINE APERIENTS.

Eno's Fruit Salt.—Bicarb. soda, tartaric acid, and citric acid.

Lamplough's Pyretic Saline.—Citric acid with bicarbonate of potassium and sodium.

Abbey's Salt.—Tartaric acid with bicarbonate of sodium, sulphate of magnesium, and sugar.

COUGH MIXTURES AND LOZENGES.

Congreve's Elixir.—Benzoic acid, infusion of elderberries, alcohol, and allspice.

Keating's Cough Lozenges.—Ipecac., lactucaria, squill, liquorice, tragacanth, and sugar.

Owbridge's Lung Tonic.—Balsam of tolu, oil of aniseed, and oil of cloves.

Balsam of Aniseed.—Contains aniseed and other ingredients, with one-tenth of a grain of morphia in every ounce.

PREPARATIONS FOR GOUT AND RHEUMATISM.

Eade's Pills.—Salicylate of sodium, guaiacum, and aloes.

Gloria Tonic.—Colchicum, guaiacum resin, and iodide of sodium.

Blair's Gout Pills.—The active ingredient is colchicum.

PREPARATIONS FOR HEADACHE AND NEURALGIA.

Antikamnia.—Bicarb. of sodium, antifebrin, and (?) caffeine.

Bromidia.—Bromide of potassium, chloral, hyoscyamus, cannabis indica, oil of aniseed, syrup and water.

Bunter's Nervine.—Creosote, chloroform, camphor, balsam of tolu, and alcohol.

Kaputine.—Antifebrin and sugar (coloured).

Kay's Tic Pills.—Sulphate of iron, quinine, and soap.

PREPARATIONS FOR ASTHMA.

Crevoisier's.—Belladonna, foxglove, stramonium, sage, and nitrate of potassium in equal parts.

Hair's Cure.—Iodide of potassium and tar water.

Plant's Cigarettes.—Leaves of stramonium, lobelia, and green tea.

Tucker's Cure.—Atropine, cocaine, hyponitrous acid, and various balsamic extracts, administered by means of an aeriser.

REMEDIES FOR OBESITY.

Trilene Tablets.—Sugar and a vegetable constituent of unknown nature.

Grey's Specific.—Contains 47·2 per cent. of free sulphur, and a bitter (? gentian).

Mrs. Frost's Anti-Obesity Remedy.—The active ingredient is extract of *Fucus vesiculosus.*

Russell's Anti-Corpulent Cure.—Citric acid (20 grains to half an ounce) glycerin, and water. The Pink Tablet = saccharin.

MISCELLANEOUS PREPARATIONS.

Bucr's Piles Cure.—Ointment: Gall and hamamelis with lanolin basis. Powder: Precipitated sulphur and carbonate of magnesium.

Californian Syrup of Figs.—Senna (active constituent), syrup of figs, and cinnamon.

Doane's (Back-ache) Pills.—1. White-coated aperient (dinner pills): Podophyllin, aloin, rhubarb, and peppermint. 2. Brown-coated (back-ache pills): Oil of juniper and a resinous constituent (? benzoin).

Guy's Tonic.—Phosphoric acid, tinct. cochineal, inf. of gentian, and chloroform water.

Dalby's Carminative.—Pulv. rhei, magnes. carb., glycerin, sugar, ol. menth. pip. and ol. anethi, and a small quantity of laudanum.

Chlorodyne.—Chloroform, ether, hydrocyanic acid, morphine, cannabis indica, capsicum, peppermint, and treacle.

Clarke's Blood Mixture.—The active constituent is iodide of potassium (about six grains to the ounce).

Orien.—Powdered sugar and starch and ol. gaultheriæ.

Ozerine.—Bromide of potassium and iodide of ammonia, with chloroform water.

Pink Pills.—Sulphate of iron, an alkaline carbonate, and liquorice, thickly coated with sugar, and coloured with carmine.

Phosferine.—Quinine, phosphates, and hypophosphites.

Seigel's Syrup.—Aloes, capsicum, liquorice, and treacle.

Steedman's Teething Powders.—Calomel and starch.

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* Lecture delivered at the London Hospital Medical College on November 10, 1903, and reprinted in abstract from the *Lancet*.

Warner's Safe Cure.—Nitrate of potassium (about ten grains to the ounce) and various diuretic herbs.

Woodward's Gripe Water.—Liquor magnes. carb., ol. anethi, sugar, and a trace of alcohol.

Drink Cures.

Mrs. Terry's.—Sugar (98 per cent.) and salt (2 per cent.)

Antidipso.—Chlorate of potash and sugar.

The extent to which advertisement is carried is almost incredible. Even in the middle of last century, which was before the great days of advertising, the patent medicine people were early in the field. It is said that when Dickens was at the height of his fame a firm of patent medicine makers offered him £1,000 if he would mention their pills in one of his novels. He declined. When this was told to Thackeray he said that it was foolish to refuse, for he could have pocketed the cheque and killed off the villain with an overdose of the pills!

The subject certainly has its humorous side, but of many of these advertisements it is difficult enough for us who know the facts of disease to speak in temperate terms. It seems to me monstrous that people should be allowed for their own ends to produce in the public mind a true pathophobia or exaggerated dread of disease, to raise false hopes in the unfortunate sufferers from incurable maladies, and to obtain money from those who can often ill afford it by holding out illusory promises of cure. If people assert, for instance, that pills containing sulphate of iron and bicarbonate of potash will cure tabes, or that pain in the back is frequently a symptom of renal disease, they are saying a thing which is not true, and if they sell a remedy on that basis then if that is not getting money under false pretences that phrase has lost its meaning. Against such a state of things we ought as a profession to protest. The time is ripe, indeed, it is over-ripe, when we ought to make some organised effort against it, and I look forward to the day when there will be appointed a committee or official body of some sort, representing, say, the British Medical Association or the General Medical Council, whose business it will be to inquire into the composition of these so-called remedies and to expose them. I do not think it is right that this should be left to the initiative of private individuals; it is a matter which concerns the profession as a whole. I am afraid, however, that the time is still far off when that will come about, and in the meantime we must all do what we can in our private capacity to fight this evil. I believe, gentlemen, that there are two ways in which we can do so. First of all we must educate the public. After all, people still look to us, and rightly, to inform them about these as about other matters relating to their health. If necessary, we may have to educate the public in the elements of physiology so that they will realise what at present they seem incapable of realising, that the same set of symptoms may be produced by many totally different diseases, and will distrust the man who claims to have some panacea which will immediately effect a cure no matter what may be the cause. But if we are going to begin such a process of education we must begin at the top. Believe me, quackery is not confined to any particular section of the community; it would be entirely wrong to suppose that it is found simply among the more ignorant classes. It is as rife, nay, I venture to say it is more rife, in Belgravia than it is in Bethnal Green. The upper classes, the so-called cultured classes, have a belief in "patent" medicines and quackery generally which is almost incredible. And if we are ever to get legislation on the subject we must begin by educating our legislators.

Mouth-wash for Children.

Thymol, 1; benzoic acid, 10; peppermint water, 5; star anise water, 5; tincture of cochineal, 12; alcohol, 460. To be diluted with water before use.—*Oester. Zeits. für Pharm.*

MEDICINE STAMP DUTY LAW.*

BY A WELL-KNOWN AUTHORITY.

The effect of the cases decided in the early part of this year upon the Medicine Stamp Duty Acts has been to alter very largely the liability of many articles of a medicinal nature which are sold by chemists and others. There were two cases decided by the High Court:—

> (1) That of Ransom *v.* Sanguinetti, which decided that an article labelled "Pure Gum Pastilles—Influenza, delightfully soothing to Singers and Public Speakers," was liable to duty by reason of the label being a holding-out or recommendation of the pastilles as beneficial to the prevention, cure, or relief of influenza; and
>
> (2) That of Farmer *v.* Glyn-Jones, which decided that a standard medicine which had never been in any way a patent or proprietary medicine, can be sold by a qualified chemist free from duty, although expressly recommended as beneficial for an ailment.

Somerset House has given a somewhat wide interpretation to the former of these cases, and has said that its principle applies to all articles, the names of which include the name of an ailment, *e.g.*, "Cough Mixture," "Antibilious Pills." They say, therefore, that all articles bearing labels of this kind are liable to duty. Whether this view is really sound or not it is probably unnecessary to discuss here. It is assumed that the retail trader will prefer to be on the safe side of the fence, and to make sure, as far as he can, that the articles he sells are not labelled in such a way as to bring him into conflict with the Revenue, whatever the result of such a conflict might be. Questions of general trade importance ought to be left to trade organisations, and not contested by individual retailers; and it is for the information of individual retailers that this circular is prepared.

A General Rule.

It must be laid down, then, as a general rule for practical purposes that no one, whether chemist or not, should sell [unstamped] any medicinal preparation, the label on which contains any express mention of any ailment; such names, therefore, as "Cough Mixture," "Influenza Pastilles," must be avoided in order to keep clear of claims for duty; even "Blood Purifiers" are now being condemned by Somerset House. This is the general rule, and so stated it should be universally followed, but, as will be seen below, there are important exceptions to it. In one way the retail trader will perhaps be in a better position in the future than he was before Ransom *v.* Sanguinetti; at least he knows the worst under the new practice. Before, he never knew but what he might be over-stepping the narrow limits of what Somerset House allowed as a concession, or even that the concession itself might not presently be withdrawn. Undoubtedly an alteration of this character causes much temporary inconvenience, but similar alterations had often to be made as to particular articles under the old practice, for no one could be sure that a label which Somerset House had once passed would not be condemned as liable to duty a few years later, when it came before some other departmental official than the one who had previously passed it. The exceptions to the general rule making liable all articles containing the name of any ailment are of at least as much importance as the rule itself, and should be carefully attended to in dealing with preparations liable to Stamp Duty.

First Exception.

The first exception is in favour of those drugs which were formerly liable under the Tonnage and Poundage Duties. There are too many of these articles to be set out here, and the full practical value of this exemption has not yet been certainly arrived at. The exemption is, of itself, an anomaly as the law at present stands; the reason of the articles included in it being exempted from Medicine Stamp Duty, plainly, was the fact that they were already taxed, and the unfairness of taxing twice over. Since the exemption was created, however, the Acts of Tonnage and Poundage have been repealed, so that the reason of the double taxation no longer exists, but the exemption still stands. This exemption includes a number of drugs still in use, although by no means so comprehensive as a modern list of common drugs would be; but the writer is informed that it is not possible to make the ordinary domestic medicines, with which this subject is more particularly connected, of any one of the drugs included in this first exemption alone. It is not quite certain yet whether the exemption applies when two or more of these drugs are mixed together, so that, as already stated, the practical value of this exemption is at present somewhat uncertain. Retailers who wish to take advantage of it should obtain from their wholesale houses further information and advice before experimenting in its application. Under this exemption it makes no difference whether the seller is a chemist, a licensed medicine dealer, or anyone else.

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*Reprinted by permission from a circular issued by Messrs. Ford, Shapland and Co., 6, Gt. Turnstile, High Holborn, London, W.C.

Second Exception.

The second exemption to the above general rule is an exemption of all pure drugs sold entire, *i.e.*, of single drugs unmixed. The exception applies whenever the vendor is either a qualified chemist or holds a patent medicine licence, so that under this exemption the licensed medicine dealer is in as good a position as the qualified chemist. As to such drugs sold by such a person, any recommendation or claim to proprietary right may be made by label or otherwise, and yet the article remains exempt from duty. The reason of this exemption, apparently, is the fact that it is impossible for any individual to obtain proprietary rights in any single drug sold pure and unmixed, even though he calls it by a fancy name or recommends it, or puts his own name in the possessive case before the name of the drug. Obviously his competitors can, if they choose, find out the constitution of his preparation, and, having found it out, can buy and retail it for themselves, although they, of course, must not sell it under someone else's name in such a way as to pass it off for that other person's goods. There is no difference between the practice as to this exemption from the practice of previous years; the recent cases do not affect it at all, but it is well to remind those concerned of its actual effect, so that its full advantage may be obtained.

Third Exception.

The third exception to the general rule of liability above stated is that which, for the first time since it was conferred by the Act a hundred years ago, was recognised and enforced in the case of Farmer *v.* Glyn-Jones. The article there sold was ammoniated tincture of quinine, B.P., and it was expressly recommended on its label as a remedy for influenza and colds. In spite of this recommendation, it was held that it was not liable to Medicine Stamp Duty, because it was a standard medicine which had never been the subject of any proprietary rights of any kind, nor a patent or secret remedy, and it was sold by a qualified chemist. All these conditions must be satisfied to exempt an article sold with a recommendation from the duty. The case was initiated by the defendant challenging the Inland Revenue to summon him upon ammoniated quinine, and that article was chosen as an illustration of the principle which it was desired to raise, not because anybody really wanted to sell ammoniated quinine itself with a recommendation, but because it was found that the necessary proof that it had never been proprietary could, without very great difficulty, be obtained, and as it was a well-known B.P. preparation, it served to exhibit the unreasonableness of the claim for duty. As to all articles coming within this exemption, the qualified chemist may recommend them to any extent he chooses as beneficial for ailments, or make a statement of their medicinal uses, without incurring any liability. Apparently, also, he is not bound to sell them under their standard or official name; he can invent a fancy name which gives no indication of the constitution of the medicine. It is probable also that he can claim proprietary right in it without incurring liability; this seems to be the necessary consequence of the judgment in Farmer *v.* Glyn-Jones, although that point was not there in question.

Disclosure of Composition.

Somerset House have laid it down as a condition of exemption under this judgment that the formula of the preparation must be stated or its source indicated, as, for instance, by the letters "B.P.," which, as is well known, as applied, always mean the British Pharmacopœia. The Revenue are, however, not legally entitled to lay down this condition, nor are they in a position to enforce it, for if an article is a known and approved remedy, nothing that is said or not said about it can make it not so. If, however, retailers wish to avoid even a correspondence with Somerset House, they will do well to adopt what is really only a suggestion for the preparation of the label. All articles for which the formula is in either the British Pharmacopœia or the French Codex are within this exemption. Other books of recognised authority will also be accepted as the sources of formulæ for known and approved remedies—for instance, Martindale's 'Extra Pharmacopœia,' the formulary which the Pharmaceutical Society propose publishing, and the formularies which the principal trade papers are preparing.* It will be seen, therefore, that this exemption is one of considerable scope, and applies to a very large number of the medicines which chemists usually sell. The legal effect of the exemption having been established in the Courts, it is for chemists to give it its full practical value. Chemists should be warned that in relying on this exemption they must make sure that their medicines are compounded strictly in accordance with the standard formulæ, for otherwise the exemption will not apply, and they will be liable to penalties if they sell such articles with a recommendation. It makes no difference under this exemption whether the article which comes within it is made by the chemist himself or is bought from a wholesale house. The point of importance is, that it must be sold by a qualified chemist.

The Position Summed Up.

The position under the new interpretation of the law may be summed up as follows:—

(1) Ailment names should be avoided; unless
(2) The article is sold either
  (a) Within the Acts of Tonnage and Poundage.
  (b) A pure drug unmixed, sold by a chemist or licensed dealer, or
  (c) A standard non-proprietary remedy sold by a chemist.

It may be useful to remind the trade that the Medicine Stamp Duty Law only applies to medicines; it does not apply to foods, toilet articles (unless expressly held out as medicines), wines (unless medicated), and most saline preparations are outside it. Articles of confectionery also are not liable to duty, unless held out as being medicinal. Further, the article commonly called a corn plaster, but really a ring or pad which, without directly affecting the corn, removes the pressure upon it and so gets rid of the corn, is not within the Acts.

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* The Board of Inland Revenue now insists that labels for cough mixtures and other medicines described by reference to the ailment or ailments they are intended to relieve must contain a specific reference to the particular formulæ in accordance with which they are prepared, if it is desired to claim the benefit of the exemption. A reference to a formula by means of the initials of the book from which it is derived will not be sufficient, but in the case of recipes in the 'Pharmaceutical Journal Formulary,' it will be sufficient if the labels bear the contraction 'P.J. Form.,' followed by the registered numbers of the respective recipes.—[Ed. *P.J.*]

SELECTIONS FROM THE FORMULARY OF THE PHARMACEUTICAL SOCIETY OF ANTWERP.*

Iodised Collodion.

Iodine, 5; collodion, 95. Mix.

Phenolised Collodion.

Phenol, 2; collodion, 98. Mix.

Salicylic Acid Collodion.

Salicylic acid, 2; collodion, 98. Mix.

Soap Solution of Cresol.

Crude cresol, 1 soft soap, 1. Melt the soap on the water-bath and stir in the cresol. By cresol the "sharp oil" of the gas-works is intended.

Cresol Water.

Soap solution of cresol, 1; distilled water, 9. For disinfection ordinary water may be substituted for distilled water.

Licorice Water.

Fluid extract of licorice, U.S.P., 3; water, 97.

Carbolic Water.

This formula was originally given containing 3 per cent. of phenol; but in conformity with the formula of the International Conference the strength has been now reduced to phenol, 2; distilled water, 98.

Compound Elixir of Orange.

Orange peel, 200; cassia bark, 40; potassium carbonate, 10; sherry, 1,000. Macerate at 20° C. for eight days, press, and add sufficient sherry to the liquid to bring the weight to 920. In this liquid dissolve extract of gentian, 20; extract of wormwood, 20; extract of menyanthis, 20; extract of cascarilla, 20. Set aside to deposit and filter.

Spirit of Ants.

Alcohol, 90 per cent., 70; water, 26; formic acid, sp.gr., 1·060 to 1·063, 4.

Hebra's Spirit of Soap.

Pure soft soap, 120; alcohol, 90 per cent., 60; spirit of lavender, 5. Dissolve and filter.

Granulated Glycerophosphate of Calcium.

Calcium glycerophosphate, 50; simple syrup, 100; sugar in granules, 885. Put the granulated sugar in a basin on the water-bath, gradually add the syrup in which the glycerophosphate has been rubbed down, stir until the mass is quite dry, and pass through a hair-sieve to separate the aggregated granules of sugar.

Granulated Glycero-Kola.

Alcoholic extract of kola, 1; alcohol, 90 per cent., 1; granulated glycerophosphate of calcium, 19. Dissolve the kola extract in the alcohol, pour this upon the granules in a dish, stirring so as to evenly distribute the liquid. Place the dish on the boiling-water bath and stir until dry.

Oil of Chloroform.

Olive oil, 3; chloroform, 1. Mix.

Granulated Kola.

Alcoholic extract of kola, 1; alcohol, 90 per cent., 1; granulated sugar, 19. Dissolve the extract in the alcohol, moisten the sugar (previously placed in a dish) evenly with the solution. Then transfer the dish to a boiling-water bath and stir the granules until they are dry.

Boudin's Arsenical Solution.

Arsenious acid, 1; distilled water, 1,000. Add the arsenic to water, 500, in a flask; boil until it is dissolved. When cold make up to 1,000 with more water.

Bonain's Anæsthetic Solution.

Menthol, 3; crystalline phenol, 3; cocaine hydrochloride, 1. Warm the phenol and menthol until they liquefy; add the cocaine hydrochloride and stir until it is dissolved. The liquid becomes solid on cooling. It is insoluble in cold water, but very soluble in alcohol. Its alcoholic solution is caustic.

Acetone Solution of Coal Tar.

Coal tar, 1; benzol, 2; acetone, 10. Dissolve the tar in the benzol; add the acetone and filter.

Crede's Colloidal Silver Ointment.

Colloidal silver (collargol), 3; distilled water, 1; white wax, 2; benzoated lard, 7.

Hebra's Ointment.

Lead plaster, 1; olive oil, 1.

Compound Rosemary Ointment.

Lard, 25; yellow wax, 5; concrete oil of mace, 2. Melt together and add oil of rosemary, 1; oil of juniper, 1.

Rhubarb and Quinine Pills (King's Pills).

Powdered cinchona bark, 1; powdered aloes, 1; extract of rhubarb, 1; extract of taraxacum, 1. Mass.

Liquid Tar Soap.

Norwegian tar, 1; Hebra's spirit of soap, 3. Mix.

Liquid Cade Oil Soap.

Cade oil, 1; Hebra's spirit of soap, 3. Mix.

Liquid Ichthyol Soap.

Ammonium ichthyol, 2; distilled water, 3; Hebra's spirit of soap, 15.

Syrup of Phenol.

Crystalline phenol, 1; syrup of peppermint, 999. Mix.

Compound Bromoform Syrup (Rami's Syrup).

Bromoform, 4; tincture of aconite, 4; codeine, 1; alcohol, 90 per cent., 95; syrup of tolu, 1,400; syrup of red poppies, 500. Mix.

Catechu Syrup.

Tincture of catechu, 1; simple syrup, 9. Mix.

Dionine Syrup.

Dionine, 1; distilled water, 19; simple syrup, 1,980. Mix.

Jaborandi Syrup.

Tincture of jaborandi, 1; simple syrup, 19. Mix.

Convallaria Syrup.

Extract of convallaria, 1; distilled water, 4; simple syrup, 95. Dissolve the extract in the water and mix.

Codeine Phosphate Syrup.

Codeine phosphate, 3; distilled water, 17; simple syrup, 980. Dissolve the codeine in the water and mix with the syrup.

Licorice Syrup.

Incised licorice root, 4; dilute solution of ammonia, 1; water, 20. Mix and macerate for twelve hours at 15° to 20° C. with frequent agitation; press, heat the liquid to boiling, then evaporate to two parts on the water-bath; add alcohol, two parts, allow to stand for twelve hours, then filter. Add to the filtrate enough simple syrup to bring the final weight to 20.

Maize Stigma Syrup.

Extract of maize stigmas, 1; distilled water, 4; simple syrup, 95. Dissolve the extract in the water, filter, and add the syrup.

Ammonium Valerianate Solution, Pierlot's.

Ammonium valerianate, 2; alcoholic extract of valerian, 1; distilled water, 47.

Kola Tincture.

Powdered kola nuts, 1; alcohol (60 per cent.), 5; macerate for six days, press, and filter.

Bidet's Liquid Vesicant (François' Formula).

Tincture of cantharides, tincture of rosemary, chloroform, equal parts.

Peptone Wine.

Dried peptone, 1; Malaga wine, 19. Dissolve without heat and filter after standing for several days.

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* From the *Journ. Pharm. d'Anvers*, **59**, 132

THE STUDENTS' COLUMNS.

OF EXAMINATION PAPERS.

Those who heard Mr. Edmund White's address to the students of the School of Pharmacy Students' Association a year ago (*P.J.* [4], **15**, 498) may remember his remarks on the subject of examinations. He said: "It is unfortunate that the examination test should of necessity be founded upon the reproduction of acquired facts in response to questions, without reference to the method by which those facts have been acquired." That feature of the ordinary examination paper was carefully borne in mind when compiling the questions which appeared in last week's issue (see page 783) in connection with the Students' Competition, and the questions given will, it is thought, test the student's potential ability to absorb knowledge as well as the quantity of facts which he has already absorbed. The object of this article is not to show how those particular questions should be answered, but to give a few general hints on the answering of examination papers in general. The inherent defects of the examination system are recognised, but, in the absence of any better alternative, the system will continue to exist, and students will be well advised to fit themselves for the ordeal of examination, however distant in point of time it may happen to be. The following remarks apply for the most part to written examinations only. The only advice for a candidate at an oral examination is, "keep your head and don't be afraid of the examiner."

In answering an examination paper there are three essentials to success. They are:—First, knowledge of the subject; secondly, common sense; and, thirdly, the ability to give the information required in a suitable form. Cynical people have been heard to say that to show knowledge is of less importance than to conceal ignorance. The statement contains a proportion of truth. But it must be remembered that ignorance is not like art, and *ars est celare artem* is not an expression which can be varied to mean that ignorance is able to conceal ignorance. In a word, the concealment of ignorance can only be achieved by those who have knowledge. Now, if an examination is intended, as many examinations are, to ascertain the candidate's fitness for a certain position, the examiner usually realises that parrot-knowledge is not the be-all and end-all. Common sense, the power of reasoning by analogy, the extent to which reading has actually developed the mind, all these are factors which it is important to test. In some subjects—qualitative chemical analysis and the classification of plants are examples—the detective faculty, exemplified in the immortal Sherlock Holmes, has to be brought into play. A chemical reaction or a physical characteristic may at once teach the student who has learnt to apply first principles rather than to rely on a knowledge of certain definite facts, that nine-tenths of the solutions previously possible may be ruled out forthwith. The familiar "chart-process" in chemical analysis exemplifies that fact, but there is a too frequent tendency for the candidate to omit to make all possible deductions from the simplest preliminary tests.

Suppose that a student is given a substance containing arsenic. He heats it in a dry tube and, as a result, finds that arsenic is clearly indicated by the manner in which it sublimes in the tube. It is not a wise thing for that student, even with the laudable intention of making assurance doubly sure, to heat another portion of the substance on charcoal and report again that "the characteristic smell of arsenic was observable when the substance was heated on charcoal." Or, again, if the substance has been completely volatilised in any of the preliminary tests, it will not gain marks if the candidate proceeds, by other tests, to prove the absence of all sorts and conditions of non-volatile substances. The inaccurate worker, and he who prefers to "jump" to his conclusions, deceive themselves when they argue that it is necessary to use several tests in order to prove a negative. Sometimes it may be so, but, in the generality of cases of this nature, one definite example is sufficient proof. In botanical classification, the detective faculty—the power of eliminating from the mind all hypotheses which are seen to be impossible—again comes into play. And herein lies a lesson for the examination candidate. Let the examiner know, quite clearly, how you arrive at each deduction, whether positive or negative. If you are given a plant to recognise with which you are already familiar, there is no harm done by stating the fact that you have recognised it at first glance; but it will be necessary also that you should put yourself in the position of the uninitiated, and trace the steps which, as you might fairly claim, would have led you to the same conclusion. If you are asked, in a paper on practical pharmacy, what process you would recommend for the preparation of some new galenical from a familiar drug, you should be able to show that there is a reason in your mind for every step in the process which you suggest. The reasoning may be based on an unsound hypothesis, perhaps owing to insufficient knowledge of the nature of the active constituents of the drug, or to some other cause, but if the mental process is clear, and the argument consistent with the hypothesis on which you base it, you will still earn a fair proportion of marks.

Common sense, and the power of giving the information asked for in the most suitable form, are two faculties which to a certain extent overlap. The candidate must exercise common sense in apportioning his time in the examination room, and in deciding whether a question requires an essay by way of answer or merely a brief statement of fact. But, however short the answer is to be—and the shortest answers are frequently the best—it is always essential to express the answer in language of clear meaning, and to avoid, so far as may be, the grosser breaches of the laws of grammar and composition. A sentence which is obviously inserted as "padding" is a sure sign to the experienced examiner that the candidate is either a fool or a rogue. And if the examiner discovers that an attempt is being made to throw dust in his eyes, it is all up with the candidate's chance of success. There is no inherent harm in learning the foibles of the examiner beforehand, wherever possible, or of adding "tips" to the armour with which to meet the ordeal; but too strong a warning cannot be given against the reliance which many candidates are wont to place on slender reeds of that description.

"Guessing" is an equally dangerous practice to the majority of candidates, but an aptitude for rational and well-ordered guessing will occasionally be of service to a student who is able to discriminate between the occasions when it is permissible and those when it is indefensible. It has not been thought necessary in this article to repeat the maxim that the candidate should always read through the whole paper before writing a single word, and then decide in what order he will attempt to solve the questions. Nor should it be necessary to advise those who finish their work with time to spare that they should carefully revise the whole. But those points are none the less of extreme importance. On the first reading of the paper, the average student will have made a mental classification of the questions which suit him well, ill, or indifferently. He should also decide, and decide quickly, which questions, if any, of the first class, lend themselves to an essay, and which require a mere statement of fact. The latter should be answered first, and then the student should apply himself to the other questions which he feels himself able to answer. Throughout, a watchful eye should be kept on the clock.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

MEETING OF THE COUNCIL.

WEDNESDAY, December 2, 1903, at 17, Bloomsbury Square, London, the President, Mr. S. R. Atkins in the chair. Other members present were Mr. C. B. Allen (Vice-President), Mr. Walter Hills (Treasurer), and Messrs. Carteighe, Cooper, Corder, Cross, Currie, Gifford, Glyn-Jones, Harrington, Harrison, Newsholme, Park, Robinson, Southall, Symes, and Wootton.

The minutes of the November meeting were confirmed.

Restorations to Society.

Several persons were restored to the Society upon payment of the current year's subscription.

Restorations to Register.

The following persons having made the required declarations and paid the restoration fee of one guinea, were restored to the Register of Chemists and Druggists:—

Dawson, Robert, 168, Duke Street, Chorlton Road, Manchester.
Wilson, Ernest Joseph, 27, High Street, Wells.

Finance Committee.

The report of this Committee was as follows:—

November 25, 1903.
Mr. Robinson in the chair.

Present—Messrs. Allen, Carteighe, Cooper, Harrington, and Hills.

(1) The Secretary submitted the following statement of the accounts:—

General Fund:—	£	s.	d.	£	s.	d.
Balance from last account	...	...		329	8	8
Receipts:—						
Penalties and costs	100	4	9			
Rents and bank interest	44	12	0			
Subscriptions	14	3	6			
Restoration fees and School fees	61	3	9			
Journal	1,180	0	4			
From deposit account	1,000	0	0			
				2,400	4	4
				2,729	13	0
Payments authorised by the Council				2,158	14	5
Balance				£570	18	7

Amounts Recommended for Payment:—	£	s.	d.
On behalf of the *Journal*	£702	2	1
School	19	6	11
House	153	2	5
Law charges	87	7	11
Stationery, etc.	26	1	8
Salaries and annuities	848	8	0
Current expenses	230	0	0
On account of Compendium	19	8	6
	£2,085	17	6

Benevolent Fund Account:—	£	s.	d.
Printing and postage	£38	16	3
Orphan Fund interest	35	0	0
	£73	16	3

Benevolent Fund (Current Account):—	£	s.	d.
Balance from last account	£343	5	5
Receipts—Subscriptions and ground rents	77	17	4
	421	2	9
Payments—Grants, etc.	122	0	0
Balance on the current account	£299	2	9
Balance on the donation account	£19	13	6
Donation during October	100	0	0
Balance	£119	13	6

Orphan Fund Account:—	£	s.	d.
Balance at the last meeting	£43	9	9
Dividend	4	1	10
	£47	11	7

(2) The Committee examined the accounts and found them to be correct, and in accordance with the foregoing statement.

Recommended that the Treasurer be requested to pay the amounts indicated.

R. A. Robinson, Chairman.

Mr. Robinson moved that the report of the Finance Committee be received and adopted. He pointed out that it had been necessary to withdraw £1,000 from the deposit account, and that the item against "Rents and Bank Interest" included £20 15s. as interest on the amount put on deposit a few months ago.

Mr. Harrington seconded the motion, which was carried unanimously.

Benevolent Fund Committee.

The report of this Committee included a recommendation of grants to the amount of £113 in the following cases:—

Widow of an associate. 51. Towyn. Has had previous grants.

Widow of a chemist and druggist and subscriber. 73. Louth. Has had previous grants.

Former Associate and Prizeman. 79. Pimlico. Has had previous grants.

Widow of a member and subscriber, who was elected an annuitant in 1897 and died in August last. 75. Anerley.

Widow of a chemist and druggist. 70. Crewe. Has had previous grants.

Widow of a chemist and druggist. 71. Llandudno. Has had previous grants.

Widow of a member. 62. Liverpool.

Four cases were not entertained.

The Vice-President said the Committee had a long sitting the previous day; in fact, a rather anxious one, because the members of the Committee felt that they had very little money in hand—practically none. For the balance on the current account was £299 2s. 9d. only, and before the end of the month they would have to pay away £483 15s. for annuities. Thus there appeared to be no likelihood of any money being available for grants, but the Committee did as had been done before, and, irrespective of the fact that the money was not available, the grants mentioned were recommended. The amount actually required was about £600, so that the Committee felt quite justified in appealing to the members of the Society to do what they can to help them out of the difficulty. Any efforts made by Divisional Secretaries to increase the contributions to the

Benevolent Fund would be very welcome. There was no doubt that the Fund, like other charitable institutions, was being pinched on account of the depressed times, and he therefore appealed to all chemists interested in the Benevolent Fund to do all they can to increase their subscriptions at the present time. He thought it was scarcely necessary to say anything further, but he might say that the Fund was unique, in that, unlike many other charities, which cost a considerable amount to dispense their funds, it cost almost nothing to administer. He moved that the report and recommendations of the Benevolent Fund Committee be received and adopted.

Mr. CROSS seconded the motion, and it was carried.

A resolution authorising the Treasurer to pay the annuitants to be elected next week was then passed.

CONTRIBUTIONS TO THE FUND.

The PRESIDENT said he wished to direct attention to the following amounts which had been received on behalf of the Benevolent Fund:—The Chemists' Ball, £10 10s.; Junior Pharmacy Ball, £10 10s.; Hartlepools and District Chemists' Association, £2 10s.; Chemists' Assistants' Association, collected at a social evening, 13s. 4d.; and subscriptions collected by Mr. Harry Wilson, of Southampton, and Mr. Alfred Southall, of Birmingham. In the name of the Council, he thanked the donors of those amounts. With regard to the statement made by the Vice-President, he entirely endorsed what had been said as to the position of the Fund.

Library, Museum, School, and House Committee.

The report of this Committee was as follows:—

November 11, 1903.

Mr. ATKINS, President, in the Chair.

Present—Messrs. Allen, Carteighe, Harrington, Hills, and Robinson.

1. The Committe received the usual monthly statements respecting the Society's Libraries and Museums in London and in Edinburgh, and particulars of these are published in the *Pharmaceutical Journal* for November 14, 1903.

2. Messrs. Parkinson and Son's account for £113 9s., for work done in converting a room on the second floor into a ladies' retiring room, and for certain new fittings therein, was submitted, approved and referred to the Finance Committee.

The Secretary was instructed to have Messrs. Parkinson and Son's accounts rendered monthly in future.

3. The Secretary reported that more cupboard room was required for storing the apparatus and appliances used in the chemical portion of the examinations. An estimate for £12 14s. for a proposed extension of the cupboards was submitted. The Committee ordered the extension to be proceeded with.

The Secretary reported that he had ordered a controlling set of switches for the electric light installation in the Lecture Preparation Room. The Committee approved.

4. The following letter was read:—

BOARD OF EDUCATION, SOUTH KENSINGTON,
London, S.W.,
November 3, 1903.

CONSULTATIVE COMMITTEE.

Sir,—I am directed to invite the Pharmaceutical Society to send one or two representatives to a Conference with the Consultative Committee on Friday, December 4. The Conference will be held at the Offices of the Board of Education, South Kensington, at 11.15 a.m., and representatives of other professional bodies have also been invited to attend.

The following is the question on which the Committee would wish to confer:—

> "Whether it is desirable and feasible to institute for Secondary Schools in this country (excluding for the present Wales and Monmouth) a general system of leaving examinations, of such a nature as to be acceptable in lieu of the preliminary examinations now required for admission to the various professional bodies."

The Committee have themselves carefully considered the question; they have already conferred with representatives of the Universities and of the teaching profession on the subject, and have gone so far as to draw up a preliminary plan indicating the principles upon which such a system might be framed to suit existing conditions. It is this plan that they would propose to explain and discuss at the Conference. They would prefer not to submit the plan in its still tentative form to the Society at present. After they have had an opportunity of further hearing the views of those who are interested, they hope then to be in a condition to prepare a more definite project; but to present a scheme which, at the present stage, is necessarily immature would be liable to lead to misapprehension. The Committee would, however, propose, when the names of representatives who will attend are communicated to them, to forward as soon as practicable to each one, informally, a copy of their preliminary plan as a general outline of their ideas, and to serve as a basis for discussion.

They think, however, that it will be convenient to the Society to receive an early invitation to send representatives to the proposed Conference, and will forward the paper in question to representatives at as early a date possible after the day named.

The Board of Education in consenting to the arrangements for the Conference, have particularly stipulated that their attitude towards it should be clearly explained at the time of sending out the invitations.

They will be ready carefully to consider any scheme put before them, with any accompanying observations by the Consultative Committee; but they cannot engage themselves to take action, if action is suggested, and they must not be regarded as committed to anything in the nature of an endorsement of the proposals of the Committee. In fact they must view the question not only on its merits, but in connection with their general educational policy. They are fully sensible of the injurious effect upon Secondary Education of the present multiplicity of examinations, and they have little doubt that a discussion between the Consultative Committee and the various bodies concerned will lead to useful results.

I am, Sir, your obedient Servant,
(Sd.) A. R. GUEST,
Secretary to the Consultative Committee.

As the meeting to which reference is made renders it impossible to defer the matter until the meeting of the Council in December, the Committee resolved to ask Mr. Carteighe and Mr. Saul to represent the Council at the Conference convened by the Board of Education.

S. R. ATKINS (*President*), *Chairman*.

The PRESIDENT moved that the report and recommendations of the Committee be received and adopted. He said that, in regard to the Consultative Committee, about twelve months ago there was a meeting of the head masters of the public schools of this country with the view to simplifying and, if possible, unifying, the various certificates of preliminary knowledge, which are accepted as the equivalents of tests for education. The Society was approached and asked to appoint someone to represent the Society, and Mr. Saul was appointed. Some little difficulty arose, however, at an early stage of the matter between the head masters and the medical bodies, and nothing was done, hence Mr. Saul had not had an opportunity of attending any discussion on the subject. The question had now been re-opened, and was being pressed to the front, and he thought very wisely, because he thought there were very few more important things than the tests of an adequate education. The matter was before the School Committee on November 11, and, as time pressed, the Committee at once proceeded to deal with it, and Mr. Carteighe and Mr. Saul were asked to represent the Society. The Conference was being convened by the Consultative Committee of the Board of Education, and he hoped that very valuable results would be the issue of the Conference which was to be held on Friday, December 4.

Mr. NEWSHOLME seconded the motion.

Mr. ROBINSON asked whether the Council had considered the matter before, or if the members of the Council had had an opportunity of making up their minds as to whether they were in favour of these leaving certificates being granted. He believed there was a very general feeling that an agreement should be come to whereby so many preliminary examinations in the country could be avoided.

The PRESIDENT said he thought the Council was in favour of the proposal with regard to leaving certificates, and the matter had been discussed by the Board of Examiners.

Mr. HILLS said the Council had not discussed the matter previously, and he did not know that the present was the proper time to discuss it; but speaking as an individual, he thought these leaving certificates should be of great value.

Mr. Glyn-Jones asked if anyone could give a reason why Wales and Monmouth were excluded.

Mr. Robinson said he should be inclined to ask the same question.

The Proposed Pharmaceutical Laboratory.

Dr. Symes directed attention to the fact that no mention was made in the report of the Committee as to any action having been taken in regard to a pharmaceutical laboratory. Since the previous meeting, he had seen a copy of the prospectus of the School of Pharmacy, and he had hoped to see among the pictures one of a pharmaceutical laboratory. He noticed that in the annual announcement of the Philadelphia College of Pharmacy the first thing one came across in the book was a very striking picture of a pharmaceutical laboratory, and he hoped the School Committee would not lose sight of the matter. It could not be a question of expense. When the Council could pass without a comment, a bill for over £400 for just patching up the building, it was surely not an unreasonable thing to ask that a laboratory be fitted up, where the students could be practically instructed in the processes involved in the manufacture of galenical preparations. He believed that the reason why the "racehorses" of pharmacy did not remain in pharmacy was because they had not had an efficient training in the actual making of galenicals.

The President said the matter mentioned by Dr. Symes had not been overlooked. In fact, it had been very earnestly considered by the Committee together with the Professor of Pharmaceutics, and he might say that they would shortly begin, on a small scale, to work on the lines Dr. Symes had indicated.

Dr. Symes thought it would be a waste of money to begin on a small scale, and that if the matter was gone into at all, it should be done thoroughly.

Obsolete Books.

Mr. Wootton said that in the previous report of this Committee it was stated in regard to the Library that the Librarian had reported on the annual revision of the Library, and asked for instructions for relieving the Library by weeding out a lot of obsolete books. There was no mention in the report of any list of those books, and he supposed it had not yet been prepared. He would suggest that when the list was ready it should be published, so that members of the Society might have an opportunity of securing the books, which might perhaps be valuable to them, though out of date, so far as the Library was concerned.

Mr. Carteighe said what was proposed was to weed out some of the books which ran into many editions—say, keeping the first few and the last few editions. In regard to Mr. Wootton's suggestion that some of the things might be valuable, he thought that all the really valuable books would be retained. He thought it would be a dangerous thing to let anybody get hold of obsolete text-books, and would suggest that it would be better to destroy such books.

Mr. Wootton said he was thinking more particularly of the pamphlets, which are sent to the Library from time to time, containing treatises on various subjects, which while of little value to the majority of pharmacists, might be of interest and value to someone.

Mr. Carteighe: The pamphlets are bound.

Mr. Robinson suggested that when the list of books was prepared the members of the Council should be allowed to see it.

Mr. Hills said if the present ideas relating to physics were confirmed there would be a great holocaust of chemical books.

Appointment of Divisional Secretaries.

The following were appointed Divisional Secretaries:—

LONDON (City)	T. Coulson
NORTHAMPTON	D. F. McKinnell
WHITEHAVEN	F. B. Bennett

Appointment of Superintendents and Deputy Superintendents.

The following gentlemen were appointed Superintendents and Deputy Superintendents of written examinations for the ensuing year:—

		Deputy.
London	C. B. Allen	H. Moon
Edinburgh	J. B. Stephenson	C. F. Henry
Manchester	Harry Kemp	C. Swinn

General Purposes Committee.

The minutes of this Committee were read as follows:—

Tuesday, December 1, 1903.

Mr. S. R. Atkins, President, in the Chair.

Present—Messrs. Allen, Carteighe, Cooper, Cross, Currie, Gifford, Glyn-Jones, Harrington, Harrison, Hills, Newsholme, Park, Southall, Symes, and Wootton.

The minutes of the previous meeting were read and confirmed.

The Secretary reported that negotiations had been in process between the Society's surveyor and the Society's tenants at Battersea in regard to sub-letting the property.

The Committee recommends that, subject to the approval of the Society's solicitor to the terms of licence and to the completion of certain work, particulars of which have been drawn up by the Society's surveyor, the seal of the Society be affixed to a licence to sub-let the property.

It was agreed to defer the sealing until the conditions required to satisfy the surveyor and the solicitor have been approved by the President and Mr. Carteighe.

The President drew attention to the salary of Mr. Joseph Tait, clerk in the Society's office in Edinburgh, and asked for an addition of £10 a year to be made to it.

The Committee recommends that the President's request be acceded to.

The Committee recommends that Mr. Walter Hills be appointed as the Society's representative on the Committee of Enquiry on Disinfectants prepared by the Sanitary Institute.

On the motion of the President, seconded by Mr. Newsholme, the report and recommendations of the Committee were adopted.

The Medicine Stamp Difficulty.

Mr. Carteighe, who had previously given notice of his intention, proposed a motion to the effect that a deputation of the Council be appointed to interview the Board of Inland Revenue on their uncertain and varying practice in interpreting the Medicine Stamp Acts. He said he owed an apology, to a certain extent, to Mr. Wootton and Dr. Symes, who some six months ago proposed a motion of a similar kind, in that he then opposed the motion. In his official position as Chairman of the Journal Committee he had had placed in his hands the most recent correspondence with the Board of Inland Revenue, and it was arising out of that correspondence that he gave notice of his intention to move this resolution. He had in his hands a number of letters from the Inland Revenue authorities, which had been published during the past few months, and it was noticeable that while there was, in the first place, a certain general principle observed, there now seemed to be a disposition to get lost, or from the position of the chemist and druggist, to retrograde. He could not help thinking that this was mainly due to want of knowledge, and he thought that the Board of Inland Revenue would be glad to receive some assistance from the Society. The Board had always treated the Council of the Society with every possible respect, as Mr. Wootton pointed out some time ago, and the only reason for voting against his motion then was that the majority of the Council did not quite see what they were to go down to Somerset House to say; now, however, they had before them material on which they might speak, and he thought it would place them in touch with the Board of Inland Revenue, and lead to further advantages for chemists and druggists at large.

Mr. COOPER seconded the motion. He explained that he voted against Mr. Wootton's motion some months ago because they had nothing definite to approach the Board of Inland Revenue upon; now they had something definite to bring before the Board.

Mr. HILLS said he did not think it was necessary for all the members of Council to say why they had changed their minds. Certain great statesmen did so from time to time, and he did not see why they should not now support a proposal which they voted against some time ago.

Mr. GLYN-JONES said he thought it might be useful if those who had not changed their minds asked for the reasons why their colleagues had done so. He knew it was a great temptation to support Mr. Carteighe's motion, because there would be a very large number of chemists and druggists who would be glad for the Council to go and talk to the Board of Inland Revenue. But he had expected to hear from Mr. Carteighe some reasons for now taking that course, because they would remember that Mr. Wootton's motion was lost by a very large majority, and he did not know of anything that had happened since the Council considered the matter, which had affected the position at all, except a letter from the Board in which a different view was taken than had been conveyed in a previous letter. There was no other reason for the change of mind on the part of any member of the Council. The only difference in the position of chemists towards the Medicine Stamp Duty Acts now, as compared with twelve months ago was that, as the result of the Influenza Pastilles case, the authorities now claim that ailment names, such as cough mixture, are liable to stamp duty, while on the other hand, it had been laid down that chemists have certain privileges which before had not been recognised. Mr. Carteighe's motion was that a deputation of the Council be appointed to interview the Board of Inland Revenue on their uncertain and varying practice in interpreting the Medicine Stamp Acts. What he wished to know was what the deputation was to go to Somerset House for? Were they going down to scold them, or were they going to say "We, as a Council have examined the Medicine Stamp Acts; we have taken the best legal opinion which can be obtained, and we have come to the conclusion that our legal disabilities are these, and our legal advantages are those; and our reason for coming down to you is that our view does not coincide with yours." He could understand that position; or if the Council thought that the Board of Inland Revenue was doing anything that the Board had not a strictly legal right to do, he could understand the Council sending a deputation to the Board. But the difficulties which had arisen during the past few months were due to a desire on the part of the Board of Inland Revenue to go far beyond the Act of Parliament in supplying chemists with privileges, and if the Council went to Somerset House and began making complaints, it was possible that the authorities might turn round and say, "We were trying to help you, but now you must adhere to the strict legal interpretation of the Acts." He could understand people outside pharmacy complaining as they had done, as to the position of chemists in being able to not only sell without a stamp, but also to recommend B.P. preparations and other remedies to which there was no claim to secrecy in regard to their composition. But was the Council going down to say, "We claim a right to secrecy as well as exemption from stamp duty?" He thought the Board of Inland Revenue had treated chemists very magnanimously in stating that they would recognise as coming within the exemption preparations the formulæ of which were published in a book or formulary, and he thought it would be very ungracious, on the part of the Council, to complain because the Board had made a blunder in stating that they would not require the formulæ to be numbered, and had afterwards gone back to a former position, which was the logical one. He thought they ran the risk of getting the Board of Inland Revenue to say that they must fight the matter out in the law courts. He did think that the Council ought not to pander to a desire to sell nostrums or secret remedies, and claim the privilege of selling them unstamped; in fact, to sail as near the wind as possible. He failed to see from Mr. Carteighe's motion what it was they were to go to Somerset House about. If they did send a deputation he thought they ought to go carefully into the Medicine Stamp Acts, and see how far Somerset House has met chemists, and that they should not send down four or five gentlemen, who would merely consider what they were going to say as they rode down to Somerset House in a cab. The Council ought to have a settled policy, and should not appear to pander to a little irritation because of a blunder on the part of the Inland Revenue authorities. It was rather a new *rôle* for him to speak as an advocate of Somerset House, but he spoke from experience, and he said emphatically "Don't go down and ask for further concessions." When he saw that the authorities at Somerset House had stated that they would allow a formula to be exempt without definite identification, he felt that the death-blow had been struck at the exemption which had been gained for chemists. It practically meant that chemists need not stamp anything, and that would have been in the best possible interests of those who were not registered chemists, because it would have given them excellent ground for getting an amendment of the Stamp Acts.

Dr. SYMES thought it was a pity that Mr. Glyn-Jones could only look at this matter from a legal point of view. When a man got so saturated with law as Mr. Glyn-Jones appeared to have become, he was afraid he was likely to get a little wrong on the side of equity. It was all very well for Mr. Glyn-Jones to suggest that it would be absurd to approach the Board of Inland Revenue about what appeared to him to be trivial matters, and that it would be better to wait till a case occurred, and then to fight it. But they were all liable to be the person to defend such a case and, as Mr. Glyn-Jones had shown them, it was an expensive business. He thought it was much better to avoid legal proceedings by an equitable arrangement with Somerset House. He knew that was bad for lawyers, but he thought it was better from the point of view of the chemist. Moreover, he believed the authorities would be thankful for any technical help such as the Society could give them. They had no grievance against Somerset House, and Mr. Carteighe did not propose that they should go down to chide the Board of Inland Revenue. He merely wished the deputation to point out possible hardships and difficulties which still remained unsolved, difficulties which affected the public interest just as much as chemists. He felt very glad that the matter had been brought up again, and he hoped the Council would arrange to send a deputation, and if they did he was quite sure that the Somerset House authorities would appreciate it.

Mr. GIFFORD said he had not changed his mind, and he saw no reason for changing it. Every circumstance that had occurred had confirmed him in the opinion he formed six months ago. As Mr. Glyn-Jones had said, there was only one reason for a change of opinion on the part of those who opposed Mr. Wootton's motion, viz., the letter from the officials at Somerset House published last week, and that letter, in his opinion, did not justify in any way the Council taking the step which it would not take six months ago. He had no doubt that the opinion of the Council would be valued by the Board of Inland Revenue; but that was a two-edged argument. He objected to the Council going to Somerset House on principle. He believed it to be the duty of the Council to dissociate itself from any idea of being contaminated with trades unionism. It was no part of the duties of the Council to go to Somerset House, because trade interests could very well be looked after by the officials of the Society, as they had been looked after during the past few months, and the Council in its dignified standing on one side helped the solution of the question by its inactivity much more than it would by interfering. He would like to go thumping at the gates of the House of Commons, but to go cap in hand to the upper servants at Somerset House was neither dignified nor useful.

Mr. Newsholme said the speeches which had been delivered had led him to believe that it was the right thing to go to Somerset House. Mr. Glyn-Jones was rather contradictory in that he objected to the Council appearing to presume to dictate to Somerset House, while at the same time he said they ought not to go without a settled policy. There had been changes in the views held by the Board of Inland Revenue, and he thought the Council ought to find out just where they were in the matter. At present they did not know their position and the authorities seemed to be equally at a loss. He therefore supported the motion.

Mr. Wootton said that Mr. Glyn-Jones's opposition to the motion had been very ably expressed, but he could not help feeling that it was somewhat of an artificial character. He assumed from the beginning that the only reason for the Council going down to Somerset House was to threaten them with legal proceedings; but he (Mr. Wootton) believed Mr. Carteighe had no such object in his mind. He should object most strongly to any such proceeding. But he thought Mr. Carteighe's motion expressed the position very clearly. It was not correct to say there was no uncertainty about the position of chemists in the matter; everybody in the trade said there was, and no one who had followed the letters from the Board of Inland Revenue knew exactly what the position was in regard to those preparations bearing ailment names. Therefore, he thought the Council should ascertain just where they were. He believed in the near future there would be an attempt made to secure a new Stamp Act; he had no reason for saying so, but he believed the present Act was worn out, and that there would be a new one, and it was therefore important that the Council should be in touch with Somerset House. If a deputation was appointed, he would suggest, yea, almost insist, that Mr. Glyn-Jones be one of the deputation. He was very glad that Mr. Carteighe had brought the matter forward again, as he thought it might be possible to get a further extension of time from the Board.

Mr. Robinson said he thought it would be advisable to delete the words "uncertain and varying."

Mr. Carteighe and Mr. Cooper having signified their approval of the suggestion, those words were struck out.

Mr. Robinson then spoke in favour of the motion. He did not think there was anything in Mr. Glyn-Jones's suggestion that chemists wished to avoid stamp duty, and at the same time preserve secrecy.

The Vice-President, while agreeing with almost every word that Mr. Glyn-Jones had expressed, felt that the time had arrived when it was desirable that the Council should approach the Inland Revenue authorities and ascertain the exact position of affairs. There was undoubtedly a great deal of uncertainty which ought to be cleared away.

Mr. Harrison cordially supported the motion, and repudiated the suggestion that chemists desired to sail as near the wind as possible. The members of the Council, he was sure, had no sympathy with such a desire.

Mr. Glyn-Jones: I have.

Mr. Wootton: And I.

Mr. Harrison: Well, with the exception of Mr. Glyn-Jones and Mr. Wootton, who wish to sail as near the wind as possible. Continuing, Mr. Harrison said it was not the law chemists found fault with, but the want of uniformity in its administration. There was nobody better entitled to approach the Board of Inland Revenue than the Council, which had no axe to grind in the matter, but he thought it would be satisfactory to members of the Society to know that at a time of panic and imaginary difficulties the Council had come forward to clear away the mysterious administration of the law.

Mr. Currie also supported the motion, though he was in sympathy with many of the remarks made by Mr. Glyn-Jones.

Mr. Southall said he should be glad to support the motion, but thought he need say nothing further.

Mr. Carteighe, in reply, said his object was that the Council should interview the Board of Inland Revenue itself—the responsible heads of Somerset House—and impress upon them that when any new view was formulated, it should not be sent out, as he was afraid happened sometimes, by subordinates, without method. He should be the very last to raise the question of a new Act. On the contrary, he should be very glad to give both time and labour to assist the Board in carrying out the old Acts. He believed it would be a misfortune to repeal those Acts. If a new Act were passed for purely fiscal reasons it would encourage street quackery to an extent that was terrible to contemplate. It seemed to him that what the Board required was someone to refer to. Now, Mr. Glyn-Jones had taken a very active part in this matter of the Medicine Stamp Acts, and they were all very much indebted to him for his very plucky self-denial in placing himself in a position of slight danger to fight a case, but he did not know that it had made him a *persona grata* at Somerset House, and as judgment rather than law had been an important factor in the recent cases, he thought the time had arrived to confer with the Board of Inland Revenue as to future procedure. Mr. Wootton had referred to the question of time, and he (Mr. Carteighe) thought it would be well to ask the Board to give chemists three months longer, as much for the sake of the Board as for the convenience of chemists. What he would like to see was that the President of the Society should occupy such a position that, whenever any difficulties arose, the Board of Inland Revenue would privately communicate with him. That was what was done in the days when he was president, but it had not been done recently. He wished to prevent the authorities making regulations which would enable a coach and four to be driven through the Stamp Acts; he would like the matter carefully considered by the Board in consultation with the Council.

The President said he entirely approved of the deputation, but he regretted that the words "uncertain and varying" had been deleted.

The motion was then put and carried, as follows:—

> That a deputation be appointed to interview the Board of Inland Revenue on their practice in interpreting the Medicine Stamp Acts.

Messrs. Gifford, Glyn-Jones, and Harrington voted against it.

Appointment of the Deputation.

Mr. Robinson moved that the deputation consist of the President, Vice-President, and Mr. Carteighe.

Mr. Newsholme seconded the motion.

Mr. Wootton agreed that the deputation should be small, but he thought an advisory committee should be appointed to confer with the deputation before and after the visit to

Somerset House. He also thought that it would be a mistake not to take advantage of the experience of Mr. Glyn-Jones

Mr. **Glyn-Jones** said it occurred to him that the Law Committee was the Committee to which this matter should be referred. Whilst he did not agree with the deputation, he would like to say that his remarks would have been very much modified if there had been a clearer indication of the purpose and the objects of the deputation.

Mr. **Newsholme** pointed out that Mr. Glyn-Jones's remarks were not quite in order, as the Council had just passed a resolution that a deputation be sent to Somerset House without conferring with any committee.

Mr. **Glyn-Jones** then moved as an amendment that the deputation go down to Somerset House after conferring with the Law and Parliamentary Committee.

Mr. **Wootton** seconded.

Mr. **Robinson** said as the matter did not permit of delay, he could not support the amendment. He thought the deputation could confer with the authorities without any instructions from the Law Committee.

Mr. **Hills** suggested that Mr. Glyn-Jones withdraw his amendment, but

Mr. **Glyn-Jones** declined to withdraw it.

The amendment was then put to the vote and was lost by seven votes against eleven.

The original motion was then put and carried.

Correspondence.

The **Secretary** reported that a letter had been received from the Privy Council Office, approving the appointment of the examiners for 1904. Letters had also been received from the members of the Boards of Examiners acknowledging their appointment by the Council.

A Matriculation Certificate of the University of Malta was submitted by Mr. E. Darmanin for approval, and the Council signified its acceptance subject to the approval of the Board of Examiners.

A Matter of Procedure.

Dr. **Symes** asked if there was a letter from the Executive of the British Pharmaceutical Conference.

Mr. **Hills** said he was going to ask the same question, as he saw it mentioned in the *Pharmaceutical Journal* of November 21.

The **President** said a letter had been received, and it had been handed to a committee that had been appointed to deal with the subject of the letter.

Mr. **Hills** said he should move the "adjournment of the House." He had taken a great interest in the matter dealt with in the letter, and he wished to know what answer had been given to a letter which had been addressed to the Council.

Mr. **Glyn-Jones** asked if the letter was addressed to the Council why it had been handed to a committee before coming to the Council?

Dr. **Symes**: By what authority has this letter gone to the Committee?

Mr. **Robinson** pointed out that there was nothing unreasonable or unusual in handing a letter to a committee to deal with without first bringing it before the Council. It was not necessary that every letter addressed to the Secretary or President should be produced in open Council, though he rather gathered from his friend, the Treasurer, that this particular letter should have been placed before the Council.

Mr. **Hills**: Most certainly, sir.

Mr. **Robinson** said he did not know of any Standing Order dealing with that point; it was a matter for the officials to exercise their discretion. Personally, he was all for publicity, but he did say that it was not quite usual for a public body to resolve that every letter addressed to it should be read openly—certainly, they did not do that at Spring Gardens, but apparently here it was expected that every communication would be read at the Council table.

Voices: No, no.

Mr. **Robinson**: Well, if there is no rule, I am not surprised that a letter should be sent to a committee to deal with, and I shall be content to see it when the Committee reports in due course.

Mr. **Glyn-Jones** moved that the letter be read.

Mr. **Hills** said he agreed that Mr. Robinson had a large experience of public bodies, but he too claimed to have some knowledge of what went on in that Society. He had been President, and he knew that there were letters which were addressed to the Council that it was not in the interests of the Society to read in public, but in this case reference was made in the Journal to a body which had held a meeting, and it was stated that a letter was to be sent on a certain subject—a subject in which he took the deepest interest, and he was only sorry that the matter had not been discussed in open Council at the last meeting when he expressed his views on the subject. Now he found there was a possibility of some conference between the Council and another body he asked that they might have the letter laid before them, so that they might know what answer was sent. He did not approve of back-stairs work.

Mr. **Newsholme** said he did not see that there was any necessity to speak of "back-stairs work." The President had a perfect right to submit any letter to a committee. The letter in question would be brought before the Council in due course.

Mr. **Hills** was speaking concerning the decision of the Council at a previous meeting in regard to the publication of a 'Compendium of Medicines' when

Mr. **Carteighe** rose to a point of order. He said the letter referred to was brought before the Compendium Committee by the Secretary, and the Committee dealt with it. He had no previous knowledge of the letter, but they were summoned as an administrative committee to consider the letter, and if it was suggested that there was any complicity between himself and the Secretary it was absolutely incorrect.

Mr. **Currie** said he saw the reference in the Journal, and expected that the letter would be brought before the Council.

The **Secretary** explained that it was not many months ago that the Council adopted new rules of procedure in order to lighten the work of the Council, and as the Council's executive officer, he wished to know what he was to do. The new rules were adopted to shorten debate and to avoid the Council being hampered with so much detail. This particular letter was addressed to him and contained a copy of a resolution that was passed by another body. As that resolution had reference to a matter which had been dealt with by the Council and a committee had been appointed with executive powers, he submitted the matter to the Chairman of that Committee and told him that, as he understood the Committee had executive powers, he presumed the Committee would deal with the letter and submit its report to the Council.

The **President** said he had no objection to the letter being read, but he should certainly object to any discussion upon it. It was a great mistake that any reference had been made to hole and corner methods, and he very warmly refuted any suggestion of the kind.

Dr. **Symes** pointed out that the Formulary Committee of the British Pharmaceutical Conference had certain work in hand, which was being held in abeyance pending the reply of the Council to the letter referred to. Therefore it was important there should be no delay.

Mr. **Robinson** said he should vote for the letter to be read only on the understanding that the matter bore no reflection on the office.

The Secretary then read the letter (see *ante*, p. 755).

Mr. Glyn-Jones asked whether it was a fact that the Compendium Committee had arranged for a meeting with the Formulary Committee of the British Pharmaceutical Conference; whether that had been done before the letter had been read at the Council meeting, and without giving the Council an opportunity of saying what answer was to be sent in the name of the Council to the Conference.

Mr. Carteighe said the Committee was quite in accord with Dr. Symes's view that the matter was urgent, and it was thought that the best way was to ask some of the Formulary Committee to come and see the Compendium Committee, and then a reply might be drafted before the Committee reported to the Council.

Mr. Hills wished it to be understood that this Committee which had executive powers was really the Journal Committee which had got rid of two recalcitrant members, and was now composed of Mr. Carteighe, the President, Vice-President, and Mr. Newsholme.

Mr. Newsholme said he should just like to say that the four members of the Committee were not responsible for getting rid of the other two, for the Committee was appointed by the whole Council.

The matter then dropped.

Absentee Members.

The President said Mr. Taylor wrote to say that he was better, but he had thought it was not advisable for him to travel to town just yet. Mr. Rymer Young also wrote to say that he was confined to the house with a severe cold.

The Seal of the Society.

The Secretary was authorised to affix the seal of the Society to a licence to sub-let some of the Society's property at Battersea.

This terminated the public business of the Council.

LEEDS AND DISTRICT CHEMISTS' ASSOCIATION.

ANNUAL DINNER.

Thursday, November 26, 1903, at Powolny's, Leeds, the President, Mr. G. W. Worfolk, in the chair. The number present was about eighty, and it was stated that only a very small minority of the Leeds chemists were absent.

After the loyal toast had been honoured, Mr. W. Ward, F.I.C., proposed the toast of

The Pharmaceutical Society.

He said the claims of the Society were becoming more highly appreciated than had been the case in the past, and he trusted that the time was not far distant when every registered chemist in Leeds would be a member of that Society, for no chemist who sought either his own individual interests or the interests of his craft could fail to see the necessity of his being in membership with the Society at the present time. The great hindrance in the past to the effectiveness of the work of the Society had been the smallness of its members by comparison with the total number of registered chemists; but, in spite of this hindrance, the Society had made considerable advances, and he thought they would agree with him that during the last three years in particular it had made special progress. The *Pharmaceutical Journal* had been wonderfully improved in recent times, and was now interesting to the tradesman as well as to the professional man, its management exhibiting a full realisation of the fact that chemists were tradesmen as well as professional men, and were entitled to a proper consideration of their trade interests. The adage was true of chemists as of all others, "Unity is strength," and the time had come when the Society needed all the strength that could be given to it for the task that it had to fulfil in the House of Commons on behalf of the interests of all duly qualified men.

The toast was responded to by Mr. F. W. Branson, who said that the Society, having a democratic constitution, was moulded by the votes of its members, and he had not noticed any disposition on its part to resist any well-considered reform. The changes which had taken place in the methods of the *Pharmaceutical Journal* showed how thoroughly the Society fell in with the requirements of its constituents when these had been clearly expressed. They must not forget, however, that the chemist had a scientific side as well as a commercial side, and he ought to have opportunity to get the necessary education to enable him to develop the scientific side. They had had many lessons of the importance of that feature of their craft from the Continent, and they must keep pace with the Continent in the matter of education. Fortunately, it was now as easy in the provinces to get the good education which was necessary as it was in the Metropolis. He thought the Minor Examination should be divided. Mr. Ward told him that he made a proposition to that effect somewhere about twenty-three years ago, and he, himself, had made that identical proposition in London about the same time. He felt sure that public opinion was now about ripe for that change, because there were now means of meeting such a demand in the provinces as regarded the earlier stages, at any rate, and then the more technical subjects could be studied in London and elsewhere with the greatest ease, and much greater proficiency and benefit to the student. One of the most important objects of the Society was that of promoting the education of its general membership. Another important function was that of legislative action. He was quite sure that in that direction the Council would do all that it could, although what might have been easy twenty or thirty years ago was perhaps difficult to-day. He thought that in that debatable Clause 7 of the Pharmacy Bill the Pharmaceutical Council had intended to put the maximum of what it thought could be obtained. He believed that in respect of its state of organisation for action when the time came the Pharmaceutical Society as it stood to-day compared very well with what its condition had been in the past, and if the organisation did not effect all that they could wish, it was not the fault of the Council, nor of the electors, nor of the permanent officials of the Society. Going on to speak of the benevolent side of the Society's work, he said that, as a local administrator of the Society, he could testify to many cases of distress alleviated in a quiet and unobtrusive way, and he was pleased to see that the new syllabus of the Leeds Association contained a social gathering through which it was intended to make an effort to secure some further contribution from the local Association to that admirable Benevolent Fund. They would be aware that this Fund was administered by the Society without any charge whatever, and the recipients of its benefactions need not necessarily be members of the Society. They might congratulate themselves, he thought, upon the most important and effective work of the Pharmaceutical Society in its various divisions, and remember that the work would be all the more effective if they all put their shoulders to the wheel.

Mr. E. Yewdall proposed the toast of the

Medical Profession,

and, in doing so, said that, in watching the progress of the discoveries made by the medical profession, he had often wondered whether they had any hope of solving one of the mysteries of Nature, that was by what means the brain registered everything which was communicated to it so that one could recall anything at any moment that one pleased. He wondered whether, when means were found to enable us to see through the skull, it would be possible to find marks or alterations of structure which would solve this problem, and whether results of the examination of brain in different conditions of age under the microscope had yet yielded any such results.

Dr. **Rumboll**, replying to the toast, said that he had been much interested in the remarks made by Mr. Ward and Mr. Branson. Mr. Ward had asked them to remember that theirs was a trade as well as a profession. He would like to put it the other way, and ask them to remember that theirs was a profession as well as a trade, and such difference as there was between the medical profession and the profession of chemists was rather due to the muddling way in which the education of this country had been carried on than to anything else. Consider the education of the retail chemist with whom he came into contact with every day. The chemist was placed in a very peculiar position. He went through an apprenticeship of three years' duration, and qualified and became a master, being then at liberty to start in business and dispense prescriptions, if he could get any. He might get a few from some doctors by being sweated to take that dispensing at a penny an ounce, or some similar figure. The medical man should write the prescription, and the chemist should dispense it. He did not say that simply because he was speaking to a body of chemists, but because he, as a medical man himself, saw the evil effects of this dispensing upon the medical profession. He well remembered hearing a friend who qualified about the same time as he did telling him how he had started practice, and what pleasure he took in going into his surgery after he had finished his work to make up the bottles of medicine, and saying that when he looked upon those shelves in his surgery it was an inspiration to him, and how interesting it was to feel that by the exercise of his knowledge he could make up the best bottle to suit individual cases. A couple of years ago, meeting that same gentleman, he asked him if he was still dispensing his own medicines, and the reply was, "Oh, yes, I am; but I have learned a great deal since I started practice, and I find I can now treat all my patients with twelve drugs." He knew, as a fact, that that gentleman started his career full of energy, inspired by the array of bottles on his shelves, and did very well, but after a time, as his responsibilities increased, and his professional pride decreased, he found it more satisfactory to him to substitute cheap preparations for the more expensive ones, and to go on diminishing the variety of his drugs, until he was able to boast that he could treat all his patients with twelve drugs. What had been the result? That man's practice had fallen. The public had got to know that he had not been able to keep pace with the education of progressive developments, because he had been thinking all the time of the bottles of medicine, and so, in the course of years, his practice had deteriorated, and he had deteriorated, and his pocket had suffered. When the Act was enforced, two or three years ago, doing away with unqualified assistants, that seemed to be very hard upon a certain number of men who were then acting as unqualified assistants, but it had already had the effect that qualified assistants to-day were getting very much higher wages than they ever did before; and he was sure that if the dispensing was given to the chemists it would raise their profits very greatly and encourage them to keep up their education as professional men, and to become members of the Pharmaceutical Society. A great drawback to the doctor nowadays was the drug stores, which were also a drawback to the chemist. He could say, from his own personal experience, he knew that there were certain drug stores where, owing to their cutting prices down to the very lowest point, substitution was practised, and they were unable to give to the patient at the price the preparation which was ordered by the doctor. If the doctor was to give up his dispensing the work must go to men whom he could trust, and in whom he would have confidence. He was very glad to say that there were many such men in Leeds—chemists who might be trusted to adhere rigidly to the doctor's prescription, and who were sometimes very candid friends if there was anything in the prescription which was not quite in order. A friend of his, present at the dinner, once told him that if his prescriptions were not better than his Latin, it must be a poor thing for his patients, and he quite agreed. The professions of the chemist and the doctor must advance side by side and hand in hand, and it rested with them, the members of these two great professions, to see that they did their part towards making these professions still greater in the future.

The toast of "The City and Trade of Leeds" was proposed by Mr. J. **Hollingworth**, and responded to by Mr. **Bedford**, who gave an excellent summary of the development of various trades in the city.

Mr. W. O. **Pollitt** briefly proposed, and Mr. **Metcalfe** responded to, the toast of "Visitors and Kindred Associations"; and Alderman **Dunn** having proposed "The Leeds Association," the **President** rose to reply just as the message was delivered that it was on the stroke of eleven and proceedings must end.

EDINBURGH CHEMISTS', ASSISTANTS', AND APPRENTICES' ASSOCIATION.

ORDINARY MEETING.

Wednesday, November 25, 1903, in the Pharmaceutical Society's House, 36, York Place, Edinburgh, Mr. **Archibald Currie**, President, in the chair.

An interesting practical paper containing

Hints to Amateur Photographers

was then read by Mr. A. **McCutcheon**. He warned beginners against using cheap or flimsy apparatus in learning photography. To begin with, he strongly recommended the use of the stand camera rather than the hand camera. He also gave hints as to the dark slides, lens, shutters, tripods, focussing cloth, dark-room, etc., and concluded by suggesting the formation of a camera club, under the auspices of the Association.

The reading of the paper was followed by a discussion taken part in by Messrs. Cox, Currie, Hill, Kelly, and Nightingale. The idea of a camera club was generally approved, as was also a suggestion by Mr. Kelly that they might have an exhibition of the work of members some time during the session.

Messrs. Currie, McCutcheon, Nightingale, and Plenderleith were appointed a special committee to carry out the suggestion, with Mr. McCutcheon as convener.

On the motion of the **President**, a cordial vote of thanks was awarded to Mr. McCutcheon.

READING AND DISTRICT CHEMISTS' ASSOCIATION.

ANNUAL SUPPER AND MEETING.

Thursday, November 26, 1903, at Table Dainties Restaurant, Reading, Mr. E. **Cardwell**, President, in the chair.

After supper the Treasurer's report was presented and was referred to the next meeting. The Secretary's

Annual Report

was then read. It showed that there are twenty-one members on the roll. Eight meetings have been held during the year, with an average attendance of seven. The most successful gatherings have been more of a social nature and those devoted to the furtherance of trade interests. The resolutions that had been sent early in the year to the Kodak Company *re* trade restriction, and to Messrs. Burroughs Wellcome and Company *re* their "substitution" circular, had doubtless had their desired effect in helping to remove these grievances. The report was adopted.

The

Election of Officers and Committee

resulted as follows:—President, Mr. E. Cardwell; Hon. Treasurer, Mr. F. Tunbridge; Hon. Secretary, Mr. F. F. A. Tunbridge; Committee, Messrs. Butler, Harrison, Mays, Rowell, and Vasey.

The programme for the coming session was then discussed. It was felt that the best way to increase interest in and to add to the value of the Association was to take up some definite line of trade interest wherein all might co-operate to the common good.

Mr. G. W. Harrison proposed that the coming session should be devoted to a study of the P.A.T.A. scheme. This suggestion meeting with unanimous approval, the Executive Committee was requested to meet at an early date to arrange details.

ROYAL SOCIETY.

ANNIVERSARY MEETING AND DINNER.

Monday, November 30, 1903, Sir Wm. Huggins, President, in the chair.

The following officers were elected:—President, Sir William Huggins, K.C.B., O.M., D.C.L., LL.D.; Treasurer, Alfred Bray Kempe, M.A.; Secretaries, Professor Joseph Larmor, D.Sc., D.C.L., LL.D., and Sir Archibald Geikie, D.C.L., Sc.D., LL.D.; Foreign Secretary, Francis Darwin, M.A., M.B. Sir Archibald Geikie's election was in succession to Sir Michael Foster, M.P.

The report of the Council was received. It stated that it had been decided that two Mackinnon studentships of £150 each should be established. This year the studentships had been awarded to Mr. Frank Horton for investigations of quartz fibres, and to Miss Alice Embleton for researches relating to aphidæ and coccidæ. The Government Grant Committee had made grants amounting to £3,270. For the International Catalogue of Scientific Literature 43,447 books and papers had been indexed. For this undertaking foreign countries had contributed £6,829. Reports had been received and published on malaria and sleeping sickness.

Sir William Huggins then delivered his presidential address, at the conclusion of which the various medals of the Society were presented. A Royal medal was conferred upon Dr. Horace T. Brown, F.R.S., for his work on the chemistry of carbohydrates, and on the assimilation of carbonic acid by green plants. The Davy medal, for the most important discovery in chemistry, was awarded to M. Pierre Curie and Mdme. Curie for their researches on radium. The Hughes medal was awarded to Professor Johann Wilhelm Hittorf for his experimental researches on the electric discharge in liquids and gases, extending over a period of more than half a century into the present year.

Dinner.

In the evening the anniversary dinner was held, when Professor Curie responded to the toast of "The Medallists." He expressed his admiration of the liberality of the Royal Society in awarding medals to men of science of all countries without distinction of nationality. The other speakers included Lord Alverstone, Lord Robertson, Lord Monkswell, Sir A. Rücker, and Sir M. Foster.

FORFARSHIRE AND DISTRICT CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Wednesday, November 25, 1903, in Dundee, Mr. Wm. Park in the chair.

Territorial Representation.

Mr. J. H. Thomson (Lochee) read an interesting abstract of Mr. Tocher's paper on "Territorial Representation."

Mr. C. Kerr expressed his approval of the scheme. They must extend their membership if they were ever to influence outside opinion.

Mr. A. B. Anderson asked how the Council view Mr. Tocher's scheme.

Mr. Wm. Doig complimented Mr. Thomson on the excellent summary he had read. He thought Mr. Tocher's scheme a very practical measure for the due representation of all parts of the country.

Mr. Davidson (Montrose) said he approved of the scheme.

Mr. Rutherford Hill said that whatever one might think of the scheme it was impossible to deny the great ability of its author. It represented a great deal of hard work well done.

Mr. J. H. Thomson, in returning thanks, proposed: "That this meeting record its appreciation of Mr. Tocher's paper, and considers it worthy of further consideration during the session." The motion was agreed to.

Mr. Wm. Cummings then read a short paper on the

Medicine Stamp Question.

Mr. Cummings traced the history of the developments in medicine-stamp matters since the judgments in the Divisional Court in the Sanguinetti and Glyn-Jones cases. He thought that chemists now stood in a much better position than ever. He thought that chemists should acquiesce in the wishes of the Board, especially as the conditions now laid down were not now nearly so exacting as those originally proposed. Mr. Cummings fully explained the position of chemists with regard to Medicine-Stamp Duty, and concluded by expressing the hope that they would be able to take the fullest advantage of their new-found liberty, to the confusion of their unqualified competitors.

Several members said they had decided to do nothing but wait developments.

Mr. Rutherford Hill thought a good case could be made out for repeal of the Acts.

Mr. Doig thought it would be in the interest of the poorer classes if the medicine stamp were abolished, as they seemed to imagine it carried some kind of guarantee.

British Pharmaceutical Conference.

Mr. A. B. Anderson, on behalf of the delegates to Bristol, gave an interesting account of the proceedings, including the social functions, and expressed the hope that the younger members of the Association would join the Pharmaceutical Conference and so share in the many advantages it confers.

Other Matters.

Mr. Rutherford Hill read a report which he had prepared on a bottle labelled "Chlorodyne," purchased at one penny in the Dundee shop of a firm trading as "Cheap and Good." It contained neither chloroform nor morphine, but seemed to be a mixture of extract of liquorice, sugar, rectified spirit, and oil of peppermint. Mr. Hill mentioned that this same firm offered Easton's Syrup capsules free from poison.

Mr. James Russell proposed that, in the public interest, the attention of the Food and Drugs Acts Inspector be called to the "Chlorodyne." This was agreed to.

Mr. Greig said he thought it would be well if the Association held a social meeting during the winter. He knew it was the wish of some of the younger members that there should be a smoking concert or dance. The proposal was favourably received by the meeting.

LIVERPOOL CHEMISTS' ASSOCIATION.

SUPPER AND SMOKING CONCERT.

Thursday, November 26, 1903, at the Hotel St. George, Liverpool.

In the absence of Mr. John Bain, who was to have taken the chair, Mr. R. C. Cowley presided.

The supper finished, the tables were taken out, and the concert proceeded. Songs were rendered by Messrs. Thomas, Bryce, Owens, Simpson, Woods, Holder, and F. Jennison, Mr. J. Simpson gave two excellent recitations, Mr. Rawlings two violin solos, and Mr. Rouse gave with great effect selections upon the English concertina. At the end of the programme, Mr. Shacklady expressed his thanks to those who had so warmly and spontaneously come forward to provide so excellent a programme for the smoker, and both Mr. Tharratt and himself, as Secretaries of the Association, were most grateful for the help which had been given to them. Mr. Cowley supported this, and Dr. Symes put the vote of thanks, which was carried with applause. The singing of "Auld Lang Syne" and "God Save the King" brought a very pleasant evening to a close.

DOVER CHEMISTS' ASSOCIATION.

ANNUAL MEETING.

Thursday, November 26, 1903, at the residence of the President, Alderman Peake.

Election of Officers.

Mr. J. F. Brown, in asking the President to accept office, again mentioned that this would be Alderman Peake's twenty-third year in that position. He expressed the thanks of the members for his continuous efforts on behalf of the Association.

Mr. Brown's proposition was carried with acclamation.

Mr. R. M. Ewell was elected to fill the position of Secretary and Treasurer, offices which he has held for the past nineteen years to the good of the Association and the entire satisfaction of the members.

Other Matters.

The report of the Federation of Local Pharmaceutical Associations was presented, and discussion postponed to the next meeting.

A telegram (sent by the Editor of the *Pharmaceutical Journal*) reporting the latest decision of the Excise authorities about numbering formulæ produced a lengthy debate. The members decided to withhold action until the Somerset House authorities give their final decision on the matter.

MIDLAND PHARMACEUTICAL ASSOCIATION.

ORDINARY MEETING.

Thursday, November 26, 1903, at the University of Birmingham, Mr. A. W. Gerrard, F.C.S., President, in the chair, a paper was read by Mr. E. W. Mann, Ph.C., on

Cod-liver Oil and Its Adulterants.

The paper is printed at page 840.

In the course of a discussion which followed, Mr. H. W. Jones (Coventry) referred to the sample of Japanese oil produced, and asked whether the reader of the paper had any idea from what species of fish it had been produced.

Mr. Mann said that he would not guarantee it as cod-liver oil at all. It was Japanese cod-liver oil.

Mr. R. Hollick said he desired to ask whether the tests applied by Mr. Mann would be applicable to a mixture of oils. He also desired to know whether the same tests could be applied to castor oil.

The President, in moving a vote of thanks to Mr. Mann, remarked that the communication was not only most useful, but had the merit of originality. His own view was that mixtures up to a certain point were very difficult of detection. It was always to be expected that true, pure cod-liver oils would vary so far as tests were concerned. They could not fix any absolute standard. All oils which had fatty compounds were subject to change and varied in composition according to the care exercised in their preparation. Cod-liver oil made from carefully cleansed livers must have been subjected to some heat. They sometimes heard of oil made by cold extraction, but he was of the opinion that it was not possible to prepare, by cold maceration, any cod-liver oil that could be presented to the public. It was necessary to employ some heat, and in proportion to the amount of heat used they were bound to have some slight variations in the oil. The oil of to-day, even in a bottle which had not been opened, would not be the same thing in twelve months' time; it would have undergone a change, and become more acid in character. All oils contained traces of moisture, and oil which had the water or moisture very carefully removed would, in his opinion, keep better than oil containing even small quantities of moisture. There were many points in connection with cod-liver oil which went to show that it was not possible to fix an absolute standard, and this being so, he did not see how the analysts could speak with certainty as to its absolute purity. He was further of the opinion that the B.P. ought to be exceedingly careful in respect of the statements it made, so far as tests for these oils were concerned, insomuch that they were subject to natural changes, and subject to changes after they had been prepared.

The vote was seconded by Mr. Hollick, and unanimously accorded.

Mr. Mann, in reply, said he thought the application of the simple colour test would at once detect any gross adulteration, but the adulteration likely to be practised was from 5 to 10 per cent., which it was almost impossible to detect. With regard to castor oil, Mr. Mann added that it was generally admitted the B.P. made a mistake in regard to colour tests. As to cold cod-liver oil, he said there was only one method of producing this, and that was throwing the livers into a receptacle and allowing them to decompose until the oil came to the surface. This was a method they would not care to practise.

GENERAL MEDICAL COUNCIL.

On Thursday, November 26, 1903, and the following day, Sir William Turner, President, in the chair, a number of registration cases were dealt with.

An application by Mr. J. E. Bush for registration as a dentist was not acceded to. The name of Mr. A. D. Cameron was removed from the Medical Register. The case of Mr. R. F. Granger was adjourned, after which the Council decided not to remove from the Register the name of Mr. L. E. Delmege, and that Mr. D. B. Bradlaw had not been guilty of infamous conduct. The names of Mr. H. J. Bradlaw and Mr. James Grant were ordered to be removed from the Dentists' Register. In the case of Mr. W. H. Ray, the Council decided to take no action.

Medical Education.

On Saturday, November 28, the Council considered letters from the Royal Colleges of Physicians and Surgeons in reply to a communication from the Council on the alleged unsatisfactory courses of study and examination in chemistry, physics, and biology. The Colleges refused to appoint representatives to consider the matter with representatives of the Council.

Sir **Victor Horsley**, when the replies of the Colleges were read, moved :—"That the Council do represent to His Majesty's Most Honourable Privy Council that the courses of study and examination in chemistry, physics, and biology to be gone through in order to obtain qualifications for registration from the examining board in England of the Royal College of Physicians of London and the Royal College of Surgeons are not such as to secure the possession, by persons obtaining such qualifications, of the requisite knowledge and skill for the efficient practice of their profession." He was, he said, asking the Council to take the last action in an affair of many years' standing. He hoped that the Council would bring about a decision as to who was the supreme authority in medical education. The Colleges had been treated with leniency and courtesy. If the examining body complied with the general principles laid down by the Council, there would be no appeal to the Privy Council; but the English Colleges were in a contumacious position, and the time had come for asking the central authority for a decision. The two Colleges had declined to enter into negotiations, and had treated the Council with absolute contempt. The authority of the Council had been challenged by the Colleges. He held it to be the duty of the Council to obtain the judgment of the higher authority.

Dr. **Mackay** seconded the motion.

Mr. **Bryant** said the question of authority as between Council and Colleges was not the issue raised. The Colleges had undertaken to give respectful attention to the opinion expressed by the Council, and it was known they were giving careful consideration to the subject, anxious to remove any defects that might be found in education or examination. The Privy Council would ask what the Royal Colleges were doing, and the reply would be that they were considering the subject. As a representative of one of the Royal Colleges, he could say the consideration would be continued until all defects were remedied.

Dr. **Norman Moore** felt that the Royal Colleges were right in declining a conference. The responsibility for curriculum and examination rested with the Royal Colleges. It was known that the General Medical Council did not approve of certain matters in relation to the study of chemistry, biology, and physics, and the Royal Colleges were considering the objections. There was no desire to treat the Council with anything but extreme courtesy, but the point was, Were the Colleges to discharge their public duty or were they to be disfranchised? That duty they honestly discharged to the best of their ability.

Dr. **Bruce** moved, and Dr. **Pye-Smith** seconded, an amendment to the effect that in view of the reconsideration of the course of study and examinations by the Colleges, the Council deferred any further action. The amendment was carried by sixteen to twelve, but on being put as a substantive motion, the Council resolved to postpone the motion indefinitely.

On Monday, November 30, 1903, the Council resumed its sittings, and adopted further reports of the Examination Committee with regard to certain examinations of the Royal Colleges and other bodies. The final examinations were in all cases considered to be "sufficient," but certain criticisms were passed. The Committee regretted the absence of a special examination of the Royal Colleges of Physicians and Surgeons in ophthalmic surgery, and regretted that there was no examination in operative surgery on the *cadaver*. With regard to the qualifying examination of the Society of Apothecaries of London, it was regretted that there was no regulation requiring evidence of study during the period for which a candidate was referred. The visitor also expressed the opinion that more attention should be given to prescribing.

Pharmacopœia Committee.

The Pharmacopœia Committee reported that from May 24 to November 24 the number of copies of the British Pharmacopœia sold was 711, and of the 'Indian and Colonial Addendum' 123. The total numbers disposed of were—of the Pharmacopœia, 34,591; of the 'Addendum,' 664. The final instalments of the investigation on the solubilities of drugs, conducted in the research laboratories of the Pharmaceutical Society of Great Britain by Professor Greenish, had been forwarded by the Council of the Society to the Committee. These would be published for general information. Mr. W. R. Dunstan, of the Imperial Institute, had made substantial progress with the examination, begun last year, of the pharmacopœial tests for arsenic. In view of the laborious character of the inquiry, the Committee proposed that a second and final grant of £50 should be made to Mr. Dunstan to enable him to complete the work, and to present it in a form available for the next issue of the Pharmacopœia.

On the motion of Dr. **MacAlister**, the report was approved.

Sir J. Moore was appointed member of the Pharmacopœia Committee in place of Dr. Atthill.

CHEMISTS' ASSISTANTS' ASSOCIATION.

ORDINARY MEETING.

Thursday, November 26, 1903, at 73, Newman Street, London, W., the **President**, Mr. A. B. Britton, in the chair. There was a very good attendance of members at this meeting to hear a lecture, by Mr. F. **Goldby**, Ph.C., of Enfield, on

Trichromatic Photography.

Mr. **Goldby**, in a few introductory remarks, referred to the investigation of Thomas Young in the early part of the last century and the later researches of the late Professor Clerk Maxwell into the composition of properties of white light. He also mentioned the direct "interference" process of Professor Lippmann, and the more recently introduced "Worel" process, in which a black film is produced by a combination of aniline colours upon which light has a bleaching action, then by a prolonged exposure of the film in the camera, the bleaching action of the light reflected from the object photographed so acts upon the film as to leave a positive image of the object. He explained the chief difficulty of this method, viz., the difficulty of protecting the coloured image from the further action of light, and then went on to deal with the modern method of colour photography known as the trichomatic, or three-colour process, and described the working of the various processes introduced by Mr. Frederick Ives, of Philadelphia, in 1892-3, Professor Joly in 1894, Dr. Vogel and Professor Miethe in Germany, Messrs. Lumière in France, and Messrs. Cadett and Neale, and Messrs. Sanger Shepperd and Co. in this country during the past few years. Mr. Goldby said the method and materials he had employed in obtaining the results, which would be shown by means of the lantern, were those of the last-named firm. He also showed a series of slides prepared by Messrs. Lumière, and another series by Messrs. Sanger Shepperd and Co. The lecturer pointed out the defects in his own work and the causes to which they were due. He also expressed the opinion that colour photography will take an increasingly important part in the photography of the future, and that the ordinary and uncorrected dry plate has had its day. He believed that photographers would tend more and more to the use of colour-corrected plates for everyday work in monotone.

Votes of thanks to Mr. Goldby for his lecture and to Mr. Lownsbrough for manipulating the lantern terminated the proceedings, the President remarking that though Mr. Goldby had mentioned the defects in some of the pictures prepared by himself, on the whole his work was quite equal to that of the professional experts whose slides had been shown—an expression of opinion which was endorsed by all present.

CAMBRIDGE PHARMACEUTICAL ASSOCIATION.

ORDINARY MEETING.

Friday, November 27, 1903, at the Cavendish Laboratory, Cambridge, the President, Mr. E. S. Peck, M.A., in the chair.

Mr. J. B. Butler Burke gave a lecture on

Radium and the Radio-Activity of Matter.

Until about four years ago, he said, the conservation of matter was taken as one of the fundamental doctrines in physical science, whereas at the present time it seemed as if the theory had received its death blow. Dalton, who was the founder of molecular theory, said that no man could split an atom. But an atom could be split up. Mr. Burke explained Becquerel's experiments on fluorescence, and then showed the audience a photograph of a purse, inside which coins could be plainly discerned. This photograph was "taken by radium" after an exposure of only two minutes. Mr. Burke proceeded to explain the cathode and Becquerel rays, and said that matter could no longer be considered as composed of atoms in the chemical sense. It was made up of electricity. To Professor Larmor they owed the suggestion that matter was made up of electrons. These electrons had since been shown to be capable of existing independently of the atom itself. As the molecule was composed of chemical atoms, so was the chemical atom itself but an agglomeration of electrons. The electron appeared to be the primordial atom of which all nature was composed, and so far as they could make out, it was the atom of electricity itself. It would now appear that all matter was electricity and electricity matter; thus had they shifted the whole responsibility upon the properties of the electrons instead of the seventy-seven elements which not long ago formed the foundation-stones of nature. Radium, one of the heaviest and most complicated of these, was continually shooting out electrons, and was gradually losing its substance, so that if the process continued long enough it must ultimately be dissipated away and scattered in the form of electrons throughout space.

A hearty vote of thanks was accorded the lecturer on the proposition of Mr. A. S. Campkin, seconded by Dr. Young.

PUBLIC DISPENSERS' ASSOCIATION.

ORDINARY MEETING.

Wednesday, November 25, 1903, at St. Bride's Institute, London, Mr. Duff in the chair.

Mr. Greenwood Watkins, of the Dispensary, St. Bartholomew's Hospital, read an interesting paper on "Dispensing Arrangements in a Hospital Pharmacy," basing his remarks largely on the arrangements at St. Bartholomew's. Mr. Watkins strongly advocated the employment of qualified men as dispensers, and uniformity with regard to bottles and labels. At the close of the paper a discussion took place, and a hearty vote of thanks was passed to Mr. Watkins.

BARNSLEY AND DISTRICT CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Thursday, November 26, 1903, at the Royal Hotel, Barnsley, the President, Mr. H. B. Billington, in the chair.

A telegram from the Editor of the *Pharmaceutical Journal* announcing another decision of the Inland Revenue authorities was read and the thanks of the Association were accorded to the Editor for the same.

A discussion on General Pharmaceutical Topics then took place and the following resolutions were adopted:—

(1) That the Council of the Pharmaceutical Society be requested to approach the Inland Revenue authorities with a view of enforcing the "Spirits Act" as referred to in an article in the *Pharmaceutical Journal* of November 14, entitled "The privileges attaching to a professional qualification."

(2) That in view of the increasing difficulty of obtaining apprentices through the increased stringency of the Preliminary Examination, this meeting recommends that it be made a test question at the next Pharmaceutical Council election as to whether the candidates are willing for some modification in the examination.

WAKEFIELD AND DISTRICT CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Tuesday, December 1, 1903, at Wakefield, Mr. Pollard in the chair.

Mr. R. Broadhead read a paper on

Proprietaries and Pharmacy.

In the course of his remarks, Mr. Broadhead said that any chemist who held a good stock of drugs and chemicals could, by his technical training and professional qualification, prepare any class of medicament of the same form and composition as these nostrums. It therefore followed that the vested interests and sole rights in proprietary articles were merely matters of externals. Every sale of a packed proprietary was a case of substitution of a concoction of doubtful origin. It seemed hopeless to expect our legislature to consider injustice to a class and the pecuniary loss of the public, but it might be hoped that the scattering broadcast of a large and increasing number of proprietary medicines would evoke some effort to check the abuse on the ground of its danger to the public health. He regretted that chemists were greatly to blame for the circumstance that they were suffering so much from the invasion of proprietaries. The public faith in quackeries, he said, must always be built up in the first instance by the countenance given to them by the registered chemists. His paper was not an attack on the P.A.T.A., but a statement of fact on logical conclusions. He recognised the value of that association as a temporary and superficial expedient, and he had no doubt that it was a sincere effort to cope with a difficulty, but it was an example of how sincerity and short-sightedness often ran in double harness. He took it that one of the principal objects of chemists' associations was to raise the status of their profession and to increase the public confidence in their skill and knowledge.

The President, Messrs. Whaley, Sargeant, and Judge discussed the paper, Mr. Sargeant stating that he considered the P.A.T.A. the best organisation which could be brought forward. Protection of prices was doubtless an evil, but so far as he could see it was the lesser of two.

A cordial vote of thanks was accorded to Mr. Broadhead.

GRIMSBY CHEMISTS' ASSOCIATION.

GENERAL MEETING.

Tuesday, December 1, 1903, at the Oberon Hotel, Grimsby, Mr. C. Willson in the chair.

The Secretary read correspondence received since the last meeting. It was unanimously resolved that the Treasurer should pay the annual subscription to the Federation of Local Pharmaceutical Associations.

The Secretary asked for support for Mr. G. Hornsby at the coming Benevolent Fund Annuitant Election, stating that a man who had supported the Fund for many years while in the position to do so should have a good claim upon the Fund, when unfortunately driven in old age to want.

The Cash-on-Delivery Postal System was next discussed. After a lengthy discussion it was decided to take no part in the agitation against the system, the majority of those present being more in favour of it than against.

An interesting discussion then took place as to the action of the Inland Revenue in regard to the Medicine Stamp question. Many interesting and diverse opinions were expressed, Mr. J. Humphrey's paper on "Chemists and the Medicine Stamp Acts" coming in for very favourable mention; but it was stated that the alterations that are made by the Board of Inland Revenue nearly every week make it difficult to understand what the final result will be.

SUNDERLAND CHEMISTS' ASSOCIATION.

ANNUAL DINNER.

Wednesday, November 25, 1903, at the Grand Hotel, Sunderland, the President, the Mayor (Alderman H. J. Turnbull) in the chair.

The loyal toasts having been duly honoured, Mr. Prosser gave "The Pharmaceutical Society," to which Alderman Harrison responded. "The Mayor and Corporation," proposed by Mr. Charles Ranken, was responded to by the Mayor, who also responded to "The Sunderland Chemists and Kindred Associations," which was proposed by Dr. Scurfield, and was also responded to by Mr. Foggan. Mr. Cherrett gave "Our Visitors," with which the names of Mr. Bowey and Mr. G. F. Merson were coupled.

GLASGOW GROCERS' ASSOCIATION.

MEETING OF EXECUTIVE.

Tuesday, December 1, 1903, Mr. T. W. Weir Flint in the chair.

Medicine Stamp Duty.

It was stated that a meeting of the Sub-Committee on the operation of the Inland Revenue Stamp Act in regard to medicines was held on the 20th ult.

Mr. Cockburn suggested that the members of Parliament for the whole of Scotland should be written to in order to get the Act amended or abolished; and, further, that circulars should be sent to the members of the Association warning them of the dangers they ran in selling goods which might come under the operation of the Act after the beginning of next year. Those suggestions were unanimously agreed to.

The Chairman stated that an interview with Mr. Parker Smith, M.P., had taken place that evening, and he seemed very much interested in what was made known to him. The whole thing was quite new to him, and he had no idea that such an Act existed. Mr. Cockburn had a draft prepared of the Act containing a good deal of information, and Mr. Smith desired a copy of the draft being left with him, and any further information that could be given. Mr. Smith said he would give the matter his serious consideration. He (Mr. Flint) moved that the members of Parliament should be written to to get the Act abolished, and that circulars be sent to all members of the Association.

Mr. James Bernard seconded, and the motion was carried.

DEATHS.

Beard.—On November 28, James Beard, Pharmaceutical Chemist, Manchester. Aged 91. Mr. Beard, who had been a member of the Pharmaceutical Society since 1852, was in business at 16, Great Ancoats Street, Levenshulme, for over half a century, part of the time in partnership with the late Mr. J. Holt. He was well known as a local antiquarian.

Bramwell.—On November 30, Sir Frederick Bramwell died after a few days' illness. Aged 85. He was the brother of the late Lord Bramwell, and achieved as great a renown in that walk of life for which he was peculiarly fitted both by inherent tendencies and by experience. From his earliest years he showed great abilities of invention and application of scientific principles to the practical solution of difficulties in mechanical engineering. His attainments were soon recognised, as he was appointed an associate of the Institution of Civil Engineers in 1856, becoming a member in 1862. His knowledge was frequently brought into requisition in the arbitration of disputes involving technical experience, and here his legal tendencies stood him in good stead. In 1874 he was elected President of the Institution of Mechanical Engineers. By his death the British Association has lost an able and strenuous supporter, who was honoured by holding the presidency in 1888. He was elected a Fellow of the Royal Society in 1873, and received the honorary degrees of D.C.L. from the Universities of Oxford and Durham, and the L.L.D. of Cambridge in 1881, the year in which knighthood was conferred upon him, and in 1889 the late Queen further honoured him with a baronetcy. Science is much poorer through the loss of one whose whole life was devoted to its practical application.

Burgess.—On November 29, Sidney Robert Burgess, Chemist and Druggist, Luton. Aged 33.

Fawthrop.—On November 24, James Fawthrop, Chemist and Druggist. Aged 64. Mr. Fawthrop had been a member of the Pharmaceutical Society since 1900.

Mathews.—On December 2, John Hitchcock Mathews, chemist and druggist, Queen's Gardens, London. Mr. Mathews, who was a member of the Pharmaceutical Society for many years, was, perhaps, best known as the Treasurer of the Western Chemists' Association (of London), of which body also he was President during the session 1897-98. His connection with the Association dated back to its formation, and there was no one more regular in attendance at the meetings of the Association than Mr. Mathews. He was well known and highly respected in pharmaceutical circles, and by his death many readers of the Journal will feel that they have lost a staunch and most lovable friend.

Birch-bud Hair-wash.

Alcohol (96 per cent.), 2,000; water, 500; tincture of cantharides, 25; salicylic acid, 25; glycerin, 100; essential oil of birch-buds, 40; bergamot oil, 30; geranium oil, 5. Mix the oils with the spirit and other ingredients, adding the water and glycerin last. It may be coloured with chlorophyll.—*Pharm. Zeit.*, **48**, 331.

LEGAL INTELLIGENCE.

High Court of Justice—Chancery Division.

The "Tabloid" Case.

Wellcome v. Thompson and Capper.

On Friday, November 27, 1903, before Mr. Justice Byrne, Mr. Ralph Neville, K.C., resumed, on behalf of the plaintiff, his reply on the whole case. He said that he had not much to add to what he had advanced on the previous day, but he desired, in the first place, to submit to his Lordship a classification of the witnesses who had been called on behalf of the defendant firm. He pointed out that the defendants had called four doctors—all from Liverpool—two of whom described themselves as homœopathists. They also called four chemists from Liverpool and Manchester, one from Scarborough, and one from London. Three out of these six chemists described themselves as homœopathic. The distinction was material, because the person who dealt in homœopathic remedies was not familiar with allopathic drugs, and, therefore, as the plaintiff's drugs were mainly allopathic, the value of the defendant's evidence was largely diminished. Further, the fact that orders had been given by mistake for "tabloids" not made by the plaintiff was quite consistent with the idea that the doctors wanted Burroughs Wellcome's goods, but did not know the limits of their manufactures. To prove exceptions to a rule was not to disprove the rule. Mr. Walter was under a misconception when he said that the main idea of a trade mark was to protect the ultimate purchaser. It was nothing of the sort. The whole idea of trade-mark law was the protection of the trader. He did not remember a single "passing-off" case brought by the purchaser, although, of course, the purchaser could bring such an action. Except Mr. Abraham, all the witnesses on both sides had said that when asked for "Tabloid" in a line listed by Burroughs Wellcome and Co., they did not ask what was meant, but supplied plaintiff's goods as a matter of course. Surely if there were any doubt on the matter at all it would be to the chemist's own interest to ask if the customer really meant Burroughs Wellcome and Co.'s goods.

His Lordship said that until about a year ago he did not know that tabloid was a trade term. In the first instance, he was told by a doctor, and in the second instance, on going into a chemist's shop and asking for some tabloids, he was told by the chemist that he did not keep them—they were Burroughs and Wellcome's goods. He supposed he must admit that he was one of the ignorant public. However, he would disregard entirely his own experience.

Mr. Neville said that he would put it as a broad proposition that, in a case where, by a certain name, the goods of a particular trader are indicated, a tradesman had no right when asked for goods under that name to deliver the goods of another maker; he had no right to suppose that his customer meant any other goods. Further, the prescriptions, which were returned to the public with the chemist's stamp on them, were in the nature of invoices, and showed that the goods in this case had actually been sold under the name "tabloid." Sending back the prescription in this case was "user" of the name. It did not matter that the mark was not on the goods themselves. The learned counsel further said that there must be "sole trade" in order that a secondary meaning should be acquired. The "cellular clothing" case did not apply, as "cellular clothing" was as descriptive a phrase as could be used, and he could not conceive any other description. A tailor might advertise flannel trousers under the name of "impossible-to-run-about-withouts," but although that might be perfectly descriptive, the public would not ask for the trousers as such in a shop. Up to that point, he said, he had argued the case entirely on the footing of trade-name; but now he came to the question of trade mark. The learned counsel proceeded with his legal argument on this point, citing a judgment of Lord Davy and other authorities in support of his case. There was another point he desired to mention, and that was that where there was a fancy word used only in one way, it was difficult to prove that it had acquired a secondary meaning. He submitted that the word "tabloid" had a primary meaning; it meant the goods of Burroughs and Wellcome, and it was difficult to prove a secondary meaning unless you could prove that the secondary meaning was universal or universally known. There was no question what tabloids meant. Tabloids had no other meaning than the plaintiff's goods; but what the defendants had to prove was that tabloid had acquired a secondary meaning that that which was not distinctive of the plaintiff's goods had become a word in common use.

His Lordship said that in cases where it has been said that a right has been acquired in an ordinary English word, it was necessary to show general knowledge on the part of the public as to the secondary meaning having reference only to certain goods.

Mr. Neville said that Mr. Walter had stated that there was no evidence offered by the plaintiff at all of the identification of the name by the public with the plaintiff's goods. He thought that was a statement that could not be supported, and he had looked out a few instances from the plaintiff's witnesses' evidence, in which the witnesses had stated that when asked what they understood by tabloid, the customers who had asked for them said they meant the goods of Burroughs and Wellcome. Mr. Neville cited the evidence of Mr. Druce, of Oxford; Mr. Atkins, of Salisbury; Mr. Wilson, of Southampton; and other witnesses. One of these mentioned that, on telling a customer that he could serve him with tabloids from his own bottle, the customer at once asked "Are they Burroughs and Wellcome's?" The real guide to the Registrar in deciding on a particular word was whether the word was so descriptive in itself as to be non-registrable. The fact that nobody, during eighteen years, resented or complained of the trade mark, was strong evidence of its validity. Mr. Neville concluded his reply at the rising of the Court for the midday recess.

His Lordship asked Mr. R. J. Parker, who appeared for the comptroller, whether it would best suit his convenience if he were heard next.

Mr. Parker said that it would be convenient if he might be heard before his friend Mr. Walter.

This was agreed to, and on the Court resuming, Mr. Parker addressed his Lordship for the comptroller, and said that the actual date of registration was the material date in the case. He went on to say that, after the evidence that had been adduced in this case, it would be impossible to put this word upon the Register, in face of the necessity for avoiding confusion between the different articles. This was entirely apart from the question whether or not the word had originally been properly placed on the Register. The only other remark he needed to make was that a trade-mark word, if a fancy word, must be a completely fancy word.

Mr. Walter then proceeded to address his Lordship in support of the defendants' motion for the removal of the plaintiff's trade mark from the Register. He said that the question of a distinctive fancy word was not the whole question. Was it entirely non-descriptive as applied to the goods for which it was intended to be used? The only "user" here was in connection with compressed solids, and the word "tabloid" was clearly descriptive. "Bovril" stood on an entirely different footing. It never had any meaning to the public except the preparation of the Bovril firm. But "tabloid" was a variant of "tablet," which was a diminutive of "table," and in the sense of "like a little table," the word was given, as "tablet" had for years been given, to little medicinal discs. "Tabloid" was used in a descriptive sense from the first, and the word was advertised with a picture, the idea being to say "this article shown in the picture is a tabloid." He would come to the evidence which he could only call the evidence of "educated ignorance." It was unheard of to parade numerous persons with titles, persons who might be of some position in life, and possibly very estimable gentlemen, and to say that, because they did not know the derivation and meaning of the word, therefore the word had not a derivation and meaning. The fact that plaintiff had enjoyed the monopoly unmolested for eighteen years proved nothing. The plaintiff's firm was a rich firm, and it was an expensive thing to fight it.

His Lordship asked whether "no village Hampden" had been found to withstand the tyrant of his fields.

Mr. Walter said that was exactly the point. His friend Mr. Neville had made an appeal to humanity, an *ad misericordiam* appeal, which would more properly be addressed to a jury than to a judge.

His Lordship said that he was acting in both capacities.

Mr. Walter continued that it was immaterial whether his learned friend or the public knew the Greek word *eidos*. They knew the meaning of the English termination, "oid." And in weighing the question as to the trade's knowledge of the term "tabloid," and acquiescence, it was necessary to remember, as one of the witnesses said, that the "cabman was driving over the crossing."

The Judge said that he would reserve judgment, probably until Monday, December 7.

Absorbine.

On Friday, November 27, 1903, Mr. Justice Kekewich had before him an application in the above matter, which raised a novel point of considerable interest.

Mr. Hewitt, on behalf of the defendant, said that the application which he had to make was that the following question of law might be determined before the trial of the action, namely, whether the word "absorbine" was an invented word or one capable of valid registration. The notice of motion asked for an injunction to restrain his client, the defendant, from using the word "absorbine" in connection with a veterinary preparation sold by him. The defence was that the word "absorbine" was not proper subject matter for registration, and that it was not a trade mark within the meaning of the Trade Marks Act, and, further, that the word was one which was in common use. The defendant had held out that the plaintiff's trade mark was not properly registrable, that the word "absorbent" was not an invented word, and that the word was in common use. He thought if the point of law which he had mentioned to the Court were determined in favour of the defendant, and the Court should hold that the plaintiff's trade mark was not a good one, the plaintiffs would not venture to proceed with the action.

Mr. Sebastian said that his learned friend was quite wrong about that.

Mr. Justice Kekewich: Do not your opponents say that, apart from trade mark, they had a common law right?

Mr. Hewitt said that was so. He desired to point out that if the action were proceeded with it would prove very expensive. Witnesses for the plaintiff would have to come from America, and the defendant would also have to call a number of witnesses. If his Lordship should determine the point which he mentioned all that might be obviated.

Mr. Sebastian, who opposed the application, said the whole question was whether there should be two trials or one. Whatever the result of the rectification case might be, his clients would still continue the action which they had instituted, and there would also be an inquiry. His learned friend had not shown any reason why the ordinary course should be departed from.

Mr. Justice Kekewich said he was not satisfied that he could hear this point of law as a pure point of law on the admitted facts without hearing the evidence, probably at considerable length, to determine the origin of the word "absorbine" and its meaning as applied to a particular preparation, because if he had to dispose of that one way or the other, it appeared to him that he should, after that, have to hear a great deal more. There could be little advantage in having an independent hearing. Mr. Hewitt had not satisfied him that his application fell within the rule guiding his discretion. The point raised by Mr. Hewitt must be determined at the trial.

Mr. Sebastian: Will your Lordship say anything as to the costs?

Mr. Justice Kekewich: I think you are entitled to the costs.

Medicine Stamp Duty Acts.

Sale of Medicines Unstamped.

On Wednesday, December 2, 1903, at Marlborough Street Police Court, London, Messrs. Max Schliephak, Limited, 44, Charlotte Street, Fitzroy Square, were summoned at the instance of Mr. W. A. Hyland for selling, in May and June last, eight proprietary articles liable to stamp duty, but which were unstamped. The articles were "Titley's Cough Mixture," "Herzog's Corn Plasters," "Olympian Oils," "Dr. Braam's Injection," "Ovaferrin," "Brou's Injection," "Woucherer's Gum Lozenges," and "Celebrated Female Mixture."

Mr. Dennis, for the Inland Revenue authorities, said that he would withdraw the summons respecting Dr. Braam's Injection and proceed with the others. The only question that would arise in this case was whether the articles were subject to stamp duty.

Thomas Jameson, Inland Revenue officer, having proved the purchase of various medicines,

Mr. Kirby, for the defence, urged that the cough mixture was not sold as a proprietary article, but simply as "the mixture." It originally had Titley's label on it, but that had been amended by the defendants by another stuck over it. "Exclusive right" by defendants was not proved. As to the corn plasters, they were covered by a German patent that had no force in this country.

Mr. Dennis contended that a patent showed an exclusive right in the article.

With regard to the "Olympian Oils," Mr. Kirby said that they were used as an embrocation and not for the cure of a disorder. Referring to "Ovaferrin," Mr. Kirby said he was afraid that must come within the letter of the law, but hardly within the spirit of the Act. "Brou's Injection" was only held out as a remedy in France, and the lozenges were simply sweets. He urged that a very fine line was drawn between the articles that were liable to stamp duty and those that were not, with the result that a foreigner could hardly distinguish between them. In fact, with regard to some of the articles, firms from which they had been bought had said they were not liable. The whole of the summonses, too, were open to discussion.

Mr. Denman, in giving his decision, said it was necessary in a criminal case to prove the facts for the prosecution strictly, and the defendants were entitled to set up any defence, however technical. Brou's Injection might have been put down in the summons as a "foreign medicine," and the summons have thus succeeded, but that proceeding was not taken. That summons and the one for Herzog's Plasters must fail, the latter on the ground that the foreign patent was not applicable to England. A fine of 40s., with 2s. costs, would be imposed on each of the other five summonses.

Mr. Dennis was proceeding to argue further with respect to Herzog's Plasters, when the magistrate pointed out that he had already got five convictions. Mr. Dennis said it was not a question of penalties, but he wished those concerned to understand that stamps must be used on the articles sold in this manner.

Northern Police Court, Dublin.

Charge Against a Druggist.

On Tuesday, November 24, 1903, before Mr. Mahony, Alexander Kirkland, druggist, of 3, Lismore Villas, Drumcondra, was charged with having forged bills from Thomas Phillips, 13, Essex Quay; John A. Ray, chemist, 15, Nassau Street; Leonard and Co., chemists, North Earl Street; and A. W. Gamage, 78, Grafton Street, thereby defrauding his employers, Messrs. Hugh Moore and Alexander, of Bolton Street, to the extent of £23 18s. The prisoner was manager of the drug department of Messrs. Hugh Moore and Alexander, and, according to the prosecution, in the cases referred to he forged bills from those firms on various dates by altering the figures and signing the names of the firms, and thereby getting paid for a far greater quantity of goods by his own firm than the firm received.

The prisoner was sent for trial, bail being refused.

Clerkenwell Sessions.

Receiving Stolen Pills.

On Thursday, November 26, 1903, before Mr. William Robert M'Connell, K.C., chairman, Arthur Levy, dealer, William Fordham, traveller, and James Lloyd Davies, chemist and druggist, until recently carrying on business in Mare Street, Hackney, came up for sentence, having at the last sessions been convicted of feloniously receiving 3,468 boxes of Beecham's pills, 2,274 boxes of Dr. Williams' pink pills, and 1,260 boxes of Scott's liver pills, the property of the Co-operative Wholesale Society, Limited, of Leman Street, E. Levy was ordered ten months' hard labour, and to pay £20 towards the costs of the prosecution. A sum of £60 found on him was also handed to the prosecuting company. Fordham was sentenced to six and Davies to one month's imprisonment in the second division.

LONDON GAZETTE NOTICES.

PARTNERSHIPS DISSOLVED.

Pinchen, T. J., and Williams, G. R., mineral water manufacturers, East Rudham, Norfolk, under the style of Pinchen and Williams.

Brushfield, T., and Randall, M., physicians, etc., Wimbledon and Merton, Surrey, under the style of Drs. Brushfield and Randall.

Rogers, A. A., and Featherstone, F. R., physicians, etc., Woolston, near Southampton, under the style of Doctors Rogers and Featherstone.

Dussek, A. S., and Webster, J., manufacturing chemists and tar and oil importers and refiners, Verney Road, Canal Bridge, Old Kent Road, and Lime Street, E.C., and Dussek's Wharf, Trundley Road, Deptford, under the style of Dussek Brothers and Co.

POISONING CASES AND INQUESTS.

The number of deaths by poisoning reported during the seven days ended Wednesday, December 2, 1903, was fifteen:—

Poison.	Accident.	Suicide.
Ammonia	1	1
Carbolic Acid	1	1
Chloroform	1	—
Hydrochloric Acid	—	1
Morphine	—	1
Narcotic	1	—
Opium	—	1
Oxalic Acid	—	2
Ptomaines	2	—
Strychnine	—	1
Sulphuric Acid	—	1
Total	6	9

Ammonia.—A woman at Manchester died from drinking liquid ammonia, followed by over a pint of paraffin oil. A man at Hartlepool committed suicide by taking a quantity of ammonia.

Carbolic Acid.—A woman at Newcastle committed suicide by taking carbolic acid, and a man at Stafford died from an accidental dose. The father of deceased had, some weeks previously, transferred the acid from a bottle bearing a poison-label to an ordinary beer-bottle.

Chloroform.—A man died under chloroform in the Leicester Infirmary.

Hydrochloric Acid.—A man at Bulwell committed suicide by taking spirit of salt.

Morphine.—An accountant at Newton Abbot committed suicide by taking morphine. The poison was supplied by a chemist who knew the man well, and all the statutory precautions were observed in the sale.

Narcotic.—A domestic servant at Barnes died from narcotic poisoning.

Opium.—An unidentified man was found dead at Brighton, the symptoms pointing to opium poisoning.

Oxalic Acid.—Two suicides with this acid are reported—a woman at St. Pancras and a man at Bedford.

Ptomaines.—A child at Hucknall Huthwaite, and a man at Manchester, died from ptomaine poisoning.

Strychnine.—A man at Newbridge committed suicide by taking five grains of strychnine.

Sulphuric Acid.—A woman at Hull committed suicide by taking sulphuric acid.

Attempted Suicides.—Carbolic acid, laudanum, salt of lemon, and vermin-killer were used in attempts at suicide.

COMPANY INTELLIGENCE.

C. R. Toyne, Limited.—Capital, £6,000, in £1 shares. Object, to acquire (1) the business carried on by C. R. Toyne, at 26, High Street, Putney, at Bartho House, Garrett Lane Wandsworth, and at 190, Upper Richmond Road, S.W., as C. R. Toyne, and (2) the business carried on by C. R. Toyne and J. W. Whitehead, at 145, Lower Richmond Road, and 12, Emily Terrace, Cooper's Arms Lane, also as C. R. Toyne, and to carry on the business of chemists, druggists, oil and colourmen, importers of and dealers in pharmaceutical, medicinal, chemical, industrial, and other preparations, etc. Registered office: 26, High Street, Putney, S.W.

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

Chemist's Will.—The late Mr. Barnard S. Proctor's estate has been valued at £5,301 6s. 5d.

New Photographic Society.—A society has been formed for Grange-over-Sands, to be called the Grange Photographic Society. The secretary is Mr. A. W. Hankinson, chemist, Grange-over-Sands.

Royal Photographic Society.—An ordinary meeting will be held on Tuesday, December 8, at 66, Russell Square, at 8 p.m. "The Theory of the Mariotype and Ozotype Processes" will be discussed by Mr. Thomas Manly.

The Digest of Criticisms.—The 'Digest of Criticisms on the British Pharmacopœia,' which was referred to in last week's issue, may be obtained from Messrs. Spottiswoode and Co., 54, Gracechurch Street, E.C. The price is 1s.

Fire.—A fire occurred on Saturday, at the premises of Mr. J. Ardern, chemist and druggist, of George Street, Ashton-under-Lyne. It originated in a store room, and much damage was done before the flames could be subdued.

School of Pharmacy Students' Association.—A meeting of this Association has been fixed for Friday, December 4, at 5.30 p.m., when Mr. R. R. Bennett will give a paper on "Oak-Galls." On December 18 it is hoped to hold a debate.

Royal Geographical Society.—An evening meeting will be held on Monday, December 14, 1903, at 8.30 p.m., at the Theatre, Burlington Gardens, W. Colonel Sir T. H. Holdich, K.C.M.G., will read a paper on "The Patagonian Andes."

"Advance in Electro-Chemistry" is the title of a paper which will be read by Dr. F. Mollwo-Perkin at the meeting of the Chemists' Assistants' Association, to be held at The Borough Polytechnic, S.E., on Thursday next, December 10, at 8 p.m.

Three Towns Chemists' Association.—At a Trade Section Committee Meeting of the Three Towns Chemists' Association, held on Monday, the following officers were elected:—Chairman, Mr. S. A. Perkins; Secretary, Mr. H. D. Davey; Treasurer, Mr. F. A. Spear.

Blaze in a Chemist's Shop.—A blaze was caused in a Swansea chemist's shop in an extraordinary manner. A dog chased a cat into the shop, and in the rush round the room upset a quantity of essence of heliotrope into the fireplace, which caused a big blaze, and damage estimated at £20.

Society of Chemical Industry.—A meeting of the London section will be held in the Chemical Society's Rooms, Burlington House, W., on Monday, December 7, when Dr. J. Grossmann will read a paper on "Cyanide Manufacture." The meeting will commence at 8 p.m.

A Chemist's Will.—The executors under the will of the late Mr. Robert Munn, chemist, of Burnley, yesterday paid over to the Victoria Hospital for Burnley and district the sum of £8,006, constituting the residuary estate of the testator bequeathed by him to that institution. Mr. Munn was for half-a-century registrar of births and deaths at Burnley.

The Supply of Radium.—The *Daily Express* has been told by "a member of the firm of W. Harrison Martindale, analytical chemists, of New Cavendish Street, who have the sole sale of radium in London," that the demand during the past few days, at the popular price of £10 per twelfth of a grain, has been astonishing.

Decimal System for England.—It has been resolved early next Session to introduce into the House of Lords a Bill for the compulsory adoption of the metric weights and measures throughout the United Kingdom. The first reading of the Bill will be moved by Lord Belhaven, and seconded by Lord Kelvin. It was decided to move in the House of Peers because it was evident that the House of Commons would be preoccupied with other affairs, but, when the measure has passed the House of Lords, it will be brought before the Commons at the first possible moment, and it is hoped by Sir Samuel Montagu, President of the Decimal Association, that a sufficient expression of public opinion will be forthcoming, at the time when the question is being debated, to convince the Government that they will do well to make it their own Bill.

Dentists and the Use of Cocaine.—The action in which a Stroud Carpenter, named Freeman, sued Mr. Ebenezer Apperley, dentist, of Stroud, for £161 damages, for alleged negligence in connection with the stopping of a tooth, was again heard at Gloucester County Court, on Saturday, by Judge Ellicott and a jury. It will be remembered that in October last, when the first action was heard, the jury failed to agree, and a new trial was ordered. The facts were that plaintiff went to the defendant, who stopped an aching tooth with cotton wool dressed with a preparation of cocaine. Plaintiff stated that he afterwards became giddy, and the next day he swallowed the cotton wool whilst at dinner. He then became seriously ill, and he contended that the defendant, Mr. Apperley, had put an overdose of cocaine into the cotton wool, and that that had caused his illness. The Judge said there was no case for the defendant to answer, and plaintiff was non-suited with costs. It was intimated that the decision would be appealed against.

Royal Commission on Arsenical Poisoning.—The final report of this Commission has now been issued. The Commission think that it would be unwise to express an opinion that any quantity of arsenic, however small, is to be regarded as admissible in articles of food. The report deals in detail with the various substances liable to become contaminated with arsenic, and the precautions which should be taken by manufacturers to exclude arsenic from foods. Recommendations are made as to improvements in official control over the purity of food, and the Committee recommends official standards which may regulate the administration of the Sale of Food and Drugs Acts. In the view of the Commission, it would be entirely proper that penalties should be imposed under those Acts upon any vendor of beer, of liquid food, or of any liquid entering into the composition of food, if that liquid is shown to contain 1/100th grain or more of arsenic in the gallon, and, with regard to solid food, if it contains 1/100th grain of arsenic or more in the pound. The report will be more fully dealt with next week.

The "Cash on Delivery" System.—A deputation from the Grocers' Federation waited on Lord Stanley, the Postmaster-General, at St. Martin's-le-Grand, on Wednesday, to offer a protest against the proposed "cash on delivery" postal system. Mr. Alderman Amos Hinton, J.P., who introduced the deputation, said the grounds of objection to the new departure by grocers were the danger of fraud on the public, particularly in the distribution of adulterated foods, the encouragement of increased foreign competition, especially from the nearer Continental countries, and the unfairness of further handicapping the small provincial trader. Lord Stanley, in reply, said that he was unable to share the fears which had been expressed. In his opinion it would prove both a public convenience and a benefit to shopkeepers. He wished, however, to assure the deputation that the system was not likely to come immediately into use. He wished to remind them, however, that the "cash on delivery" system was the natural corollary of the parcels post system, now so firmly and successfully established.

Sir William Ramsay on Radium.—Speaking last week at the Royal Institution, Sir William Ramsay said that the experiments conducted by himself and Mr. F. Soddy confirmed the results of other workers, as to the "transmutation" of radium into helium. They had found that besides the actual "rays" given off from radium, there was observable, after the emanation had been kept for a short time—about two days—in a sealed tube a spectrum of helium, which became brighter and more distinct from day to day. Sir William Ramsay also said that quite recently a fresh radio-active element had been discovered by Professor Giesel, thus bringing the total number of well-marked elements of this class up to six. As regarded the "life" of radium, his calculations seemed to show that it had at least two million years. The whole research pointed to a conceivable realisation of the dream of the transmutation of the elements. Subsequently, Sir William Ramsay has stated that it is less unlikely that gold should change into silver and copper, being elements of a lower atomic weight than gold, than that the alchemists' idea of making gold from the baser elements should be realised. But all such speculations are at present somewhat in the air.

Mr. Lord Gifford and the Pharmacy Bill.—It was found necessary, last week, owing to pressure on space, to condense the remarks made by Mr. R. Lord Gifford on the Pharmacy Bill at a meeting of the Executive of the North-East Lancashire Chemists' Association (see page 827). As a matter of interest Mr. Gifford's speech is now printed more fully. Mr. Gifford said that in October last the Pharmaceutical Council decided to proceed with the Pharmacy Bill, a clause being added merely to make the exemption of certain professional bodies quite clear. It was at the same time emphasised that Clause 7, around which criticism had centred, embodied the essential principle of the Bill, and would not be sacrificed. That seemed definite enough. There appeared, however, to exist still much loose thinking regarding the matter. The Bill stood or fell by Clause 7. It was the principle of the Bill, and could not be compromised. It was the Council's application of the principle that purely professional privileges must be safeguarded, and confined to qualified persons. Personally, he would have liked a more direct expression of principle, but as the Council was unanimous regarding the essential matter, all their endeavours ought to, and must be, exerted in prosecuting its object. Let them think what it all meant. That principle, which focussed the policy of the Council, was the foundation of all professions; therefore, by insisting upon it they made imperative the help and assistance of them all; they could not get away from it. It meant even more, for public opinion accepted it as a sound principle, as was proved week by week. Only the week before, Judge Coventry, at Blackburn, took for granted the principle. A month ago, the British Medical Association showed their keen anxiety on the matter, and the Scotch Court had upheld the claim of the chartered accountants against a company for using titles, and so on. They would see that if the doctrine was sound there could be no exceptions. Either it must be allowed in pharmacy or its necessity in other professional practices became at once debatable. This, he asserted, ensured them the earnest co-operation of the medical and allied professions. Their special and immediate work was to demonstrate that the accepted professional principle applied to pharmacy so far as the practice of the profession extended.

SCHOOL AND COLLEGE NEWS.

School of Pharmacy.—Old "Square" students are reminded of the annual smoking concert of the School of Pharmacy Football and Athletic Club, which has been arranged to take place on Tuesday, December 15, at the Crown Room, Holborn Restaurant, Mr. John Humphrey in the chair. Communications and applications for tickets should be addressed to Mr. A. Wade, 17, Bloomsbury Square, W.C.

Metropolitan College F.C. v. Lorn Reserves.—The College team continued their successful career by accounting for their opponents in the return match at Shepherd's Bush on Saturday by three goals to nil. The Lorn played only ten men, and had to play for the most part on the defensive. The heavy state of the ground made football difficult, but a pleasant game was played, and ended as stated. This is the Metros. sixth successive win, they having scored thirty-five goals to nil.

North of England School of Chemistry and Pharmacy.—The students of the above school visited the Elswick works of the Newcastle and Gateshead Gas Co. on Friday afternoon, and were conducted round by the manager, Mr. Swallow, and the chief chemist, Mr. Reed. Great interest was shown in the model of a gasworks, seen working with a charge of 1/1,000 ton of coal, and showing all the processes of condensation, scrubbing, and purification by lime chambers. Mr. Reed gave a demonstration of the use of the photometre for testing the illuminating power of the gas. The charging of the retorts in the large retort house was then seen, and after this the condensers and lime purifiers visited. Next the sulphate works claimed attention, the purification of the sulphuric acid from arsenic by means of sulphuretted hydrogen, and its conversion into ammonium sulphate, being watched with great interest, the cleanness of the crystals evoking great admiration. Finally, the "governor house" was inspected, from which all the gas made at the company's various works is distributed by eight large governors to the mains supplying the different districts of the city and neighbourhood. The house is quite new, and considered to be the largest and most up-to-date of its kind in the kingdom. Hearty votes of thanks to Messrs. Swallow and Reed, also to Mr. Chas. Ridley, chemist, through whose kind interest the visit was arranged, were accorded on the motion of Mr. F. R. Dudderidge, principal. A few days previously the students visited the brewery of Messrs. John Powell and Son, Gateshead, and were conducted round by the chief chemist. All the processes involved in the manufacture of beer were seen in actual operation and explained, from the grinding of the malt and its conversion into wort to the alcoholic fermentation in the vats. A microscopic demonstration of the testing of yeast was followed with great interest. A visit to the mineral water department terminated the proceedings, which were arranged by the kindness of Mr. H. Fail.

Annual Dinner of the Metropolitan College of Pharmacy.—The tenth annual dinner of the Metropolitan College of Pharmacy was held on Saturday evening of last week, in the King's Hall, Holborn Restaurant, Sir William Ramsay, K.C.B., F.R.S., presided, and the company numbered about 230. In proposing the toast of the evening, "The Metropolitan College of Pharmacy," the Chairman made a very interesting speech. He distinguished between pharmacy and the other branches of the science of chemistry. He urged chemists to devote their spare time to pharmaceutical research; he was sure that pharmacists just setting up in business for themselves had plenty of time on their hands, and they would be well advised in making a point of doing a little every day, so that they would not get off the trail. It was expected of chemists and druggists to conduct chemical researches in so far as they applied to pharmacy; the scientific chemist had enough to do in other directions, so had the bacteriologist. Referring to the qualifying examinations the chemist and druggist had to pass, he said the object of these tests was to prevent homicide, and he submitted that the best men to appoint as examiners in those subjects directly relating to the practice of pharmacy were men who were themselves practical pharmacists. Mr. Watson-Will, in replying, referred to the distinguished attainments of Sir William Ramsay, and more especially to his work in connection with radium. He also referred to the Major Examination, the decline of which he deplored. During the evening Mr. Watson-Will was presented with a very handsome gift by the past and present students of the college; the presentation consisted of a silver tea and coffee service, with salver, and silver cigar-case. Other speakers who contributed to the after-dinner oratory included Mr. Thomas Tyrer, Surgeon-General W. G. Don, Professor Divers, Dr. F. B. Power, Mr. F. J. Boss, Mr. T. H. Moore, Mr. H. Lucas, Mr. F. De Morgan, and Mr. D. J. Williams. The function was, perhaps the most successful of the series.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. R. H. Rendle, chemist and druggist, Devonport, has been unanimously elected Chairman of the Sanitary Committee of that town.

Mr. John James Shawyer, chemist and druggist, of 12, Wood Street, Swindon, has been elected to fill a casual vacancy on the Town Council.

Mr. George Peacock, chemist and druggist, Kirby Moorside, Yorkshire, has sold his business to Mr. John Burnett, chemist, Stockton-on-Tees.

Mr. Thomas Yardley, of the drug stores, 180, Moss Lane East, Manchester, has disposed of his business to Mr. J. T. Butterworth, chemist and druggist, 63, Moss Lane West.

Mr. H. Vibert has purchased the prescription books, stock, and fittings of the old-established business carried on by Mr. J. Maurice, at 34, Bedford Street, Plymouth, and will continue the business at 13, Bedford Street, Plymouth.

Messrs. King, Walshaw and Co., chemists and druggists, of 4, Market Place, Huddersfield, have acquired the prescription books, recipe books, and the right to prepare all the preparations of the late Mr. R. Fell, chemist and druggist, of King Street, Huddersfield.

Mr. F. Bird, chemist, M.P.S., Spon Street, Coventry, has this week removed his Swanswell pharmacy branch, after extensive structural alterations, to 35-37, Stoney Stanton Road, corner of Swanswell Street. The old business is continued as usual. It is over fifty years since Mr. Bird's apprenticeship to the profession in the old city. Mr. Bird is an alderman of Coventry, and chairman of the Education Committee at the present time.

TRADE NOTES.

Prizes for Chemists' Wives and Daughters.—Particulars of what should prove a very interesting competition will be found in the advertisement pages of this issue. Messrs. Wright Layman and Umney, Limited, are offering prizes for the best advertisements based on certain familiar quotations, and only the wives and daughters of registered chemists and druggists may compete.

Tobaccos, etc.—A new catalogue of tobacco, cigars, and cigarettes, comprising between 500 and 600 pages, has just been issued by Messrs. Singleton and Cole, Limited, 11 to 16, Cannon Street, Birmingham. Chemists and druggists interested in this class of goods should apply for this list. Messrs. Ingram and Royle, Limited, 26, Upper Thames Street, London, E.C., also offer advantageous terms to chemists on cigars, etc., and readers should communicate with them.

Slip Labels for the 'P.J. Formulary.'—The slip labels appearing this week in the editorial article on the medicine stamp question (see page 839) have been designed by Messrs. Ford, Shapland and Co., Great Turnstile, Holborn, W.C. This firm has followed very carefully all the Somerset House movements, and is thoroughly alive to the importance of the question. These labels can be supplied at the ordinary rates for slip labels, and meet the present emergency very well.

The "Repello" Clinical Thermometer.—The main feature of this ingenious little contrivance (manufactured by Mr. G. H. Zeal, 82, Turnmill Street, London, E.C.) is that it can be re-set after the temperature of the patient has been taken without shaking down. By applying pressure with the finger and thumb to a flattened bulb placed at one end of the tube the mercury is forced down the bore, and the thermometer is ready for use. Any arrangement which obviates the bother of "shaking down" is sure to be welcomed by those who use clinical thermometers.

Plasters.—Specimens of various classes of plasters, manufactured by William Mather, Limited, Dyer Street, Hulme Manchester, have been submitted to the Journal. These include salicylic acid and cannabis indica plasters on pink silk and on green silk, infirmary plasters spread on strips, rubber adhesive plaster in rolls, and porous plasters of several kinds. They are, without exception, of the finest quality, whilst they are neatly packed for sale. Goods manufactured by this firm, however, are too well known to require further description, and for fuller particulars as to terms, etc., readers should write for price-lists.

"Patent" Medicines.—Dr. Robert Hutchison has delivered a lecture at the London Hospital on patent medicines, in the course of which he purports to give the composition of several of the most widely known proprietary remedies. The substance of the lecture is reprinted at page 842. It will probably give rise to a good many disclaimers from the proprietors. Already two firms have written to us to the effect that, so far as their preparations are concerned, the "approximate ingredients" are very wide of the mark. One, from the proprietors of Congreve's Balsamic Elixir, denies categorically that any of the ingredients mentioned form part of their preparation, except alcohol, which is used as a solvent.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

General Markets.

London, Thursday, December 3, 1903.

Few changes of importance are to be reported in the prices of Drugs and Chemicals, and business generally has been far from brisk. The chief feature has been the reduction in the price of Cocaine from 13s. 6d. to 11s. 9d. per ounce for lots of 175 ounces. Opium and its Alkaloids, Quinine, and, in fact, most other drugs are quoted at the same prices as before. There has been considerable activity with regard to Peppermint Oil since the last sales, and there is decidedly a firmer tendency; the price of the Oil is expected to become still higher in January. There has been a very fair private demand for the finer grades of Cardamoms, which are slightly higher. Ginger, Nutmegs, and Cloves were very slightly cheaper than before at the Spice auctions.

ARROWROOT.—At Wednesday's sales no St. Vincent was offered; 15 barrels Natal were bought in at 6½d.

ACID CITRIC.—1s. 0½d. per lb.

ACID TARTARIC.—English, on the spot, 1s. 1d.; foreign, 1s. to 1s. 0½d.

BISMUTH CARBONATE.—8s. 1d. per lb.; subnitrate, 7s. 4d.

BLEACHING POWDER.—English, £5 5s.

BORACIC ACID.—Crystals, 22s. 6d.; powder, 24s. 6d.

BORAX.—Crystals, 13s. 6d. to 14s. 6d. per cwt., according to quantity; powder, 15s. 6d. to 16s. 6d.

BROMIDES.—Unaltered.

CARDAMOMS.—Finer grades are slightly higher.

CAPSICUMS—Steady. One bale good bright Natal sold at 57s. 6d.

CLOVES.—At auction 100 bags fair Zanzibar offered and bought in at 7¾d. Privately Zanzibar have been weak and lower, but close steadier at some recovery. For delivery about 800 bales sold at 7⅜d. to $7\frac{5}{16}$d.

COCAINE.—The Hydrochloride has been reduced 1s. 9d. per ounce since last week, and is now quoted at 11s. 9d. per ounce for quantity.

COCONUT OIL.—Ceylon, spot, £25 10s.; Cochin, spot, £30 10s.

CODEINE.—The quotations remain as follow:—8s. 11d. per oz. for the pure alkaloid, 7s. 11d. for the muriate and sulphate, and 7s. 1d. for the phosphate.

GINGER.—There was a slow demand at auction, and cheaper rates. Jamaica sold irregularly at steady to slightly lower prices. 488 packages offered and 216 sold, middling to fair bright small at 47s. 6d. to 50s., good ordinary at 41s. to 43s. Slow demand for Cochin. Medium and bold bought in at 65s.

GLYCERIN.—68s. per cwt. for ½-ton lots.

IODIDE OF POTASSIUM.—The convention price is unchanged at 8s. 9d. per lb.

IODINE.—9s. 9d. to 10s. per lb. for the resublimed, according to quantity.

IODOFORM.—11s. 8d. per lb. for the pure crystals or powder.

MACE also is quiet.

MERCURIALS.—Calomel, 2s. 8d.; corrosive sublimate, 2s. 4d.; red precipitate, 2s. 11d.; white precipitate, 2s. 11½d.; mercuric sulphate, 2s. 4d. per lb.

MORPHINE.—Unchanged at 4s. 6d. to 4s. 8d. per oz. for the hydrochloride.

NUTMEGS.—West Indian a little cheaper. Of Penang, one case only sold, 64's at 2s. 8d.

OPIUM.—The market here has been quiet, and prices are much the same as before.

OXALIC ACID.—2⅝d. to 2⅞d., delivered free London.

PEPPER.—At auction 5 bags white Singapore sold, good at 10½d. 25 bags fair limed Penang were bought in at 9¾d. Privately the demand continues slow.

PEPPERMINT OIL.—There has been somewhat heavy buying since the sales, and prices closed at 14s. for H.G.H. (American). Japanese Oil and Menthol also have increased in price, Menthol having reached 20s. 6d.

PIMENTO—Lower. At Wednesday's auctions 161 bags offered and 70 bags sold, greyish at 3¾d., fair at 3⅞d., and good at 4d.

QUICKSILVER.—£8 7s. 6d.

QUININE.—Slow at 1s. 0¼d. spot.

PATENTS AND TRADE MARKS.*

New Patent Applications.

SULPHOCYANIDES (No. 24,767 of 1902).—J. Tcherniac, Freiburg, Breisgau, Germany. Relates to the manufacture of sulphocyanides from crude coal gas, which contains hydrogen cyanide and sulphuretted hydrogen. Said gas is passed through magnesia or its carbonate, or a double carbonate of magnesium and ammonium, or another metal, preferably suspended or dissolved in some suitable menstruum, like water, or an aqueous saline solution; for example, solutions made by adding ammonium carbonate and ammonia, not in excess, to an aqueous solution containing 15 to 20 per cent. of magnesium sulphate may be used. Magnesium sulphocyanide is produced, and remains in solution in the water, if this is present. By evaporation the said product may be crystallised.

MANUFACTURE OF ALBUMINOID SUBSTANCES FROM MAIZE OR MAIZE RESIDUES OR MATERIALS (No. 28,543 of 1902).—E. Donard, 11, Rue Edouard Detaille, Paris; and H. Labbe, 30, Rue du Luxembourg, Paris. Relates to the production of an albuminoid substance from maize or maize residues by subjecting the raw material, after it has been deprived of its greasy or oily constituents, to extraction with ethylic alcohol of high strength, pure or not, or having methylic alcohol or methylic alcohol and acetone added thereto, or to extraction with methylic alcohol containing ethylic alcohol or not, and in then treating the solution thus obtained with a large excess of hydrated liquid or water. An albuminous product, consisting of hydrates of the two albuminoid substances herein described, is precipitated, this being then dried *in vacuo* or at a low temperature.

EMBROCATION (No. 6,549 of 1903).—G. Hollingsworth, 38, Paxton Road, Chiswick, Middlesex. Relates to the introduction of petroleum jelly (vaseline) into embrocation for the purpose of causing hair to grow upon old scars, wounds, sores, and the like. Contains the following ingredients:—1 oz. acetic acid, diluted with 4 oz. of water, to which is added 1 oz. of serum. The two are shaken well together, and 3 oz. of turpentine added. This mixture is again shaken. To 1 oz. of the resultant mixture, heated to 150° Fahrenheit, add 1 oz. of vaseline, also heated to 150° Fahrenheit. Shake well together and add the remainder of the first mixture.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and 'Patent Notes for Inventors' free on application.

IMPROVED CHEMICAL COMPOSITIONS OR PRODUCTS OF THE SERIES OF PHENOLS, BYE-PRODUCTS, AND PROCESSES OF MAKING SAME (No. 16,349 of 1903).—L. H. Cress, of Fremont, Sandusky, Ohio, U.S.A. Relates to the manufacture of a new chemical product called "cetyl-guaiacyl" (abbreviated as "cetiacol" or "palmiacol"), formula $C_{23}H_{40}O_2$. One process of manufacture consists in causing reactions to take place between an alcoholate solution of alkaline guaiacyl and spermaceti, then treating the product of this reaction with glycerin to separate the "cetyl-guaiacyl" from the bye-products, and, finally, purifying the "cetyl-guaiacyl." Another process consists in cooling absolute alcohol, and slowly feeding sodium to the same, thus forming sodium alcoholate C_2H_5NaO; then adding guaiacyl to this compound, thus forming an alcoholic solution of sodium-guaiacyl; then pouring this solution upon fused spermaceti, and causing thorough admixture to take place; then digesting the resulting mixture about three hours at a temperature of about 83° C.; next incorporating this fluid with glycerin, and then separating the "cetyl-guaiacyl" from the mixture. Other processes are described. This new product is lighter than water, soluble in alcohol, ether, chloroform, and oil, but insoluble in water, and having a melting point at 15° C.

Note.—Opposition to the grant of any of the above-mentioned patents must be filed at the Patent Office, on or before January 4, 1904.

New Trade Mark Applications.

"**ODOL**," for chemical substances used in manufactures, photography, or philosophical research, and anti-corrosives, excluding gold paint and photographic chemicals (No. 257,554); also for perfumery, etc. (No. 255,118). Additional marks for perfumery, etc., "Odola" (No. 255,129), "Odilol" (No. 257,559), "Eadol," "Lodol," and "Otol" (Nos. 257,562-4), all in the name of K. A. Lingner, 26, Southwark Bridge Road, S.E.

"**VICTORY**" label, for an ointment for veterinary purposes, by J. Johnson, 32, Church Street, Burnley. 256,894.

"**BOSKOMA**," for chemical substances, used for agricultural, horticultural, veterinary, and sanitary purposes, by W. T. W. Harper-Adams, Agricultural College, Newport, Salop. 258,189.

"**RENASTYPTIN**," for a preparation used in veterinary medicine, by Willows, Francis, Butler, and Thompson, 40, Aldersgate Street, E.C. 258,265.

"**LANESINE**," for greases and fats specially prepared as a base for medicated ointments, etc., by Vereinigte Chemische Werke Aktiengesellschaft, Salz-Mer 16, Charlottenburg, Berlin. 256,886.

"**CRYSTAL SPRING**" health salt label ("Crystal Spring" disclaimed), for a medicinal chemical substance for human use, by Blyton Astley and Co., 76, Gordon Street, Lower Broughton, Manchester. 255,597.

"**SANTALOIDS**" ("Santal" disclaimed), for a medicine for human use; "Streptolytic Serum" ("Strepto" and "Serum"), for a serum for use for inoculation, by F. Stearns and Co., Detroit, Michigan, U.S.A. Nos. 256,975 and 257,085.

"**FLIAWAY**," for medicated articles for human use, by R. Stothert and Sons, Albion Works, North Road, Asherton, Lancs. 257,188.

"**HEMABOLOIDS**" ("Hema" disclaimed), for chemical substances used in medicine and pharmacy (No. 257,438). "**FORMOLYPTOL**," for a fluid preparation for internal and external use (No. 258,031). By the Palisade Manufacturing Co., 100, Palisade Avenue, Yonkers, New York, U.S.A.

"**WYONIA**" ("Wyon" disclaimed), for a medicinal prepara-then adding geraiacyl to this compound, thus forming an "257,462.

"**KOLDENE**" ("Cold" and "Kold" disclaimed), for a medicine for use by mankind, by T. Wall, 76, Porter Street, Hull. 257,477.

"**SANATOGEN**" ("Sanato" disclaimed), for chemical substances prepared for use in medicine and pharmacy, by Bauer and Co., Friedrich Strasse, 231, Berlin. 257,583.

"**NEUROX**" ("Neuro" disclaimed), for a remedy for neuralgia, etc., by A. L. Thompson, 181, Snargate Street, Dover. 257,586.

"**HYPOKIN**," for medicine for human use, by E. Gould and Son, Limited, 59, Moorgate Street, E.C. 257,592.

"**MAWSON'S STANDARD COLLODIONS**," and device of a castle on a standard or flag, for collodions for use in surgery, by Mawson and Swan, 11-15, Mosley Street, Newcastle-on-Tyne. 257,652.

"**TREKKO**," for medicine for internal use, by A. Cousins, 34, Fore Street, Buckfastleigh. 257,690.

"**RHEUMORS**" ("Rheumo" disclaimed), for a medicine by R. C. W. Humfrey, 151, Ferme Park Road, N. 257,851.

"**SAMAND**," for a medicine by S. Rogers, 192, Hyde Road, Ardwick, Manchester. 257,977.

"**LIDELCO**," for chemical substances prepared for use in medicine and pharmacy, by T. H. Bowden, 43, King William Street, E.C. 258,066.

"**ALBARGINE**" ("Albar" disclaimed), for chemical substances prepared for use in medicine and pharmacy, by Farbwerke vorm. Meister Lucius and Brüning, Hoechst a/Main. 258,119.

"**SOLANGE**," for a perfume, by Lecaron and Fils, 6, Avenue de L'Opéra, Paris. 257,895.

"**POMPONNET**" ("Pompon" disclaimed), for perfumery, etc., by M. W. Carmichael, 46, Dover Street, Piccadilly, W. 257,902.

"**ROEROMA**," for perfumery, etc., by A. Roe, 31, Old Compton Street, W. 257,943.

"**ROLGEDA**," for perfumery, etc., by A. Gilmour, 451, Stockport Road, Longsight, Manchester. 258,342.

Note.—Opposition to the registration of any of the above-mentioned Trade Marks must be filed at the Patent Office on or before December 28 1903.

REVIEWS AND NOTICES OF BOOKS.

'Fractional Distillation.' By Sidney Young, D.Sc., F.R.S., Professor of Chemistry in University College, Bristol. Pp. 284. Price 7s. 6d. London: Macmillan and Co., Limited. 1903.

The author, whose transference to Trinity College, Dublin, has recently been announced, has for a considerable time been known as one who has paid particular attention to the subject of the vapour pressures and boiling points of mixed liquids. His paper, read at the meeting of the British Pharmaceutical Conference this year, on the preparation of absolute alcohol from strong spirit, was one of the most practical of the communications to that gathering. The book under notice shows the same characteristic; it is eminently practical throughout. A considerable portion of the book deals with modifications of the still-head, it being recognised that efficiency in this respect is of the highest importance. The results are also given in this book, in many cases for the first time, of numerous experiments conducted while it was being written. The chapters which give directions for carrying out fractional distillation will be most useful to many pharmacists. But the author does not neglect the theoretical consideration of his subject; moreover, he has been able to treat of very difficult themes, such, for example, as the composition of liquid and vapour phases, with no little lucidity. The whole book is fully up to the standard associated with the other manuals for students, issued by Messrs. Macmillan, and can be cordially recommended.

'The Latin Grammar of Pharmacy,' for the use of medical and pharmaceutical students. By Joseph Ince, F.C.S., F.L.S., F.G.S. Eighth edition. Pp. 371. Price 5s. net. London: Baillière, Tindall, and Cox. 1903.

Mr. Ince's 'Latin Grammar of Pharmacy' is so well known and appreciated that it would be superfluous to detail its scope or comment on the manner of treatment. The eighth edition differs only from the seventh by the addition of three pages, which are devoted to the Latin rendering of fractional parts of a grain. These pages should convince the student that it is essential to have a thorough knowledge of the ordinals given earlier in the book. No book on the subject equals the 'Latin Grammar of Pharmacy.' It is so complete as to render criticism both ungrateful and ungracious; the suggestion may be made, however, that the vocabularies might be extended with advantage to include all the words with which the pharmacist may meet.

PRACTICAL NOTES AND FORMULÆ.

Shoemakers' Ink.

Extract of logwood, 5; yellow chromate of potassium, 0·6; brilliant black B., 1; anhydrous ferrous sulphate, 30; copper sulphate, 5; rain water, 450. Dissolve the extract in water, 200, by the acid of heat; then add the chromate and the brilliant black. When these have dissolved, allow the liquid to cool. Meanwhile dissolve the ferrous and cupric sulphate in hot water, 250. Allow the solution to stand for eight days, decant and mix with thorough agitation.—*Seifensieder Zeit.*, **30**, 57.

Unna's Preparations for the Hair.

Boro-Chloroform Alcohol.—Boric acid, 1; alcohol, 90 per cent., 100; chloroform, 5.

Sublimate Vinegar.—Acetic acid, 10; corrosive sublimate, 1; alcohol, 90 per cent., 10; water, 990.

Ichthyol Salicylate Soap.—Ichthyol, 10; salicyclic acid, 5; salve soap, 85.

Iodosublimate Soap.—Corrosive sublimate, 1; glycerin, 100; tincture of iodine (1:10), 900.

Croton Oil Pencils.—Croton oil, 10; woolfat, 5; yellow wax, 5.

Compound Chrysarobin Ointment. — Chrysarobin, 5; ichthyol, 5; salicylic acid, 2; woolfat, 30; vaseline, 58.—*Western Drugg.*, **25**, 121.

Vanilla Essence.

Vanilla, cut fine, 20, is rubbed to a coarse powder with dry powdered milk sugar, 40, then moistened with alcohol (68 per cent.), 10, and allowed to stand for two hours in a well-closed vessel. The mixture is then lightly packed in a percolator, moistened with alcohol (68 per cent.), 40; the lower orifice is closed, and the mass allowed to macerate for eight days. Percolation is then continued, more alcohol (68 per cent.), being added in sufficient quantity to bring the total weight of the percolate to 110.—*Pharm. Zeit.*, **48**, 732.

LIABILITY TO MEDICINE STAMP DUTY.

In reply to a letter of inquiry addressed to the Board of Inland Revenue by the Editor of the *Pharmaceutical Journal* on November 24, the following official communication was received just as the present issue of the Journal was going to press. On account of its great importance, arrangements were promptly made to insert the letter, with the latest list of descriptive titles now held to be dutiable of themselves:—

Inland Revenue,
Somerset House, London, W.C.
December 3, 1903.

Sir,—With reference to your letter of the 24th ult., and with regard to the question of liability to Medicine Stamp Duty as affected merely by the descriptive label attached to the medicine, I am directed by the Board of Inland Revenue to acquaint you that they have arrived at the following decisions:—

(1) Medicines described by reference to a disease are liable, such as "Cough Mixture," "Corn Paint."

(2) Medicines described by reference to an organ of the body alone are not liable—such as "Liver Pills," "Hepatic Mixture," "Throat Pastilles," "Bronchial Mixture."

(3) Medicines described by reference in general terms to their operation are not liable—such as "Aperient Pills," "Emollient Ointment," "Astringent Mixture."

(4) But if to an organ of the body a word or words be added indicating the operation of the medicine upon the organ of the body, liability is incurred—such as "Blood Purifier," "Liver Invigorator," "Aperient Liver Mixture."

The above decisions relate solely to descriptive labels on the medicine. But it must be clearly understood that if any claim be made to a proprietary or exclusive right in the medicine, or to a secret art for preparing the same, or if the medicine be held out or recommended in any other way—for instance, by a leaflet, handbill, or advertisement—as beneficial to the prevention, cure, or relief of any distemper, malady, etc., incident to or in any way affecting the human body, liability to the duty would undoubtedly be incurred by such recommendation.

It may be added, however, that in any case in which a medicine, not being a proprietary or patent medicine, is liable to duty, then, if the ingredients of which the medicine is composed be adequately indicated on the label, or if the formula from which the medicine is prepared be either given in full thereon, or a reference be made to it as found in some well known and recognised book of reference, the exemption accorded to well known remedies sold by duly qualified chemists becomes applicable.

I return herewith the duplicate list forwarded by you in which the dutiable titles have been underlined in black ink.

I am, Sir,
Your obedient servant,
E. E. Stoodley.
Secretary.

The Editor,
Pharmaceutical Journal.

List of Dutiable Titles.

Antiseptic Throat Pastilles
Aperient Liver Mixture
Blood Purifier
Blood Purifying Pills
Brain and Nerve Tonic
Brain Tonic
Cardiac Tonic
Catarrh Smelling Salts
Cathartic and Liver Pills
Liver and Blood Purifying Pills
Liver Cleanser
Liver Invigorator
Liver Tonic
Lung and Bronchial Tonic
Lung Tonic
Nerve Tonic
Nervine Tonic
Pectoral Lung Tonic
Purifying Blood Pills
Purifying Stomach and Head Pills
Skin and Blood Purifier
Teething Powders
Tonic Throat Mixture
Uterine Tonic

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

Radium Salts: Adulteration Extraordinary.

Being pretty constantly in touch with Sir William Ramsay, F.R.S., of University College, whose acquaintance with radio-active substances is unique, I was surprised to learn from him that of the specimens of the bromide submitted to him by medical men, one was from, say, 5 to 10 per cent. pure, the other 25 to 30 per cent. pure. Sir William appositely remarked "these people are being charged full price for very inactive preparations." I have Sir William's permission to quote this fact in the interests of medical science. It is a most regrettable circumstance that the possibilities for good of these radio-active salts in relation to one of the most malignant of human diseases which afflict poor humanity should be made the subject of commercial greed. It will be well if and when radium or other salts of this character are for sale that a guarantee should be demanded as regards them from the seller, or they should be submitted to a competent analyst. The letter of Sir William Ramsay to the *Daily Mail* of Tuesday, December 1, is sufficiently full of detail to enable a competent physicist and analyst to make this test.

Stratford, December 1, 1903. Thos. Tyrer.

Union is Strength.

I read with pleasure the article by Mr. Chas. T. Allen in your last issue, and I wish him success in the crusade he has initiated. His facts are undeniable, and the conclusions he draws therefrom are, I believe, in the main correct. He asks the question, "Who is responsible for the present position of the chemist?" and his answer that chemists themselves are mainly to blame, owing to their failure to support the Pharmaceutical Society, is undoubtedly correct. So far so good; but I should like to carry the matter still further, and to ask another question, "How can the matter be remedied?" As I accept Mr. Allen's conclusions, the question really is, "How can the Pharmaceutical Society be made really representative?" In the first place, membership might be made compulsory, and the Society have power to strike anyone off the Rolls for unprofessional conduct. This is as it should be, but whether it is a practicable solution of the difficulty is perhaps doubtful. Another method is to make some definite distinction between a member and a non-member, such as excusing the former from jury service—which is, I think, a reasonable request. Either of these alternatives would be good, but the drawback to both is that they would require more legislation, and so are not, perhaps, practicable in the immediate future. What, then, is to be the next step? This, I think, rests with the Society. "If the mountain will not come to Mahomet, then Mahomet must go to the mountain." Let the Society institute a vigorous canvass throughout Great Britain, either by paid agents or by a series of leaflets sent to chemists at intervals of a week or a fortnight. Let these put forward in plain and forcible language the fact that chemists must pull together, and that the Society is only waiting for an increase in its membership before instituting a vigorous forward movement. Anyone who has ever answered any of the American advertisements now appearing in English monthlies will know how well the advertisers follow up their first circular. Let the Society lay aside its official superiority, and send a series of well-written letters to every chemist on the Register, setting forth the facts that if chemists wish for strengh the only way is unity. The principals of the various training colleges might render valuable help by instilling into the minds of their students the duty of joining the Society. I should imagine that most Square men are members. Let the chemists of Great Britain once realise that the Society is wide awake and means business, and I think they will respond. I must not trespass further on your space, except to say that Mr. C. T. Allen deserves our thanks for the energetic way in which he has opened the discussion, and I sincerely hope that this time we shall reach some practical result.

Reading, November 27, 1903. Arthur E. Deed.

Bacterial Therapeutics.

I read with a great deal of interest the lecture of Dr. Taylor Grant on pathogenic and non-pathogenic bacteria appearing to the *Pharmaceutical Journal* of last week, also a similar innovation in the *Liverpool Mercury* of the 24th inst., delivered at Bangor by Dr. Myles. But I would like to ask these gentlemen: Wherein does their theory of sterilising milk, meat extract, etc., by boiling compare with the theory of biogenesis propounded and expounded by other professors? I myself am inclined to think that if more of the so-called tuberculous milk, meat extract, and less quackery and intoxicating drink were introduced into the squalor of the poor man's residence, there would be less of the pathogenic side of the question to discuss, and it would certainly be much more compatible with the theory of biogenesis. For it is next door to the public-house, rather than next door to the dairy, that we find that antiseptic dressings for cuts and wounds are mostly called into requisition.

Garn, R.S.O., November 26, 1903. John Williams.

The Vitality of Seeds.

A still more remarkable instance of the extraordinary vitality of henbane seeds than those mentioned by Mr. F. A. Walker, D.D., and Mr. E. M. Holmes, F.L.S., in your issues of October 31 and November 7 ult., has perhaps sufficient importance to be placed on record. About four years ago a considerable portion of the foundations of the ancient Priory, near Belvoir Castle, Leicestershire, was laid bare, in the cause of antiquarian research, and the soil and other *débris* thrown out on the adjacent old pasture land. The following year some remarkably fine plants of *Hyoscyamus niger* grew, flowered and ripened their seed, amidst thistles and nettles. Several plants appeared the year after, but since that time they have, apparently, become extinct. Now, as this Priory is said to have been demolished in the reign of Henry VIII., a much longer period has elapsed than in either of the instances mentioned above. Although *Conium maculatum* abounds in the neighbourhood, I have never seen a single plant of *Hyoscyamus niger* growing wild within a radius of twenty miles from Belvoir Castle.

Woolsthorpe, December 1, 1903. G. Welborn.

Emplastrum Belladonnæ, B.P.

I note Mr. Tharratt's statement, at Liverpool, to the effect that a belladonna plaster had caused considerable trouble. I should be very interested to know whether any other readers have got into difficulties with this. I am inclined to think the official preparation is too strong for general use, particularly when one considers the large number of persons who are highly susceptible to the effects of belladonna.

November 28, 1903. "Tropin" (259/24).

Spoiled Medicine Stamps.

In your article on "The Medicine Stamp Duty Acts," in the Journal of November 28, under the heading 'Allowance for Spoiled Stamps, you state that they may be recovered within six months of being spoiled. It was formerly the case, but the time has been extended, and allowance may be claimed within two years.

Stonehaven, November 28, 1903. A. Lyon Wood.

⁂ Our correspondent is right on this point, the extension having been legalised by the 61 and 62 Vict., cap. 46, sec. 13.—[Ed. *P.J.*]

The Medicine Stamp Difficulty.

There is a well-known proverb, familiar to all but the most clumsy slanderers, which may be paraphrased thus:—"Don't accuse your neighbour of lying, unless you are sure of your facts." The advice is always sound, but never sounder than when the past history of the accuser will not itself bear investigation. He is but a sorry fellow, as much fool as knave, who by deliberately ignoring the maxim invites a scrutiny of his own indiscretions. But, as is so often demonstrated, *quem Deus vult perdere, prius dementat*, and, just as the certified lunatic, in spite of the pathos of his affliction often compels a smile, so also there is an amusing element in the latest and most distressing developments of Medicine Stamp matters. Two trade journals—to one of which only, be it noted, the above remarks apply—have from time to time conceived that it would add to their reputation if they were to direct the officials of the Board of Inland Revenue into paths of ineptitude hitherto untrodden. "The path of glory," however, "leads but to the grave," and, in this instance, unfortunately, it is the commercial interests of qualified chemists and druggists that have been subjected to the operation of interment at the hands of the over-enterprising seekers for fame. The extraordinary thing is that those who have thus unwisely wielded pick and shovel appear to think that they are benefactors to the trade whose interests they claim, with smug complacency, to serve. By a sad coincidence, the editor of each of the journals referred to was able, on the same day last week, to announce, in reply to his communications with the Board—what? Nothing less than the withdrawal of valuable "concessions" previously granted to qualified chemists and druggists. Thus, while one journal almost plumes itself on the fact that a letter from its editor has caused the officials at Somerset House to recant their previous expression of opinion that "nerve-tonic" and "blood-purifier" were not liable descriptions, the other is able to give utterance to the proud boast that, in answer to its editor's letter, the Board has decided to turn another somersault, and to insist on the absolute identification on labels of formulæ in works of reference. The result of the latest changes, as many chemists have already realised, is in all cases trouble and, in some, expense. The organ which vaunts its responsibility for the second of the changes is at least honest and consistent in its clumsy officiousness. To it came the inspiration last July to inquire of the Board whether a "cough-mixture" dispensed and so labelled from a physician's prescription should bear a stamp. Although the official reply was in the affirmative, it is now known, with certainty, that the answer was only given because there seemed to be no logical alternative, and that the officials at Somerset House much regretted that the question had ever been raised. There is no doubt whatever that the Board would have been perfectly willing to close its eyes to the liability incurred by such a label as "when the cough is troublesome" on a bottle of medicine prepared according to a medical man's prescription. But the sleeping dog was not allowed to lie. He was made to bark. Whether or not he will bite, it is now quite impossible to foretell. It is, however, to the credit of the well-meaning, if unfortunate, oracle from Bishopsgate Street that it, at any rate, cannot be said to have given help or advice to the grocer, the company-promoter, and the huckster as to how they may avoid conflict with the bulldogs (or bloodhounds) of Somerset House when encroaching on the chemist's ground by selling medicines.

London, November 28, 1903. A. G. C. Paterson.

The Students' Competition.

Since the announcement was made in the *Pharmaceutical Journal* columns that special articles would be devoted to students' subjects weekly, and that an examination would be held in connection with them, I have been desirous of expressing my appreciation of the enterprise, and of saying (as a student myself) of what great value I expect to find the papers in the elucidation of students' difficulties. The only point on which I am at variance with your scheme is that of offering a prize for competition. It seems to me a pity to introduce what may be called the remunerative element into a scheme where the interest of the subject and the satisfaction of proving—or, at all events, testing—one's knowledge should be self-sufficing. I cannot but think that the majority of student readers will value the papers and questions set on them for their own sake, without the stimulus of prizes being offered; whereas the conditions—as to age, etc., which I suppose must govern a prize set for competition—may debar some student from entering the competition who would otherwise thankfully avail himself of the valuable opportunity offered. Trusting I am not too late in offering this point of view to your consideration,

November 22, 1903. "Etonius" (356/50^{a}).

⁂ It is to be hoped that the competitors will value the work they do for its own sake, but their appreciation need not be lessened because one or two of their number win a prize of books.—[Ed. *P.J.*]

The Pharmacy of Phenol.

Allow me, a humble and contrite fledgling of the pharmaceutical craft, to thank Dr. McWalter sincerely for his learned discourse upon the pharmacy of phenol, for who knows but what it may have saved me from a blighted career? For instance, I had a gentleman in my place, the other night, suffering from a morbid condition of the alveolar periosteum. In my crass and benighted ignorance I swabbed his gums with Ac. Carbol. Liq., B.P. He started, gave me a reproachful look, and hurriedly left the shop. I wondered what was the matter. I met him next day, and meant to ask him, in my usual genial way, if he was better; but he quickly crossed the street, and has not even looked at me since. Now I know why. I shudder to think of the life-long enemies I have already made with that fatal 4 or 5 per cent. solution, and my only hope is that their hearts may be touched by the magic of the Christmas time; and that, like good Christian people, they will pity and forgive!

November 30, 1903. "Scrooge" (259/39).

Liquor Aloes.

While gratefully acknowledging Mr. D. George Davies's suggestion as to solution of aloes, one has to regret that large doses of liq. potassæ would have to accompany his solution. It is found that the addition of carbonate—a drachm or two—considerably increases the action of aloes, and one can imagine cases in which three or more drachms of liq. potassæ would be decidedly dangerous. For instance, one wants to give aloes in solution in cases of impaction and gripes, the latter symptom being consequent upon the impaction. The stomach or intestine (or both) is already in danger of inflammation, its mucous membrane excited, and some veterinarians even fear to use aloes alone, but with so large a quantity of caustic potash the risk of muco-enteritis would be increased. Although not able to adopt Mr. Davies's suggestion, may I point a moral, and say how much the pharmaceutical and medical (including veterinary) professions may benefit by consultations of this kind, where the prescriber states his wants, and the pharmacist can find him a way of satisfying them.

December 1, 1903. "Veterinary Surgeon" (260/16).

In your issue of November 7, under Veterinary Notes, you ask for a formula for solution of aloes. I enclose ours, which is an ingredient of a gripe drink we have put up for the last thirty years. You might give your readers the "tip" that five to ten grains of pure crystallised carbolic acid is an excellent adjunct to a gripe drink.

Chichester, November 26, 1903. Samuel Baker.

⁂ We are obliged for the formula, which will be published in the veterinary section of the 'P.J. Formulary.'—[Ed. *P.J.*]

Pharmaceutical Society of the Orange River Colony.

At a meeting of the registered chemists of this colony held in Bloemfontein to-day, it was decided to form a Pharmaceutical Society for the Orange River Colony, and the following officers were appointed:—President, Mr. W. Flint; Vice-President, Mr. S. S. Hewitt; Council, Messrs. Main, Carter, Kemsley, Taylor; Hon. Secretary, Mr. J. F. Hewitt. Your kind notification of this in the columns of the *Pharmaceutical Journal* will be esteemed.

J. F. Hewitt,
Bloemfontein, November 9, 1903. *Hon. Secretary.*

The Pharmaceutical Journal Formulary.

Like many others of your readers I feel we owe you a recognition of some really useful work anent the above. I see "H. P. W." says he has "not belonged to the Society for years," and thanks you for the insertion of "so many of his formulæ." I do not yet see any of mine, but shall live in hope of inclusion; I have been a subscriber for twenty-seven years. Possibly much will be included as per your announcement in a further issue. Reading between the lines of other correspondents' letters, I discern an appreciation of this turn in the direction of assisting the calling. May I add the conviction that an increase of this same spirit in the Journal would not only further its prospects, but as in the case of "H. P. W.," add very many more subscribers, when chemists see they are getting what they really want.

London, November 27, 1903. Julius Cæsar.

⁂ Our correspondent's recipes will appear in the 'P.J. Formulary' in due course.—[Ed. *P. J.*]

Referring to the letter published in this week's issue at p. 774, under date of November 25, from the Secretary of the Inland Revenue, I may say that this arose from a letter of mine to him, which I sent on October 20 (quoting his letter to you of October 7), with labels stamped "P.J.F.," which I explained as an abbreviation of 'Pharmaceutical Journal Formulary,' and to which I also received the same reply as yours dated November 25. I would suggest, especially as now a number has also to appear on label, that the initials "P.J.F." should appear on the title-page or cover of the book.

Bournemouth, November 28, 1903. W. Bland Botham.

⁂ We understand from Mr. Botham's letter that the initials "P.J.F.', may not be considered sufficient, but that is a point which may well be left for time to decide. Meanwhile, we advise the use of the contraction "P.J. Form."—[Ed. *P. J.*]

Kindly reserve me a copy of your 'Pharmaceutical Journal Formulary,' for which I beg to enclose an order form. At the same time I must not miss this opportunity of personally thanking you for the untiring efforts you must have made to assist us chemists, who a little while ago looked upon this move of the Revenue as a most inflicting hardship, but now it seems as light as day, and by your formulæ made as simple to work upon as A B C. At the same time, I can see that for us registered men it will be a very strong support, and help us to keep a great part of the business, which had previously got into the hands of grocers and petty shopkeepers. I hope this endeavour of yours may show those chemists, who have not in the past given the Society their support, that you would still hold out a helping hand if they would in their turn give you their help and confidence. I am sure it is a very long step that has been taken towards raising our interests, and may we still continue to work as mutually, so that in the future our businesses may make such advancement as they seem to have "disadvanced" in the past few years.

Devizes, December 1, 1903. F. Baker.

A Disclaimer.

In your issue of Saturday last Messrs. Chattaway and Moor, in their paper on "Ash Yield of Crude Drugs, etc.," mention my name in connection with the ash of ipecacuanha. This work should have been credited to my friend and sometime fellow worker, Mr. A. G. C. Paterson.

Liverpool, December 1, 1903. W. H. Lenton.

Correction.

Oxymel Scillæ.—In the paper by Mr. Lucas, p. 778, line 13, of last week's issue, *for* 1·041 *read* 1·410.

BIRTH.

Law.—On November 27, at 31, Hamilton Terrace West, Partick, the wife of William T. Law, chemist, of a daughter.

MARRIAGE.

SILVER WEDDING.

Murison—Minton.—On December 3, 1878, at St. Mary's Church, Islington, John Murison, chemist and druggist, to Maria Minton, second daughter of Edward Minton, Esq., of Wilmington Square, W.C.

PUBLICATION RECEIVED.

Subject List of Works of the Mineral Industries and Allied Sciences in the Library of the Patent Office. Patent Office Library Series, No. 13; Bibliographical, No. 10. Pp. 302. Price 6d. London: The Patent Office, 28, Southampton Buildings, Chancery Lane, W.C. From the Publishers. 1903.

BANKRUPTCY INTELLIGENCE.

Re **Paley and Anderson** (Frank Paley, trading as), Druggists and Drysalters, Albion Mills, Bingley.

Under this failure the liabilities amount to £191 0s. 9d., £189 6s. of which is due to unsecured creditors. The deficiency amounts to £129 14s. 1d. Debtor attributes his failure to insufficient capital and trade.

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Formulary (H. C. S.—259/14).—Your suggestion will probably be acted upon.

Ammonium Oxalate (G. L. A.—103/1).—It is not included in the schedule.

Inland Revenue (F. G. W.—259/26).—We fear that your suggestion is not feasible.

Children's Cough Mixture (J. G.—102/26).—The reference to the 'P.J. Formulary' will protect you.

Baking Powder (W. W.—102/12).—The standard you mention is based upon custom, not upon law.

Liquid Sulphur (W. W.—102/11).—We are unable to say what is intended. Why not obtain a bottle and examine it.

Cod-Liver Oil (J. B. S.—102/18).—It is difficult to say what it consists of. Read the note in last week's *P. J.*, at page 778.

Tattoo Marks (G. D.—102/15).—We regret that we are unable to advise you.

Circular (D. P. R.—102/34).—Provided you give the necessary reference upon the labels, you can issue the circular with safety.

Formulary (E. W. B.—103/2).—You must give the number as well as the contraction "P.J. Form.," if you wish to secure exemption.

Composition Face (W. F.—102/22).—We can only suggest that you try to remould it into shape with the hands, after softening it by heat.

Synopsis (C. E. D. H.—101/29).—Stainer's 'Synopsis of Chemistry,' McDougall's Educational Co., Limited (1s. 6d.), should meet your requirements.

Labels (A. W. G.—259/16).—You need not destroy the labels if you use some of the slip labels (see p. 839) now being offered by Messrs. Ford, Shapland and Co.

Labels (H. B.—103/3).—You must give the names of all the active medicinal ingredients in each case. Nos. 1, 2 and 3 appear to bear a sufficient disclosure.

Sulph. Hypochlor. (E. C. B.—260/8).—You seem to be confusing sulphur hypochlorite with sulphur chloride. There is no such thing as sulphur hypochloride.

Sale of Tinctures (W. B. D.—102/32).—You should address this question to the Secretary, Inland Revenue, Excise Department, Somerset House, London, W.C.

Carbolic Tooth Powder (A. S.—102/31).—The only reason we can see why you should alter your label is that the use of the word "Antiseptic," may now be held to incur liability.

Saline (E. A. T.—102/21).—Ordinary effervescing salines are not dutiable, as you will see by referring to the list of articles which are exempted, published in last week's *P. J.*, at page 817. Your recipes will appear in the 'P.J. Formulary.'

Dentifrice (T. H.—102/16).—The words "preventing decay" on the label render the preparation liable, and the reference to decay on the slips may have a similar effect. If you remove those words you ought to have no trouble, as toilet articles are not dutiable.

Information Wanted.

Mellox Dog Biscuits (A. D.—102/8).—Maker's address.

Post's C.B.Q. Tablets (J. W.—102/20).—What is the approximate composition of these tablets?

Reviving Beer (G. W. E.—102/14).—What substance is used to revive beer that has become flat?

Calendar for the Week (Dec. 6—12, 1903).

Days of M	Days of W	Events of the Week.	Sun Rises.	Sun Sets.
6	S	**Second Sunday in Advent.**	7.50	3.51
7	M	Society of Chemical Industry, Burlington House, at 8 p.m.—"Cyanide Manufacture," by Dr. J. Grossmann.	7.51	3.51
8	Tu	Pharmaceutical Society of Great Britain, at 8 p.m.—Evening Meeting in London.	7.52	3.51
		Bradford Chemists' Association, at 9 p.m.		
		Huddersfield Chemists' Association.		
9	W	Edinburgh Chemists', Assistants', and Apprentices' Association, at 9.15 p.m.	7.53	3.50
		Manchester Pharmaceutical Association.—Discussion on Federation Subjects.		
		Midland Pharmaceutical Association, at 8.30 p.m.—Smoking Concert.		
		Newcastle-on-Tyne Chemists' Association, at 7.45 p.m.—Annual Dinner.		
		Wolverhampton Chemists' Association, at 8.30 p.m.		
10	Th	Brighton Association of Pharmacy, at 9 p.m.	7.54	3.50
		Chemists' Assistants' Association, at 8.30 p.m.		
		Edinburgh District Chemists' Trade Association, at 9 p.m.—Opening Meeting.		
		Hartlepools Chemists' Association.		
		Leeds Chemists' Association, at 8.30 p.m.		
		North Staffordshire Chemists' Association, at 6.30 p.m.		
		West Ham Chemists' Association, at 3 p.m.		
11	F	☾ Last Quarter, 10.53 a.m.	7.56	3.50
		Cambridge Pharmaceutical Association, at 9 p.m.		
12	S	Inter-Pharmacy Football League.—Square *v.* Metros.	7.57	3.49

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Abbott, Aitken, Allen, Anderson, Andsley, Antcliffe, Archer, Aspden, Assinder, Atkins, Atkinson, Attfield, Austen, Babtie, Baker, Barfoot, Barlow, Barnes, Barritt, Bartlett, Barton, Beach, Beckett, Beckwith, Bell, Bellamy, Bemisore, Bennett, Bingham, Bird, Bishop, Blamey, Bloor, Blyth, Bogden, Botham, Bourne, Bowie, Boyd, Brackenbury, Brauer, Briggs, Bristow, Broad, Broadhead, Brown, Buckley, Burgess, Burr, Burrell, Butcher, Cæsar, Campkin, Carpenter, Chantry, Chapman, Churchyard, Clarke, Clegg, Clempson, Coleman, Collen, Colley, Connor, Cook, Cooke, Cooper, Cope, Cornish, Crabtree, Craig, Craske, Crisford, Critchley, Cummings, Cuthbert, Dancy, Davies, Dawson, Deed, Dennis, Dewhirst, Dibble, Dow, Dudderidge, Duke, Duncan, Dyson, Eakin, Eastwood, Eberlin, Edwards, Elliott, Ellis, Epps, Evans, Ewell, Fallding, Fawcett, Featherstone, Fell, Finlay, Fisher, Folkard, Forbes, Foster, Fox, Gamble, Gardner, Garnett, Gay, Gee, Gibson, Gill, Glasscock, Goldfinch, Gower, Greaves, Green, Haley, Hallam, Hampshire, Hankinson, Harmer, Harries, Harrington, Harrison, Hart, Hartley, Henderson, Hersant, Heywood, Hill-Hillier, Hobbs, Hogwood, Hole, Holliday, Holroyd, Horrod, Horton, Howard, Hudson, Hughes, Hugill, Hull, Hunt, Hyde, Innes, Ireland, Jackson, Jeffrey, Jennings, John, Johnson, Jones, Jordan, Joseph, Judge, Kay, Kendall, Kennedy, Key, Knowles, Lambert, Law, Leadbetter, Lennox, Livesly, Lloyd, Lockhead, Lovatt, Lucas, MacDonald, Machin, Mackenzie, Mackinnon, MacLaren, McMurray, Mainprize, Maitland, Marsden, Martin, Mason, Mathews, Maw, Michie, Midwood, Millar, Milns, Mitchell, Moore, Moorhouse, Morse, Moss, Nall, Nettleship, Neville, Newton, Nichols, Nicholson, Noble, Oates, Ord, Orr, Ottry, Palmer, Paust, Peel, Pellew, Pennington, Perrédès, Perry, Pescod, Phillips, Philp, Picken, Pickering, Pidd, Pilling, Pinchen, Plant, Pocock, Poole, Pottage, Powder, Priestley, Prince, Proctor, Purdy, Raley, Ramey, Raper, Rayner, Reekie, Reid, Reynolds, Richards, Riddell, Ridley, Rigden, Roberts, Robins, Rogers, Rossiter, Rowland, Salt, Sampson, Sankey, Sansom, Saunders, Shaw, Shepley, Sherriffs, Shorrock, Sim, Simpson, Skinner, Sleath, Smith, Smithies, Snowden, Southon, Stamp, Stedman, Stephen, Stephens, Stevenson, Stewardson, Stiles, Stirling, Sturton, Swift, Symes, Tanner, Tate, Templeton, Tennant, Thompson, Thomson, Thorp, Thorpe, Tilley, Tinker, Toone, Trebilco, Turner, Turver, Tyrer, Vanes, Vaughan, Walker, Walsh, Walshaw, Walton, Ward, Watkins, Wavell, Webber, Webster, Wellburn, Wells, Welton, Westerman, Westmacott, Wheedon, Whelpton, White, Whiteham, Wild, Wilkes, Will, Williams, Williamson, Wilson, Wolstenholme, Wood, Woodland, Woolley, [illegible], Wright, Wyatt, [illegible].

Telegrams: "PHARMACEUTICAL JOURNAL, LONDON"
ESTABLISHED 1841
The Pharmaceutical Journal
A WEEKLY NEWSPAPER
FOR CHEMISTS AND DRUGGISTS.
The Oldest Organ of the Drug Trade in Great Britain.
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Annual Subscription, 20s. Post Free; Single Copies, 4d. each, by Post, 4½d.

CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, December 10, 1903.

Letters to the Editor have been so numerous this week that it has been found necessary to hold over several communications until next week.

The Newcastle-on-Tyne Chemists' Association held a very successful dinner last evening. Mr. Clague and Alderman Harrison were among the speakers.

Abstracts from the Annual Reports of several limited liability companies appear in this issue. These include Idris, Limited, and Camwal, Limited.

Judgment in the "Tabloid" Case was not given on Monday, as was anticipated. It is possible that the result may not be known before the new year.

For Selling camphorated oil and spirit of nitrous ether deficient in strength, several small provision dealers of Sheffield have been fined £2 and costs each.

Students are Reminded that December 21 is the last date on which replies can be received to the examination papers set in the issue of November 28 at page 783.

For Contravening Section XV. of the Pharmacy Act, 1868, a young woman named Margaret Hudson has been fined £2, with £1 6s. 8d. costs, by the Glasgow Sheriff.

A London Chemist has been prosecuted for selling fish-liver oil as cod-liver oil. The case was adjourned in order that an analysis of the "third sample" might be made.

A Deputation from the Aberdeen Pharmaceutical Association has enlisted the sympathy of the Right Hon. James Bryce, M.P., on behalf of the Pharmacy Acts Amendment Bill.

A Board of Reference, to prescribe official standards for the purpose of the Sale of Food and Drugs Acts, has been recommended by the Royal Commission on Arsenical Poisoning.

The Plea for Pharmaceutical Unity, recently advanced in this Journal by Mr. Charles T. Allen, receives much attention this week. Mr. Allen's views have met with general approval.

Vol. 71. No. 3399. (4th Series, Vol. 17. No. 1746)

A Further Record of the work done by Professor Greenish and Mr. Upsher Smith in the Research Laboratories of the Pharmaceutical Society, in connection with the solubility of some of the chemical substances of the British Pharmacopœia, appears this week.

An Exceptionally Large Gathering attended Tuesday's Evening Meeting of the Pharmaceutical Society, held at 17, Bloomsbury Square. The papers read and discussed concerned chamomiles and the ash of certain drugs; radium demonstrations also formed an attractive part of the programme.

Three Annuitants on the Benevolent Fund of the Pharmaceutical Society were elected at a meeting held on December 8. The names are George G. Hornsby, Elizabeth Ekins, and Thomas F. Tyrer. A special appeal is being made on behalf of the Benevolent Fund, as its finances are by no means in a satisfactory condition.

An Important Communication with regard to medicine stamp duty has been made by the Board of Inland Revenue, in reply to a letter from the Secretary and Registrar of the Pharmaceutical Society. A time-extension of three months—until March 31, 1904—has been granted, during which time existing stocks of labels may be used without interference in cases where such labels would not have been considered as involving liability before the recent legal decisions. This concession will materially assist chemists and druggists.

The Last Drug Sales of the Year were held to-day, and in view of the approaching stock-taking, buyers did not seem disposed to bid. There is no particular feature to record with reference to these auctions. The general market in drugs and chemicals remains exceedingly quiet, and it is not expected that things will liven up until the new year.

ARSENICAL POISONING.

The Royal Commission on Arsenical Poisoning, which, as stated in last week's *Pharmaceutical Journal*, has now issued its final report, was appointed in 1901 in consequence of the serious epidemic which had occurred during the previous year from the consumption of arsenical beer in some parts of the Northern and Midland districts. An interim report was presented in July, 1901, since which date the Commission has held numerous sittings, and examined twenty-nine witnesses. The final report is divided into eight main sections, the most important of which deal with the official control of the purity of food in relation to arsenic, and recommendations for improvement in the administration of the Sale of Food and Drugs Acts. The first part of the report contains a brief narrative of the so-called epidemic of poisoning at Manchester, in 1900, which was found to be due to the drinking of beer prepared from contaminated sugar. The arsenic was introduced, as became known some time ago, into the brewing sugar by a highly arsenical sulphuric acid. At least six thousand persons suffered, and seventy deaths are known to have occurred as a result of the arsenical beer.

The suggestion that the arsenic may have been present in the form of cacodyl derivatives has not been proved to the satisfaction of the Commission, and it is assumed that the arsenic was present simply as arsenious oxide. Variations in the susceptibility to arsenical poisoning had been clearly proved, and the Commission considers that the experiments of Professor Délépine prove the harmful effects to be greatly increased when the general diet of the individual is restricted. Clinical data obtained during the epidemic show that arsenic can only be termed a non-cumulative poison in a comparative sense. In some cases arsenic had been detected in the urine of patients some weeks after the beer had been taken. The report proceeds to discuss the elimination of arsenic from the system through the hair, and rejects the suggestion that the tropical disease known as "beri-beri" might be due to arsenical poisoning. Part III. deals with the tests for arsenic in food. The Commissioners do not attempt to pronounce for or against any particular modifications of the Marsh-Berzelius method which may be preferred by one or another analyst, but they are satisfied that careful analysts can obtain results of sufficient accuracy by that method, although the details of their procedure may differ. Expert evidence showed that the Marsh-Berzelius method will detect arsenic in amounts below one-thousandth of a grain per pound, or one-three-hundredth of a grain per gallon. Destruction of organic matter in beer before employing the test is recommended for uniform adoption. The method of evolving arseniuretted hydrogen by electrolysis, without the use of zinc and acid, has recently been studied and found, when suitable precautions are taken, to give more definite mirrors than the Marsh-Berzelius method. Moreover, in the case of beer no previous destruction of the organic matter is necessary by the electrolytic process. The value of the Reinsch test for rapidly discovering whether a substance is highly contaminated by arsenic is recognised, but the Commissioners do not recommend it for the accurate determination of small quantities.

Substances used in the preparation of food, and liable to contain arsenic, have received full attention. The arsenical contamination of sulphuric acid, hydrochloric acid, glucose, "invert" sugar, glycerin, colouring matters, phosphates, borates, and other chemical substances is reviewed; in most cases the members of the Commission think that when due care and attention is paid by the manufacturers, there should be no difficulty in securing purity. The Gutzeit test for arsenic in glycerin (B.P. 1898) is considered to be uncertain or imperfect, and the Commission has communicated with the General Medical Council on the subject. Among the colouring matters "Armenian Bole," and other substances which contain ferric oxide, have been found very frequently to contain arsenic in large quantity. The methods of preventing the access of arsenic to malt are discussed in some detail, the Commission insisting that steps should be taken to prevent the access of arsenic to malt, rather than to rely on any subsequent process for removing arsenic after it has become deposited on the grain. In regard to several substances, of which vinegar is an example, it is stated that since the outbreak in 1900 satisfactory precautions against arsenic have been adopted by manufacturers. Some food manufacturers, however, do not seem to know how liable glycerin is to contain arsenic, and do not always stipulate for purity when ordering glycerin. A long section is devoted to the precautions which should be taken by manufacturers to exclude arsenic from foods, the conclusions of the Commission being summarised by the statement that manufacturers of food should obtain adequate warranty from the vendor of substances used in its preparation, should take care that their intended use for food purposes is known to the vendor, and should themselves test any ingredients which they may purchase or prepare.

OFFICIAL STANDARDS.

To the pharmacist the most interesting part of the report of the Royal Commission on Arsenical Poisoning is that in which suggestions are made for the improved administration of the Sale of Food and Drugs Acts. Various and cogent objections to the present system are put forward, and include (1) the exacting conditions under which the actual manufacturer can be prosecuted, (2) want of knowledge on the part of local authorities, and the frequent want, on the part of their officers, of expert advice, and (3) the absence of official "Standards." The report further expresses the opinion that the Local Government Board should undertake additional duties of supervision and watchfulness in relation to the administration of the Acts, and that for this purpose the Board should have the advice of a special officer with suitable scientific knowledge, who should be in relation with the Government laboratory, and be able to institute chemical inquiries. Full and authoritative investigation could then be made where new risks to health were suspected, or where new colouring matters, preservatives, or other chemical additions to food were introduced. Such officer, or his assistants, should have the duty not only of collecting information from public analysts and other local officers, and of advising how work under the Sale of Food and Drugs Acts may be conducted on satisfactory lines, but also of making inspections where necessary, and of instituting inquiries as to conditions of manufacture of food in this country. He should also obtain all information possible regarding the manufacture of foodstuffs imported from abroad, and report annually. Under such improved conditions the Local Government Board should be in touch with, and on occasion obtain the co-operation of, other departments of Government which would be able to render assistance in special directions; for instance, the Board of Inland Revenue in the case of articles subject to excise, and the Board of Customs in the case of imported foods. It is recommended that powers should be given to local authorities, under proper precautions against abuse, to prevent the sale of suspected foods pending analysis.

Official standards are thought by the Commission to be absolutely essential if the contamination of food by arsenic is to be controlled by the Sale of Food and Drugs Acts, and for the purpose of fixing such standards the Commission is in agreement with the Committee on Food Products Adulteration and the Committee on Preservatives and Colouring Matters in Food, both of which bodies recommended the establishment of a permanent Board of Reference. "The Local Government Board should be the authority to prescribe standards . . . it is essential that its action should be based upon the advice of a scientific body. . . . the Local Government Board would be in a position to deal with risks of arsenical contamination by (*a*) publication of special reports and warning manufacturers where precautions appeared inadequate, (*b*) prescribing by order, on the authority of the Board of Reference, the quantities of arsenic, ascertained by particular tests, which if exceeded in given classes of food should entail penalty under the Sale of Food and Drugs Acts, (*c*) securing that the check of public analysis is properly and sufficiently applied (*d*) defining, on the authority of the Board of Reference, standards in respect of arsenic in ingredients of food and in substances used in the preparation of food." The Commission thinks that if a retailer is summoned under the Acts and alleges that the article was sold in the condition in which it was received from the manufacturer or wholesaler it should be possible for the latter to be brought before the Court and proceeded against at the same hearing. Pending the establishment of official standards the Commission recommends that penalties should be incurred by the sale of a liquid food, or ingredient entering into the composition of food, if that liquid contain one-hundredth of a grain or more of arsenic in the gallon, and of a solid food if it contain one-hundredth of a grain of arsenic in the pound. The above recommendations are signed by all the Commissioners, viz., Lord Kelvin, F.R.S., Sir W. Hart Dyke, M.P., Dr. T. E. Thorpe, C.B., F.R.S., Principal of the Government Laboratory, Mr. Cosmo Bonsor, Sir William Church, M.D., and Dr. B. A. Whitelegge, C.B., Chief Inspector of Factories and Workshops.

The report is followed by a memorandum from Dr. Thorpe pointing out certain difficulties which might arise in relation to the adoption of official standards of purity. Dr. Thorpe thinks that instead of creating a permanent Board of Reference, consisting of a small number of scientific men, it would be preferable to entrust the consideration of the propriety of fixing standards in the case of particular groups of allied substances to specially constituted committees on which manufacturers and technical experts in the trade concerned were represented. There is, however, a class of questions connected with public health which have no relation to the natural variations in the quality of articles of food, and these, in Dr. Thorpe's opinion, might properly be referred to such a body as is contemplated in the report. These matters arise from the addition of certain substances, which are not as a rule naturally present in food, and are not of the nature of food, *e.g.*, mineral colouring matters, so-called aniline dyes, and antiseptics. Dr. Thorpe thinks, however, that it is open to doubt whether a Board of Reference consisting—as the Departmental Committee appointed in 1899 recommended—of a "chemist, a bacteriologist, a pharmacologist, a physician, a physiologist, and a representative of the Public Health Service," would be competent to deal with such questions as what proportion of husk in ground pepper, or what proportion of starch-glucose in golden syrup, or what proportion of beef-stearin in lard, shall raise a presumption that these articles are not of the nature, substance, and quality demanded by the purchaser.

FOSTERED HOSTILITY.

The article on Pharmaceutical Unity, by Mr. Charles T. Allen in a recent issue (see page 811) is an admirable statement of the one great and present need of British pharmacy. Union, association, affiliation, federation, by whatever name it may be called, can only be of service when there is a hub and centre of the whole body. In the case of pharmacy, there can be no two opinions that the hub and centre clearly indicated is the State-recognised Pharmaceutical Society. As Mr. W. J. U. Woolcock points out in another column (see page 882), it is only through the instrumentality of the younger men that the Society can become truly representative, and it is for that reason all the more unfortunate that young men entering pharmacy should breathe, at the school or college where they are supposed to acquire a scientific knowledge of their calling, an air vitiated by hostility to the Society or jealousy of any of its institutions. Fortunately, such a complaint cannot with justice be made with regard to the majority of the unofficial seminaries, but it is the fact that some teachers permit themselves to turn the influence which they possess over their pupils to the encouragement of the spirit of hostility towards the Pharmaceutical Society. The fact that various individuals or corporations have entrusted money to the Council for research scholarships might be taken as an indication that the wish of the donors was that the Council should make regulations for the research to be executed under its immediate supervision, especially since the Pharmaceutical Society has been at the expense of fitting up special laboratories for the purpose, and of engaging professors admittedly capable of directing the scholars. But it would appear to be a grievance in some quarters that the various research scholarships, given through the Pharmaceutical Society, are not tenable at schools which, in a sense, are in competition with the Society's school. The grievance, if in fact it really exists, is likely to remain until other persons endow scholarships and provide research laboratories at the unofficial schools. But in the meantime, teachers of pharmacy who have any sense of the need for pharmaceutical unity will be well-advised not to make a mischievous use of their influence over their students by stirring up hostility against the Pharmaceutical Society.

HERBERT SPENCER.

It is not easy in 1903 to form an adequate idea of the services rendered to science by the great Englishman whose death is announced this week. Science is too often supposed to be one thing, and "philosophy," in the sense in which the word is generally used, to be something quite different. It says much for Herbert Spencer that he achieved a world-wide reputation as the scientific philosopher of Great Britain. The great scope of the subjects of which he wrote—biology, sociology, psychology, metaphysics, and the rest—is itself sufficient tribute to the wonderful energy of his master-mind. And through all his work, whether he was dealing with the doctrine of evolution, more than fifty years ago, with the synthetic system of philosophy which occupied the best years of his life, or with the problems of post-Darwinian biology in later days, there was always to be seen the strongly-marked individuality which denotes the great thinker. His early training was almost entirely extra-academic, the years during which academic training is generally acquired being devoted in great measure to the study of engineering; moreover, in Herbert Spencer's youth there were small opportunities for acquiring scientific knowledge from others. So, in the true spirit of inquiry, he acquired such information as was available, and thought for himself, with the result that his name will always hold a high place among those who in all ages have contributed to the intellectual improvement of their fellows.

A GENEROUS CONCESSION.

One of the most valuable of the various "concessions" granted by the Board of Inland Revenue with regard to medicine stamp duty has just been announced by the Board in reply to a letter from the Secretary and Registrar of the Pharmaceutical Society. The Board's decision, as conveyed in that letter, runs thus:—"The Board will, in all the circumstances of the case, be ready to extend till March 31, 1904, the period during which they will not interfere with the use of existing stocks of labels which would not have been regarded as involving liability to duty before the recent legal decisions, but are now so regarded." The effect of this letter will be to minimise the inconvenience caused by the changes in practice which were made public a fortnight ago. Chemists and druggists will now have the 'Pharmaceutical Journal Formulary' in their hands before they need order new labels for the preparations of which the formulæ are included in that work. It must be particularly gratifying to members of the Pharmaceutical Society to know that Mr. Bremridge's letter, sent on behalf of the Council, has so rapidly been productive of good effect, and it is equally pleasant to meet with so practical a proof of the consideration which the Commissioners of Inland Revenue are willing to give to the grievances of chemists, when officially voiced. The Board of Inland Revenue, as well as the Council of the Pharmaceutical Society, is to be congratulated on this latest decision.

In another letter, addressed by the Secretary of the Board of Inland Revenue to the Editor, and published in last week's issue of the *Pharmaceutical Journal* (see page 868), the present views of the Board of Inland Revenue with regard to the use of descriptive labels are summarised very clearly. Chemists are again reminded that, in order to avoid liability to stamp duty, a specific reference, such as will enable absolute identification of the formula, must now be given on the label of a recommended medicine prepared according to a formula in the 'Pharmaceutical Journal Formulary,' if more than one recipe appears in that work under the title used. It is also necessary again to call attention to the paragraph in the Board's letter which states that "if to an organ of the body a word or words be added, indicating the operation of the medicine upon the organ of the body, liability is incurred." Mr. William Forster, of Seaham Harbour, has sent us a letter, received from the Board on November 14, in which it was stated that "Antiseptic Throat Pastilles" was not a description which involved liability to duty. That decision has, of course, now been reversed, the word "Antiseptic" being held to indicate the operation of the medicine upon the throat. Those chemists who have received letters similar to that which was sent to Mr. Forster should particularly note this change in the practice of the Board. Another point which must be carefully borne in mind is that the decisions, summarised in the Board's letter of December 3, relate solely to descriptive labels on the medicine. The chemist who advertises his medicines by means of leaflets or handbills, as beneficial to the cure or relief of a malady, brings them within the charge of duty, although the wording of the label may not itself be such as to incur liability. This warning has been uttered again and again in these columns, but it is necessary to be insistent on the point, inasmuch as it is of extreme importance and so liable to be overlooked.

THE BENEVOLENT FUND.

The annual election of annuitants on the Benevolent Fund of the Pharmaceutical Society took place on Tuesday, December 8, and the result of the poll appears at page 688. A slight improvement was noticeable in the number of voting papers received; but, in spite of that, nearly three thousand persons did not trouble to exercise their right of voting. Slackness on the part of the electorate may be due in part to a feeling that, where the individual merits of the candidates are not known at "first hand," no good purpose is served by voting, but partly also, it is to be feared, to a lack of interest in the work of the Fund. At any rate, the abstention of so many is not encouraging to those who administer the Fund. Chemists and druggists, whether members of the Pharmaceutical Society or not, are reminded that the Benevolent Fund is a Fund conducted by chemists for chemists. Its efficiency is limited to the amount of support which it receives, and, as there has lately been a shrinkage in the exchequer, so serious as to cause the good work to be hampered, readers are urged to subscribe ungrudgingly and at once. Remittances should be addressed to Mr. Richard Bremridge, 17, Bloomsbury Square, London, and it may be pointed out that the services of Divisional Secretaries in stimulating local interest in the Fund will be particularly appreciated by the Council.

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"THE SERVICES OF FIVE DOCTORS FOR TEN SHILLINGS."

Thus the latest communication from "Dr." James Kidd, of Fort Wayne, Ind., U.S.A., whose tactics for extracting money from the unsuspecting sick of this country were dealt with in an editorial article in the *Pharmaceutical Journal* of September 26 last. Dr. Kidd's advertisements appear in many magazines and religious publications, usually under the heading "Free Help for the Sick," where he makes the following assertion: "No matter what your disease. No matter how many doctors or patent medicines you have tried, I can cure you." The editor of *Truth* remarks in this week's issue, "This advertisement is, on the face of it, nothing but a pack of lies," and Dr. Kidd's announcement that "I will send you a free treatment," he describes as "the biggest lie of all." That *Truth* is right in thus denouncing Dr. Kidd's statements is fully borne out by the correspondence received from Dr. Kidd, and outlined in this Journal some weeks ago. Since that article appeared, however, our correspondent has received a further communication from Dr. Kidd, in which he offers "the services of five doctors for ten shillings." These "doctors" are said to be "eminent physicians, all of whom have become famous in their special lines." It would be interesting to know what the reputable practitioners of the United States think of this disclosure of the market price of transatlantic medical experts, and also how many free and independent citizens of these islands have been deluded into swallowing the worthless advice of these two-shilling eminents. There seems some ground for arguing that the Government of this country should take some measures to protect the poorer and less discriminating portion of the public from exploitation through the medium of press and post-office.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Colour Effects of Radium.

According to W. Ackroyd, colour changes are frequently brought about by the action of radium rays. These changes have been examined by embedding a radium bromide tube in the substance experimented upon. After a few hours sodium chloride becomes orange or buff coloured, potassium chloride becomes violet, but returns to its original colour very quickly after removal of the exciting cause. Sodium bicarbonate and potassium metabisulphite are changed to amethyst colour after twenty-four hours' exposure.—*Nature*, **69**, 113.

Blood Cells and Phagocytosis.

A. E. Wright and S. R. Douglas have shown by a series of ingenious experiments that the fluids of the blood play an important rôle in connection with phagocytosis, the absorption and destruction of bacteria by certain of the white cells of the blood. By mixing bacteria with the white cells of the blood obtained by centrifuging and adding blood serum (*a*) unheated, *i.e.*, in the natural condition, (*b*) heated to 60°-65° C. for ten to fifteen minutes, it is found that, under the same conditions, phagocytosis is much more active in the presence of the unheated than of the heated serum. The heating appears to destroy some activating substance in the serum, the heated serum behaving as a simple diluent, like physiological salt solution.—*Proc. Roy. Soc.*, **72**, 357, through *Nature*.

Determination of Chlorides, Bromides, and Iodides.

S. Benedict and J. F. Snell describe a method for the determination of chlorides, bromides, and iodides when present together. It includes determinations of (1) total halogens, (2) iodine, and (3) chlorine, the bromine being calculated by difference. The total halogens are first determined by any of the ordinary methods, gravimetric or volumetric. For the determination of the iodine a suitable quantity of the substance (containing not more than 0·5 Gm. of iodine or 0·15 Gm. of chlorine, if decinormal solutions are to be used) is dissolved in water and made up to about 50 C.c. Neutral potassium iodate is added in about twice the quantity necessary to react with all the bromine and iodine believed to be present. The mixed solution is acidified with 4 C.c. or 5 C.c. of acetic acid (30 per cent.) and shaken with 30-40 C.c. of carbon disulphide until all the liberated iodine has been taken up by the latter. The aqueous phase is now separated from the carbon disulphide phase, and the carbon disulphide is thoroughly washed with cold water. The washings and the aqueous portion are reserved for the chlorine determination. The carbon disulphide solution is transferred to another beaker, and is covered with 20 C.c. to 25 C.c. of alcohol (75 per cent.). The iodine is titrated with sodium thiosulphate, no starch indicator being necessary. For the determination of the chlorine the aqueous solution, previously separated, is treated with nitric acid to liberate bromine, and boiled until colourless. Excess of iodate is destroyed by adding a quantity of potassium iodide slightly in excess of the amount necessary to react with it. The solution is again boiled until colourless, more nitric acid being added if necessary, and then cooled and neutralised with sodium carbonate. To secure exact neutralisation the authors suggest that a little calcium carbonate may be added at first and then sodium carbonate solution until a precipitate just forms. The chlorine may then be determined by titration with silver nitrate.—*Journ. Amer. Chem. Soc.*, **25**, 1,138.

Action of Boric Acid on Iodides.

H. Baubigny and P. Rivals find that pure boric acid liberates hydriodic acid from iodide solutions in the cold, while it only decomposes hot, saturated solutions of bromides and chlorides. These facts are applied to the separation of iodine from a mixture of halogen salts as follows:—100 C.c. of the salt solution is heated with 10 Gm. of boric acid and 0·2 to 0·4 Gm. of the paste ("$Mn_2O_4.H_2O$") formed by reducing a solution of a permanganate with alcohol, washing the precipitate, and drying at 30°-40° C. The iodine is collected in a solution of alkali, containing a small quantity of sodium sulphite (to decompose any hypoiodite present), and the iodine estimated as silver iodide.—*Comp. rend.*, **137**, 650, through *Journ. Soc. Chem. Ind.*

Nature of Volatilised Carbon.

Berthelot finds that the carbon volatilised from the incandescent filament in the ordinary electric lamp is in the amorphous condition, and contains neither graphite nor diamond crystals. Similarly, the residual filament consists entirely of amorphous carbon, free from graphite. If, however, a higher temperature be employed, as in the arc light, graphite is formed. It follows that carbon possesses an appreciable vapour tension at a temperature below a white heat, probably about 1,200° C. and 1,500° C. This vapour tension is so slight that it requires several hours to form any condensed carbon even in the almost perfect vacuum of the electric lamp. The temperature at which this vapour tension is evident is, therefore, some 2,000° C. below the boiling point of the element, a much greater interval than has been recorded for any other substance. The author does not consider the volatilisation of carbon to be a simple process, similar to that of other bodies, but to be due to a much more profound physical change, since although carbon, as such, is a simple chemical element, it occurs in many polymeric forms corresponding to the numerous series of combinations which it is capable of forming. Volatilisation is not the result of an immediate formation of normal carbon, but a process of progressive condensation.—*Comp. rend.*, **137**, 589.

New Narcotic Plant.

Vernon Bailey records the occurrence of a toxic narcotic grass, *Stipa vaseyi*, on the Sacramento mountains of California. Horses accompanying his party were observed to graze greedily upon the grass, known locally as "sleeping grass," which had such marked narcotic effect that they were useless for eight or ten days, remaining asleep and refusing both food and drink. The grass is said to be well known by animals indigenous to the district where it grows, who never touch it. A chemical examination of the plant would seem to be desirable.—*Répertoire* [3], **15**, 217.

Slow Combustion of Sulphur.

Having found that carbon undergoes slow combustion in oxygen and air (*P.J.* [4], **16**, 62), H. Moissan has directed his attention to sulphur, and finds that the metalloid also combines slowly with oxygen considerably below its temperature of inflammation. This temperature is found to be 282° C. in oxygen, and 363° C. in air, at normal atmospheric pressure. At 100° C. the slow combustion of sulphur produces sufficient sulphurous acid gas to allow it to be congealed at —186° C., and identified. Even at ordinary temperatures the combination takes place, but more slowly, affording sufficient SO_2 to allow that gas to be identified. In this respect the behaviour of sulphur is precisely analogous to that of carbon, and occurs with all the allotropic forms of the element.—*Comp. rend.*, **137**, 547.

A CONTRIBUTION TO THE PHARMACY OF CHAMOMILE FLOWERS.*

BY HENRY G. GREENISH, F.I.C., F.L.S.
Professor of Pharmaceutics to the Pharmaceutical Society of Great Britain and Director of the Pharmacy Research Laboratory.

In the early part of this year, Mr. W. H. Lenton, who was at that time E. Northway Butt Scholar, commenced some experiments upon chamomile flowers, which, however, he had to discontinue upon his resignation of the scholarship to take up a position in a manufacturing laboratory. These experiments were continued by Mr. A. G. C. Paterson, who in his turn had to relinquish them on the termination of the scholarship.

It thus became impossible for me to see the completion of the experiments on this very interesting drug, and there appeared to be no immediate prospect of their being continued. Results, however, had been arrived at that indicated the lines upon which galenical preparations of chamomile flowers might best be made, and this is my justification for bringing the subject forward.

The flower-heads of *Anthemis nobilis*, the Roman chamomile, have long enjoyed a high reputation as a bitter stomachic tonic, and this reputation they still possess in many parts of Great Britain and the Continent, where they are much used as a domestic remedy. They have, however, practically disappeared from medical practice, and it is a question whether this is not largely due, in the case of chamomile flowers as of other of our indigenous medicinal plants, to the introduction into the Pharmacopœia of preparations that failed to properly represent the drug from which they were made.

The official process, a somewhat remarkable one, is as follows:—A pound of chamomile flowers is boiled with one gallon of water until the volume is reduced to one-half; the liquid strained and pressed from the flowers is evaporated to a soft extract. It is quite evident that even with these quantities, under varying conditions the length of time during which the flowers are boiled must be more or less prolonged and necessarily the anthemic acid more or less destroyed. Much more variable must be the results obtained when the quantity of flowers operated upon is varied.

The volatile oil of the Roman chamomile was examined in 1848 by Gerhardt[1], who discovered angelic acid in it. Pattone, in 1859, investigated the flowers of the field chamomile, *Anthemis arvensis*, and reported the presence of an alkaloid, anthemine, and an acid crystalline bitter principle, anthemic acid. The latter was obtained by treating an aqueous extract with boiling alcohol, evaporating the alcoholic solution to dryness, and redissolving in water. The aqueous solution was then saturated with baryta, filtered, and the excess of baryta precipitated by sulphuric acid. On filtering again, evaporating to dryness, redissolving in ether, and spontaneously evaporating, the acid crystallises. The crystals have a pronounced bitter taste and the characteristic odour (?) of chamomile; they are soluble in alcohol, ether and water, the aqueous solution strongly reddening litmus paper.

In 1871 Camboulises[2] examined Roman chamomile flowers, *Anthemis nobilis*, and succeeded in isolating from them a crystalline bitter principle that possessed the same properties as Pattone's anthemic acid; he assumed, therefore, that these two principles were identical, without, however, affording any definite proof.

Camboulises extracted the bitter principle by exhausting the flowers with ether, evaporating and boiling the residual fatty mass with water. This solution, allowed to stand for twenty-four hours, deposited a small quantity of a yellow body, which responded to the tests for quercitrin. Evaporation of the filtered aqueous liquid left a residue from which ether dissolved the anthemic acid, and this was obtained in crystals by spontaneous evaporation. He was not able to examine it thoroughly, as he obtained it only in very small quantity. Camboulises separated further waxy matter and fatty oil and obtained evidence of the presence of glucose and of some other reducing substance.

In 1884 Naudin[3] exhausted the flowers of *Anthemis nobilis* with petroleum spirit, and obtained two crystalline bodies, which he separated by repeated treatment with absolute alcohol. The one insoluble in cold alcohol crystallised in microscopical needles melting at 63° to 64° C. Its composition was found to be $C_{16}H_{36}$. This body, which Naudin calls anthemene, is therefore a solid hydrocarbon. The second crystalline substance was obtained in glistening silky crystals melting at 188° to 189° C.

In 1889 Ammerman[4] obtained by extraction with petroleum spirit and recrystallisation from alcohol a nearly white bitter crystalline substance melting at 130° C. This body was doubtless a mixture of the two crystalline substances just referred to associated with a trace of the bitter principle. On following the treatment with petroleum spirit by exhaustion with ether, and following Camboulises' method, an acid crystalline substance of glucosidal nature was obtained.

In 1903 Klobb[5] repeated Naudin's experiment and obtained, as Naudin did, two white bodies melting at 63° to 64° C. and 180° to 195° C. respectively. The second of these bodies he endeavoured to purify by recrystallisation, and succeeded in raising the melting point to 207° C., without its becoming constant. He finally obtained the substance pure by converting it into its benzoate and regenerating. It then formed feathery masses or fine needles, melting at 221° to 223° C., and was capable of sublimation without decomposition. Its formula was $C_{28}H_{48}O$, or $C_{29}H_{50}O$, and it appeared to be a phytosterin. Klobb calls it anthesterin.

Summarising these investigations, the following substances have been found in chamomile flowers:—Volatile oil, fixed oil, wax, anthemene, anthesterin, anthemic acid, quercitrin (or a body closely resembling it), glucose, and probably another carbohydrate.

After some preliminary experiments, which may be passed over without entering into detail, 2½ kilogrammes of German-grown chamomile flowers in No. 20 powder were exhausted by percolation with petroleum spirit. The first percolates were very dark green in colour, and yielded on distillation dark oily residues. The later percolates were paler, and during the percolation crystals collected on the nozzle of the percolator. After exhaustion the marc was dried and reserved for exhaustion with ether.

The residue obtained was freed as much as possible from fatty oil by petroleum spirit, and then recrystallised from alcohol. The melting point gradually rose from about 130° C. to 188° C. This doubtless is impure anthesterin. For lack of time it was not further investigated.

The marc was then exhausted by percolation with ether. The percolates were dark green in colour, and possessed an extremely and persistently bitter taste, the marc being almost free from bitterness. From the oily residue left on evaporation of the ether hot water removed the bitter principle. The aqueous solution was evaporated to dryness and again extracted with ether. The ethereal solution left on evaporation a very small residue, which, however, refused to crystallise, although various solvents were tried. This doubtless was anthemic acid, and probably some impurity present prevented it from crystallising. The small quantity obtained precluded the possibility of many experiments being made with it. It was very deliquescent, soluble in water, and possessed an intensely and persistently bitter taste. It reduced Fehling's solution, even before boiling with dilute acid. The aqueous solution, heated on a water-bath, gradually loses its bitterness, the diminution being more rapid in presence of a mineral acid. These characters are in accord with the glucosidal nature that Ammerman assigned to anthemic acid.

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*Communication from the Pharmacy Research Laboratory of the Pharmaceutical Society, read at an Evening Meeting in London, December 8, 1903.

[1] Gildermeister and Hoffmann, 'Die Aetherischen Oele,' 879.

[2] *Journal de Pharm. et de Chimie* [4], **14**, 337.

[3] *Bulletin de la Soc.Chim.*, **41**, 483.

[4] *Proceedings American Pharm. Assoc.*, 1889, 451.

[5] *Bull. des Sciences Pharm.*, **7**, 7.

The marc from ether was exhausted with alcohol, but the alcoholic extract could not be examined from lack of time.

The bitter principle, anthemic acid, appears therefore to be easily soluble in water, and to be readily decomposed by heat in aqueous solution, even in the absence of a mineral acid.

It would appear, therefore, that in the manufacture of any galenical preparation of chamomile flowers water would form a suitable menstruum for the extraction of the bitter principle, but that the application of heat should, as far as possible, be avoided, as destruction of the bitter principle will probably ensue. To test this 120 Gm. of English-grown chamomile flowers in No. 20 powder were moistened with water, packed in a percolator, and percolated with water; the percolate was collected in fractions, the eleventh fraction being still distinctly bitter. Water, therefore, although it readily dissolves anthemic acid, does not readily extract it. This may be due either to the state in which the anthemic acid exists in the drug, or to the presence of the fixed oil, for it had already been found that water extracts the anthemic acid with difficulty from its admixture with fixed oil.

The first fraction of 100 C.c. was divided into two portions, and one half was boiled under a reflux condenser for an hour and a-half. At the end of that time the bitter taste had considerably diminished in intensity. After a further hour and a-half it had almost disappeared. By evaporation it yielded an extract that was dark brown in colour and almost devoid of bitter taste. Hence, any method of preparation which involves long continued boiling with water must be rejected as irrational.

Experiments were then tried with 90, 70, and 45 per cent. alcohol. 90 per cent. alcohol readily extracts the anthemic acid, but the weak percolates, when concentrated, deposited, as was to be expected, a large quantity of fixed oil. 70 per cent. alcohol also extracted the anthemic acid readily, and the weak percolates, when concentrated, deposited a yellowish flocculent substance, apparently not oily, which could be removed by filtration. 45 per cent. alcohol exhausted the drug rather more slowly, but made a satisfactory preparation. As, however, the lower percentage of alcohol involves a higher temperature during concentration, and greater liability of injury to the anthemic acid by hydrolysis, 70 per cent. alcohol was selected as the best menstruum.

The following experiment was then made:—

600 Gm. of English-grown flowers were exhausted by percolation with 70 per cent. alcohol. The first 500 C.c. were reserved and the following, about 1,200 C.c., were concentrated by rapid distillation under a pressure of about 150 Mm. to 300 C.c. This liquid was then cooled, and after twelve hours filtered from the yellowish brown deposit. It was further concentrated by distillation to a syrupy consistence, and then measured about 80 C.c. This was added to the reserve, and the still rinsed out with sufficient 70 per cent. alcohol to bring the volume up to 600 C.c. The liquid extract thus obtained has a dark reddish brown colour, agreeable aroma, and intensely bitter taste.

As the disagreeable nature of the bitterness may militate against the use of a fluid extract, an extract was prepared from one-half of the product by distillation under reduced pressure, the final evaporation being conducted on a water-bath. The yield was 70 Gm. of a firm dark brown extract, of extremely bitter taste.

It still remains to be seen whether these preparations retain their bitterness or whether slow decomposition of the anthemic acid takes place. Should this be the case, neutralisation of the acid present, by magnesia or other alkali, must be resorted to.

THE ASH OF CERTAIN DRUGS.*

BY JOHN C. UMNEY, F.C.S.

The comprehensive paper read by Messrs. Chattaway and Moor at a meeting of the Society of Public Analysts (*P.J.* [4], **17**, 456 and 806) shows that workers are agreed as to the average ash of the drugs met with in pharmacy with but very few exceptions.

The records of different experimenters differ a little according as the results are stated as averages, or as maxima or minima which the ash percentage should not pass; but I think it may be accepted that the ash of fair qualities of the drugs with the exceptions now enumerated, is constant within the narrow limits which are set out in the table of the results of the work of Barclay, myself, and Chattaway and Moor, contained in the paper of the last-named already mentioned (*P.J.* [4], **17**, 808/809).

The most acceptable percentage of the ash of some drugs, however, appears to be still in doubt, and I propose, therefore, to place before you this evening a few observations on the discrepancies which occur in the records of various workers and possibly the reasons for their existence.

Cimicifuga Rhizome.

I have stated that the ash percentage should not exceed ten. This figure is in excess of that recorded by Barclay, Priest, and Chattaway and Moor, the last-named suggesting 8 per cent. as a standard. The average ash of well-brushed samples of rhizome I have found to be 5·5 per cent., but I have examined several samples where the rhizome had a large proportion of rootlets, where the ash was as high as 13·5 per cent., and that of one powder I have recently examined was as high as 17·4 per cent. This shows, therefore, the necessity of the cleansing process of such drugs as these before utilisation for pharmacy, either for the making of galenical preparations or pulverisation, which point was one I called particular attention to in my paper on Standards for Medicines (*P.J.* [4], **15**, 492), applying it then more especially to such roots as valerian, hydrastis, serpentary, etc. After consideration of the whole of the circumstances, I think that the suggestion of an average, or even maximum, ash of not more than 8 per cent. made by Chattaway and Moor should be accepted as not unreasonable.

Colocynth.

Messrs. Chattaway and Moor question the policy of raising the standard for ash in colocynth pulp from 9 to 10 per cent. as suggested by me (*P.J. loc. cit.*). The experiments recorded by Greenish (*P.J.* [4], **12**, 398) appear to show a very wide range of ash for pulp derived from different sources. My experience is that the ash may vary from 7·2 per cent. up to 15·5 per cent. in samples of Turkish colocynth, and that those having these extreme limits of ash may be practically without indication of seeds, as shown by the absence of fixed oil, and also by the microscopical examination of the powder. I cannot help feeling that it would be well that no great importance should be attached to ash assay for the determination of the freedom from seeds or otherwise of a sample of powdered colocynth pulp, and rather that reliance should be placed on the microscopical characters and freedom from fixed oil.

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* Communication to the Pharmaceutical Society of Great Britain, read at an Evening Meeting in London, Tuesday, December 8, 1903.

Conium Leaves.

The discrepancy between the figures that Barclay and myself obtained and those recorded by Messrs. Chattaway and Moor, (which are as follows:—Umney 15, Barclay 15·1, Chattaway and Moor 20) appears to be due to the proportion of leaves and stalks in the sample of drug. In this case the ash of the leaves (13 to 14·5 per cent.) appears to be lower than the ash of the stalks (16 to 18 per cent.); this is almost what one might expect, taking into consideration the structure of the leaves of the plant. It has, however, as one can easily see, an important bearing on the ash of the drug. As a result of many further observations, I would suggest as a maximum of ash, at any rate, not more than 16 per cent.

Cubebs.

The maximum ash that I have suggested for this drug is 7 per cent., and Chattaway and Moor 8 per cent. In the determination of the ash of cubebs there are several important points which should not be overlooked. The cubebs met with in commerce contain very varying proportions of fruits and stalks. The ash of the picked fruit varies between 5·5 and 6·5 per cent., but the ash of the stalks, in my experience, varies between 10 and 11 per cent., and it is upon the freedom, therefore, from stalks that the lowness of the ash largely depends. It is taken for granted that the records of the ash of drugs are usually made upon whole air-dried substances, but in the case of cubebs it should be remembered that the powder dried at 100° C. will lose as much as 20 per cent. in moisture and volatile oil, the proportion of volatile oil being as much as 16 per cent. I would certainly maintain as a maximum ash for cubebs not more than 7 per cent., and this maximum allows for the use of a fair average sample of cubebs as met with in commerce.

Elaterium.

Messrs. Chattaway and Moor state that, in their opinion, my figure of 14 per cent. as a maximum for ash is somewhat high—quoting one obtained by themselves of 3·7, and by Priest of 7·9 per cent. I have had the opportunity of examining many samples, and find them to vary over a very wide range, from 3·2 to 19·1 per cent., but the average is 6·0 per cent. of ash. I am informed by growers of squirting cucumbers that there is no necessity for the ash to exceed 5 per cent., provided the elaterium be properly prepared. I think, therefore, that it might be politic to reduce the ash maximum from 14 per cent. to 10 per cent., or slightly lower.

Jaborandi Leaves.

The determination of the ash of this drug has not been very decisively stated, in consequence of the difficulty of obtaining the leaves of *Pilocarpus jaborandi*—the official variety. The supplies that I have recently examined of the official leaves yield an ash of 5·6 per cent. for the picked leaflets, and 3·8 per cent. for separated stems. The average of a fair sample of a drug in which no special precaution has been taken for the removal of stems I have found to be 5·4 per cent., and I therefore think that as a maximum of ash 7 per cent. might be maintained.

Lobelia.

The ash of lobelia, for which as a maximum I suggested 12 per cent., would be better stated, according to Chattaway and Moor, as 10 per cent. The drug of commerce consists of the whole dried flowering herb, as described in the B.P., 1898, the proportion of stems and the leaves naturally varying. The ash of the leaves ranges between 10 and 12 per cent., but the ash of the stems is approximately 3·5 per cent., and therefore a very considerable difference will arise in the ash of the commercial drug, according to the ratio of leaves and stems present. In 100 parts of the drug by weight the average weight of leaves is, in my experience, 55 parts, but it must not be overlooked that the leaves yield a much higher proportion of extractive and alkaloid than the stems, and that therefore as high a ratio as possible of leaves to stems in the drug is to be commended. I see no objection to the statement of a high ash maximum (say 12), though as an average probably 9 to 10 per cent. would be approximately correct.

Rhubarb.

The enormous variation in the ash of rhubarb is a matter to which attention has been called again and again during the past thirty years. 'Pharmacographia,' second edition, page 500, records an instance where the ash of rhubarb was as high as 43·27. In my experience, the average ash of the rhubarb met with in commerce during the past ten years has varied between 7·5 and 15 per cent., and really it is not a matter of very great importance to fix an ash standard for the drug. It would be of importance to fix a standard as low as possible if the extractive of the rhubarb were reduced by the raising of the chemical salts which give rise to the ash; but, in my experience, this is not by any means constant. I think no limit of ash should be stated, but reliance placed on more definite chemical characters for valuation purposes.

Stramonium Leaves.

Chattaway and Moor suggest the raising of the ash maximum of 15 per cent., as suggested by me, to 20 per cent. The ash of the leaves of stramonium undoubtedly shows a considerable variation, and it is one that appears to be considerably influenced by the time of the collection of the leaves, and also the soil and manuring of it on which the plant is grown. The range of ash that I have obtained is from 13·6 to 20·3 per cent. and therefore it would appear to be almost necessary to fix a maximum of ash as high as 20 per cent., unless it can be shown that in a drug which is high in ash that there is a considerable deficiency in alkaloidal strength. This is a matter that will require extended research.

DETERMINATION OF FERROUS CARBONATE IN PILULA FERRI, B.P.

BY J. H. GOUGH, PH.C., F.C.S.
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The following method for determining the percentage of ferrous carbonate in Pilula Ferri, B.P. (Blaud's Pill), is of such simplicity that it will recommend itself to the busy pharmacist.

The process is a convenient adaptation of the method of titrating the ferrous iron in a phosphoric acid solution of the pill. The bichromate solution is of such strength that each C.c. will raise 0·05 Gm. of ferrous carbonate to the ferric state; or, in other words, when working with 0·5 Gm. of Pil. Ferri, B.P., each C.c. of the bichromate solution used will be equal to 1 per cent. of ferrous carbonate. By the well-known equation—

$$6FeCO_3 + K_2Cr_2O_7 + 9H_3PO_4 = K_2HPO_4 + 2CrPO_4 +$$
$$3Fe_2(PO_4)_2 + 6CO_2 + 13H_2O$$
$$115{\cdot}15FeCO_3 = 48{\cdot}71K_2Cr_2O_7$$

$$\text{Therefore } 1FeCO_3 = \frac{48{\cdot}71}{115{\cdot}15}K_2Cr_2O_7$$

$$\text{Then } 0{\cdot}05FeCO_3 = \frac{48{\cdot}71 \times 0{\cdot}05}{115{\cdot}15} \text{ or } 0{\cdot}002115K_2Cr_2O_7$$

Thus each C.c. of the bichromate solution must be made to contain 0·002115 Gm. of $K_2Cr_2O_7$ or 1 litre should contain 2·115 Gm. of $K_2Cr_2O_7$.

The method of analysis is as follows:—Remove the coating from the pills, cut them into small pieces and "weigh 1 Gm., place in a flask with 5 C.c. of Acid. Phosph. Dil., B.P., and 10 C.c. of distilled water, heat quickly to 150° F., shake until entirely dissolved, and make up to 100 C.c." Of this solution take 50 C.c. and titrate in the usual manner with the bichromate solution prepared as above. The quantity of pil. ferri thus taken is 0·5 Gm., and should contain 20 per cent., or 0·1 Gm., of ferrous carbonate. By using the above described bichromate solution it is readily seen that to convert 0·1 Gm. of $FeCO_3$ to the ferric state 20 C.c. must be used. Following the above instructions each C.c. of the bichromate solution used will be equal to 1 per cent. of ferrous carbonate, calculations are thus entirely avoided.

THE SOLUBILITY OF THE CHEMICAL SUBSTANCES MENTIONED IN THE BRITISH PHARMACOPŒIA.*

BY HENRY G. GREENISH, F.I.C.,
Professor of Pharmaceutics to the Pharmaceutical Society of Great Britain and Director of the Pharmacy Research Laboratory,
and
F. A. UPSHER SMITH,
Demonstrator in the Research Laboratory.

Sections IV. and V.

The present report embodies the concluding portion of the work undertaken, at the request of the General Medical Council, through the Council of the Pharmaceutical Society, on the solubility of the official chemicals.

The substances included in these two sections comprise a few inorganic chemicals not hitherto dealt with (Section IV.), and a number of organic substances of definite composition (Section V.). Alkaloids and alkaloidal salts have, however, been excluded as, in view of the difficulty of ascertaining the purity of these substances, it was considered desirable that their solubilities should, in some cases at least, be determined by experts.

Section IV.

Antimonium Tartaratum.

In colourless transparent crystals becoming slightly effloresced on keeping.

The sample complied with the qualitative and quantitative tests of the Pharmacopœia, 1 Gm. requiring 60·5 C.c. of decinormal solution of iodine.

The taste of this substance is described amongst the official, characters as being "sweet and metallic." The desirability of inserting so subjective a test in the case of a very potent drug such as this is very questionable.

Solubility in Water.—It is to be observed that the Pharmacopœia makes two different statements as to the solubility of this substance. Thus it is described as being "soluble in 17 parts of cold water," and later on the statement is made that "1·66 Gm. should dissolve slowly, but without residue in 25 C.c. of water at 60° F." The latter figures correspond with a solubility of 1 in 15·06. A saturated solution was obtained by the method previously described, and the tartarated antimony present in it was determined by titration with iodine solution.

Time.	Temperature.	Specific Gravity.	Solubility.
Six days	59° F.	1·0393	1 in 17·09
Eighteen days	60° F.	1·0100	1 in 17·0

Result.—Solubility, 1 Gm. in 17·1 C.c. of water at 59° F.

Comparison with Authoritative Statements:—

British Pharmacopœia	1 in 17
United States Pharmacopœia	1 in 17
German Pharmacopœia	1 in 17

Argenti Nitras.

In colourless tabular crystals.

The sample complied with the official qualitative tests. The official method of assay by precipitation as chloride corresponds to a purity of 100 per cent. The assay was conducted with a volumetric solution of sodium chloride, and yielded satisfactory results.

Solubility in Water.

Time.	Temperature.	Solubility.
Seventeen days	60° F.	1 in 0·5226
Eighteen days	60° F.	1 in 0·5226

The amount of silver nitrate in the solution was also determined volumetrically with sodium chloride.

Result.—Solubility, 1 in 0·53 of water at 60° F.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in less than 1
United States Pharmacopœia	1 in 0·6
German Pharmacopœia	1 in 0·6

Ferri Sulphas.

In clear pale bluish-green crystals.

The sample complied with the official qualitative tests. The assay was effected gravimetrically by oxidising with nitric acid, precipitating with ammonia and weighing as ferric oxide. The sample contained iron corresponding to 99·5 per cent. of $FeSO_4, 7\ H_2O$.

Solubility in Water.

Time.	Temperature.	Specific Gravity.	Solubility.
Five days	62° F.	1·2188	1 in 1·494

Result.—Solubility in water 1 in 1·49 at 62° F.

Comparison with Authoritative Statements:—

British Pharmacopœia	1 in less than 2
United States Pharmacopœia	1 in 1·8
German Pharmacopœia	1 in 1·8

Hydrargyri Perchloridum.

In heavy colourless crystalline masses.

The remark made under antimonium tartaratum applies here with even greater force. As the maximum dose of mercuric chloride is $\frac{1}{16}$ grain, the effects of tasting the drug might be serious.

The sample complied with the qualitative tests of the Pharmacopœia.

For the assay preference was given to the reductions by means of hypophosphorous acid.* By this process the sample was found to contain 99·6 per cent. of mercuric chloride.

In assaying the saturated solutions the same method was adopted, except in the case of the ethereal solution, when evaporation to dryness was preferred.

Solubility in Water.

Time.	Temperature.	Specific Gravity.	Solubility.
Eight days	62° F.	1·0477	1 in 17·13
Twenty days	60° F.	1·0472	1 in 17·9

Result.—Solubility, 1 in 17·9, at 60° F.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 16
United States Pharmacopœia	1 in 16
German Pharmacopœia	1 in 16

Solubility in 90 per cent. Alcohol.

Time.	Temperature.	Specific Gravity.	Solubility.
Eight days	62° F.	1·0366	1 in 3·54
Twenty-six days	60° F.	1·0650	1 in 3·64

Result.—Solubility in 90 per cent. alcohol, 1 in 3·64 at 60° F.

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* Communication from the Research Laboratory of the Pharmaceutical Society of Great Britain, continued from *P.J.* [4] **14**, 552.

* Bennett, *Pharmaceutical Journal*, **65**, 575.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 3
German Pharmacopœia	1 in 3

The alcohol of the German Pharmacopœia contains between 85·6 and 87·2 per cent. by weight of ethyl hydrate.

Solubility in Ether B.P. (Specific gravity, 0·735.)

Time.	Temperature.	Solubility (by Evaporation).
Twelve days	58·5° F.	1 in 4·35

Result.—Solubility in (ether, B.P.) 1 in 4·35 at 58·5° F.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 4
United States Pharmacopœia	1 in 4*
German Pharmacopœia	1 in 12 to 14*

Section V.

Comprising various organic chemical substances of definite composition.

In dealing with these substances, in view of the difficulty of assaying saturated solutions of them, it was considered desirable to adopt a different method of determining their solubility. For this purpose published statements of the solubility were first consulted, and then a series of experiments were made by dissolving a definite quantity of the substance in varying quantities of the solvent by the aid of a gentle heat. The solutions were then cooled to 60° F., and kept at or near that temperature for twenty-four hours. If after the lapse of that time, no separation had taken place, a small crystal of the substance was introduced so as to form a nucleus for crystallisation, and the solution was kept under observation at 60° F. for a further length of time varying from twenty-four to seventy-two hours, according to circumstances. In this manner approximate figures were obtained, upon which a second series with smaller variation in the quantity of solvent used could be based. In this manner the quantity of solvent necessary to retain a definite quantity of the substance in solution could be ultimately reduced to very narrow limits. This method proved very useful, but it is not of such general applicability as the one previously used and described.

Acetanilide.

In colourless, odourless, glistening lamellar crystals, complying with the qualitative tests of the British Pharmacopœia.

Solubility in Water.

Completely soluble	1 in 210 at 62° F.
Incompletely soluble	1 in 205

Result.—Solubility, 1 in 210 at 62° F.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 200
United States Pharmacopœia	1 in 194
German Pharmacopæia	1 in 230

Solubility in 90 *per cent. Alcohol.*

Completely soluble	1 in 4·2
Incompletely soluble	1 in 4·1

Result.—Solubility in 90 per cent. Alcohol, 1 in 4·2.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 4
United States Pharmacopœia	1 in 5 (of 94 per cent. alcohol).
German Pharmacopœia	1 in 3·5

Acidum Carbolicum.

In small, colourless, deliquescent crystals, having the characteristic odour of carbolic acid, and complying with the official qualitative tests.

Solubility in Water.

Completely soluble	1 in 14
Incompletely soluble	1 in 13

Result.—Solubility in water, 1 in 14.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 12
United States Pharmacopœia	1 in about 15
German Pharmacopœia	1 in 15

Solubility in Glycerin.

Completely soluble	1 in 0·33
Incompletely soluble	1 in 0·32

Result.—Solubility in glycerin, 1 in 0·33.

Comparison with Authoritative Statements.

British Pharmacopœia	Freely soluble
United States Pharmacopœia	Very soluble

Solubility in Olive Oil.

Completely soluble	1 in 2·0
Incompletely soluble	1 in 1·9

Result.—Solubility in olive oil, 1 in 2·0.

Comparison with Authoritative Statements.

British Pharmacopœia	Freely soluble in fixed oils
United States Pharmacopœia	Very soluble in fixed oils

(*To be concluded.*)

PERSONAL VIEWS ON CURRENT TOPICS.

Impressions of the "Tabloid" Case.

BY AN ORDINARY OBSERVER.

The Witnesses.

For three and a-half days an almost continuous procession of practitioners of the arts of medicine and pharmacy, and of the science of proprietary medicine selling; the King's physician and the provincial homœopathist, the ex-editor of the 'British Pharmacopœia,' and the store chemist, the famous and the obscure, jostling one another as they approach or leave the witness-box in Chancery Court II., and contributing each his share of "expert evidence" to a case in which the interests of the public are involved no less than the great principle of a trained individualism in prescribing and dispensing. Some of the witnesses, as they wait their turn, are obviously ill at ease, wishing that they had not come. They feel quite clear as to the truth of the statements which they know they will be asked to make, but they are not sure, some of them, whether they have been well advised in consenting to appear. Others are full of confidence, anxious to be cross-examined, keen partisans of their side. A third class is only wishful to enter the box, stay there as short a time as may be, and return at once to the interrupted work of the day. A bored expression of stolid indifference is only relieved by the utterance of their names by one of the gentlemen of the wig and gown. But to the student of pharmaceutical politics the whole case is full of interest; there is nothing in the evidence which can properly be described as tedious; much, indeed, is quite the reverse.

In the Box.

Most of the pharmaceutical witnesses were in the box for a very short time, and escaped severe cross-examination. Mr. Allen, indeed, was not given the opportunity of crossing swords with counsel at all. In most cases, too, the pharmacists made excellent witnesses, answering shortly and simply the questions put to them. Dr. Attfield was, indeed, disposed to be somewhat communicative, but it was reserved for Mr. Kilby Pears to stir up the cross-examining counsel to something like wrath by volunteering unexpected information. Mr. Pears' cross-examination, indeed, furnished the most stirring scenes of the week. Another witness whose evidence was by no means to Mr. Neville's liking was Mr. R. H. Jones, possibly because Mr. Jones was one of the few witnesses who succeeded in raising a laugh at counsel's expense. When Mr. Jones was questioned with regard to a suggestion on the subject of "substitution," he replied that suggestions of that sort were the privilege of counsel.

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*The ether of the United States Pharmacopœia has a specific gravity of 0·725 to 0·728; that of the German Pharmacopœia, 0·720.

The Council.

The Council of the Pharmaceutical Society furnished six witnesses to the action, four for the plaintiff and two for the defendants. It was evident, however, in the case of two councillors that Mr. Neville had been asked not to introduce their connection with the Executive body, presumably because the evidence which the witnesses were able to give was the result of experience gained in the pharmacy rather than in the Council-room. All of the eight London members of Council were in Court at one time or another, although Messrs. Cooper, Hills, and Robinson did not remain for long. Mr Glyn-Jones, however, followed the case from beginning to end with keen interest; while the note-book and pencil of "Xrayser" were much "in evidence" during the greater part of the action.

The Counsel.

Mr. Wellcome's solicitors had "retained" Mr. Fletcher Moulton, whose exertions were not taxed for more than a few minutes in all, owing to the more insistent claims of a "water" arbitration. Mr. Neville, K.C., bore the brunt of the work—and that remarkably well—being assisted by Mr. Levett, K.C., and prompted also by two other barristers, both of whom are well known in legal circles as authors of books on patents or trademarks. On the other side there was no such imposing array of celebrities, only two barristers, both comparatively young men, being engaged. Mr. Walter performed his part extremely well, but could not succeed in shaking substantially the evidence of the doctors and chemists. Here and there, however, he was able to extract an admission that "tabloid" conveyed some idea of shape. Mr. Neville was very effective in cross-examination, especially in the case of Mr. Bransby, who was by no means a strong witness. The first witness for the plaintiff was Mr. Wellcome himself. Mr. Walter could not shake that gentleman, who was very consistent throughout, in spite of a too-evident determination to advertise the superiority of his firm's products.Not once, but several times, the pharmacists in Court enjoyed a good laugh when Mr. Walter's skilful questions failed to elicit from Mr. Wellcome anything but the off-repeated phrase "our products." But Mr. Walter distinctly scored when he discovered that one of the solicitor's clerks, who gave evidence of purchase, had purposely stumbled over the word "sagrada." Mr. Neville's closing speech was, to the non-legal listener, somewhat ponderous, but was very exhaustive and full of clever argument. His opponent had a lighter touch and more attractive style, but was rather disappointing in his concluding speech.

The Judge.

Mr. Justice Byrne's pensive comments were always valuable. It was interesting to find that he himself had only learnt a year ago that the word "tabloid" was private property. One could see that every essential point was grasped by the judge, who seemed to take a note of everything which was in any degree important. But his Lordship became very restive when it seemed that the procession of witnesses for the plaintiff would continue indefinitely. Mr. Justice Byrne seemed, however, to take a great interest in many of the witnesses, and the impartial questions which he himself put always had the effect of clearing away doubts or difficulties. His Lordship at first suggested Monday, December 7, as a probable date for his decision, but seems to have found himself unable to give judgment then, to the disappointment of the pharmacists who attended the Court on that day.

The Society as the True Representative of Registered Chemists.

BY W. J. UGLOW WOOLCOCK.

WANTED.—Man with a Scheme to convince all Registered Chemists of the desirability of becoming Members of the Pharmaceutical Society.—Apply to C. T. Allen, etc.

In a recent paper Mr. C. T. Allen has put forth a special plea for the better support of the Pharmaceutical Society by registered chemists. Every now and then, at spasmodic intervals, some prophet arises to preach the gospel of salvation through membership of the Society. There seems, however, to be a special reason why more heed should be paid to what Mr. Allen has to say. He is a young man, and appeals to young men, and it is only through the instrumentality of these young men that the Society can be made truly representative. It is not worth while at this stage to trouble so much about those of mature age who remain outside; but the men who are qualifying now or have qualified during the ten years just past are the men who will have to fill the positions at present held by the best-intentioned men who have ever governed official pharmacy.

Why Join?

Why does not each man join the Society as soon as he is eligible? Mr. Allen accounts truly for a large percentage when he says, "Failures at examinations constitute a fruitful cause of desertion from our ranks." There is a tremendous lot of grumbling to be heard, but unfortunately the right people are not always made the object of that grumbling. The man who cannot see what benefit he would derive from his guinea subscription is quite a common type, and, to my mind, is the meanest of mean creatures, quietly sitting still while a Society of which he is not a member guards his privileges for him. This deadhead counts heavily against us when we are taunted with being unrepresentative of the craft. The Society is far from perfect, and there have been many things done and many more left undone which are greatly to be deplored; but the one great thing for the younger generation to do is immediately to join its ranks, exercise the franchise, and try to get some fresh young blood on the Council.

Why Vote?

Why do so few vote at our Council elections? Because the new candidates do not seem likely to be any better than the old, and might be worse. Anything would be preferable to this state of indifference as to who represents our interests; even the engaging exhibition of a fierce struggle between two rival factions, united in a common aim—the well-being of our craft—but with widely dissimilar views as to the best methods of attaining that end. The shortcomings of the Council, if such there be, could be rectified and the mouths of the grumblers stopped, because their own representatives would be on the Council. This leads one to ponder whether those members who desire the support of the whole craft have considered what an alteration in policy would come about in consequence of the views of the men who are now outside our ranks, but would then be inside them. At present two-thirds of the qualified men are, presumably, not in sympathy with the present policy. What must happen if they join our ranks? Undoubtedly they will change our present policy, and I think somewhat on the lines which Mr. Allen suggests when he writes of a "powerful union" and comments on the advantage of trade unionism to the working man. After all, would it not be better to be a body of men, skilled in our profession, but bound together in a business-like manner? We must meet competition, in whatever form competition comes.

Should it be in the better scientific education of our competitors—see that your education is brought up to their standard; if it is that they are better business men than yourself, then business methods must be your first consideration.

Dispensing Chemists.

It is not sufficient to "let the Pharmaceutical Society be representative of dispensing chemists." It must be representative of all chemists. Owing to various circumstances—better training in dispensing during studentship, cheapness of labour, smallness of practice—doctors now have their own dispensaries to a much larger extent than formerly, and the majority of chemists in business have to rely on other branches of our work beside dispensing for support. This fact is too often lost sight of by London chemists, and their country brethren are not considered as they might be. The Pharmaceutical Society, therefore, if it is to be really useful, must be representative of this great class as well as of dispensing chemists.

The Way In.

What, then, is the best way to get all into the fold? I think the best plan is to get all outsiders to join the local association which is nearest them (there is a great activity manifested just at present in this direction), and having secured their co-operation in local affairs it will not be difficult to awaken an interest in more general pharmaceutical politics. Next in importance to this method I would urge that all young men studying for the Minor in London should have laid before them the importance of joining the Society at the earliest moment possible, if only in the interest of self-preservation. Then, and not till then, can we approach the House of Commons as a Society truly representing the chemists of the United Kingdom.

THE STUDENTS' COLUMNS.

PRACTICAL CHEMISTRY—(I).

Preliminary Tests.

When an experimenter has a substance to analyse, almost the first test applied is the action of heat, which is often of extreme importance in determining the composition of the substance. All the experiments detailed below may be conducted with the aid of a few glass test-tubes and a spirit lamp or Bunsen burner, while the substance used may be found in every pharmacy. The work is therefore within the reach of every apprentice, whose time will be well occupied in carefully working through the following scheme. There is no better training in the habit of observation and accurate deduction than such a course, and the value in analysing mixtures is very great, for it is often possible to detect every constituent by what are usually termed the "preliminary tests."

A few words about recording the experiments in notebooks: Describe in intelligible English every reaction performed, the visible changes which occur, and the appearance of the product or products.

(1) Heat a little calcium sulphate (plaster of Paris) in a test-tube; no apparent change takes place, no gas is given off. (This is an important negative test in an analysis, as it shows that a large number of the substances mentioned below are probably absent.)

(2) Heat some zinc oxide; notice in this case the gradual change, while it is being heated, to a lemon yellow colour, which gradually changes again to white as the substance cools.

(3) Heat some bismuth oxycarbonate; note the change of colour while hot and cold. Make a note if it return to its original colour when cold, as zinc oxide does, or not.

(4) Try the same with a little litharge (lead oxide).

(5) Heat a little tin oxide (putty powder).

(6) Heat some ferrous sulphate; note gradual disappearance of the green colour as it loses water of crystallisation, which condenses on the side of the tube, then the appearance of a greyish-white colour. Heat further and note that it turns to a reddish colour and a gas comes off which has a distinctive odour. Note that the gas has an action on litmus paper. Is it acid or alkaline? Note the smell of the gas, and compare it with that formed by burning a little sulphur on the end of a knife. Note the final appearance of the product. (Keep the tube inverted in this experiment to prevent the water condensed on the upper part of the tube running down on to the heated portion and cracking the tube.)

(7) Heat a little ammonium chloride in a tube; note that it sublimes completely, and condenses on the upper end of the test-tube.

(8) Heat a little calomel; note what happens.

(9) Add a little sodium bicarbonate to each of the last two substances mentioned and again heat; note that in the former case ammonia is given off and can be easily recognised by smell, while in the second case metallic mercury is formed as a mirror on the side of the tube, from which globules of the metal may be obtained by scratching with a glass rod or a pen-holder.

(10) Heat a little arsenious acid (white arsenic). Note odour. What does it remind you of? Do not inhale too much, as it is poisonous.

(11) Heat a little potassium citrate and note that irritating fumes are given off. Test the residue with moist litmus. Is it acid or alkaline?

(12) Heat a little quinine sulphate; describe carefully the odour of the vapour, its colour, and the residue, if any.

(13) Heat some potassium chlorate till it appears to boil, then test the gas coming off with a glowing splinter of wood.

(14) Heat some sodium thiosulphate (ordinary "hypo."). Note smell of gas, and that it turns a drop of yellow potassium chromate solution, held on a glass rod in the tube, green.

(15) Heat a little bismuth subnitrate and note the odour and colour of the gas.

(16) Try the effect of heat on lead iodide and note the products.

It will be noted that in experiment No. (1) the substance undergoes no visible change; in (2) to (6) the substance changes in colour; in (7), (8) and (10) the substance sublimes; in (11) to (12) blackening occurs; in (13) to (16) gases are driven off by the action of heat. While in (13) and (14) the gas evolved is colourless, in (15) and (16) it is coloured. The student will have gathered that from every one of the experiments described which are chosen in order to present as many types as possible to the learner, a deduction may be made. It requires much care and experience before such deductions can be absolutely relied on; but the student will find that these preliminary observations do in most instances furnish a valuable clue to the nature of the substance under examination.

The student is advised to make further experiments with a view of ascertaining the effect of heat upon other salts of the various acids or bases which enter into the composition of the substances mentioned in the above list. By this means he should be able to check his first deductions, and to obtain a general idea as to which of the reactions are characteristic of a certain metal or class of metals. He may also, if his observation and deductive power be keen, be able to note, in a few instances, certain phenomena which are due to the special peculiarities of one particular substance, and not characteristic of any other.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

EVENING MEETING IN LONDON.

TUESDAY, December 8, 1903, at 17, Bloomsbury Square, London, the President, Mr. S. R. Atkins, in the chair. There was an unusually large attendance, the Lecture Theatre being packed to its utmost capacity. The President said he had very great pleasure in asking the Dean of the School, Professor Greenish, to read a communication from the Research Laboratory, entitled :—

A Contribution to the Pharmacy of Chamomile Flowers.

which is printed at page 878.

The President said it would be the pleasure of those present, he felt sure, to convey to Professor Greenish their best thanks for his very suggestive paper. He thought it was an extremely valuable paper, though Professor Greenish had told them in a very modest way that it was not complete, and therefore the results were tentative; but what he felt towards Professor Greenish's work was that it was carefully done. It exhibited accuracy, and he thought that from the point to which the work had been carried it might safely be taken up by other workers with the assurance that the work was not slipshod, but carefully done. The Professor commenced by stating that it was an old story —chamomile flowers. Well, he (the President) could affirm that. He remembered that his grandmother, who was then an ancient lady, used to make an infusion for her grandchildren, much to their confusion, apart from the process which was extremely carefully carried out, for she believed in chamomile tea as a remedy for every ailment under the sun. There were many curious things in the world, and one was that on the present occasion they were to have brought before them the ancient and modern—not hymns and tunes—but they had had an ancient remedy brought to their notice, and they would shortly have an exhibition of the latest discovery in the scientific world—radium.

There was no discussion on the paper.

Mr. Ernest Umney, in the unavoidable absence of his brother, then read a paper (see p. 879) on

The Ash of Certain Drugs,

by Mr. J. C. Umney, F.C.S.

The President expressed the cordial thanks of the meeting to Mr. J. C. Umney for his valuable paper; also to Mr. Ernest Umney for reading the paper. He was glad to have that opportunity of congratulating Mr. Ernest Umney upon his improved state of health. He thought Mr. Umney had done a very wise thing in taking a journey round the world, for not only was his health restored, but he had brought back a vast accumulation of knowledge, which could only be obtained by travel. The paper by Mr. J. C. Umney had involved a very large amount of patient and abstracting work, dealing with a subject of great importance. Mr. Umney had already made his mark amongst the various pharmaceutical workers, and had done very substantial work in pharmacy. He was sure all present would wish him, on their behalf, to thank Mr. Umney for his latest contribution to the stock of pharmaceutical knowledge.

Mr. E. M. Holmes said that perhaps the subject of the ash of drugs had received more attention than it deserved, since the ash test was of much greater importance in some cases than in others. But any analytical results obtained by one who had such experience and such excellent opportunities as Mr. Umney could not fail to be valuable for reference. In the case of cimicifuga, Mr. Umney had directed attention incidentally to a very important point often overlooked by retail chemists, and that was the presence of adhering soil to roots and rhizomes. This varied exceedingly, and if the retail chemist was not prepared to pay a higher price for having roots properly cleaned and garbled by the wholesale dealer—to whom such garbling means loss of money—he should be very careful to see that all foreign matter was removed before using them for B.P. preparations. But cimicifuga was generally bought whole, and he could not see the use of estimating the percentage of ash in the whole drug. With regard to colocynth, the object of the B.P. directions was obviously to exclude the seeds. That work says the pulp should yield at least 9 per cent. Pulp containing up to 13·43 per cent.—the highest figure given by Greenish—would therefore not be excluded. With respect to elaterium, neither Chattaway nor Moor stated whether English or Maltese elaterium were examined, and the percentage of ash could not matter much, provided the amount of elaterin (20 to 25 per cent.) obtainable from the drug was present. Official conium leaves were ordered to be fresh, together with the young branches, and the ash percentage was not needed in that case, but rather botanical skill to determine the genuineness of the leaves. With regard to cubebs there was no indication in Mr. Chattaway's paper, nor in Mr. Umney's remarks, as to the genuineness of the cubebs used. These varied much in quality and in kind, and until it was known whether the ash of false cubebs differed from that of the genuine, a knowledge of the percentage of ash could be of little use. In the case of lobelia, unless in powder, the percentage of ash could not be of much importance; but he agreed with Mr. Umney that a high percentage was better than a low one. Drugs like lobelia, chiretta, and grindelia, were very apt to lose their leaves when kept in a parcel, so that it was important, in using the drug for tincture, that the proportion of leaves indicated by Mr. Umney should be used together with the stalks. With regard to rhubarb, there were three varieties in the market that probably differ considerably in the amount of raphides present—viz., the Chinese, the English obtained from *Rheum officinale*, and the English obtained from *Rheum rhaponticum*, and doubtless the brighter yellow powder of *R. rhaponticum* was preferred by those who judged by colour alone. But they required to know more of the average ash of these three varieties, and of their relative medicinal efficiency, before the percentage of ash present would be of much value as an indication of quality. The same might be said of jaborandi leaves.

Mr. C. G. Moor was pleased to find that Mr. Umney's figures did not differ greatly from those recorded by himself. Mr. Umney had mentioned that all his ashes were made from air-dried drugs; he (Mr. Moor) thought it was better to take samples such as were obtained under the ordinary conditions of commerce. With regard to rhubarb, he had been surprised to find as much as 25 per cent. of ash, while other samples fell below 7 or 8 per cent.; therefore it would not be wise to fix too low a limit. In regard to the ash limit for certain leaves, it was sometimes impossible to obtain leaves free from stalks, and a reasonable variation should be allowed on that account.

The President said they were honoured that night with the presence of a colonial pharmacist—Mr. Rich, of Brisbane—and he might, perhaps, like to say a few words on the subject.

Mr. Rich said, in dealing with the various ash tests for purity, it must be remembered that the British Pharmacopœia was not intended for Great Britain alone, and therefore its scope must be sufficiently wide to be applicable in other parts of the world, where different conditions might prevail. He quite agreed with and could endorse Professor Greenish's dictum that it was better to teach a pharmacist to recognise what a thing is rather than what it is not. His experience, extending over the last ten years, in the colonies was that the labours of Mr. J. C. Umney and others had been of extreme value, and the institution of an ash test for various drugs had certainly been one which had enabled the average pharmacist to at least determine the value of materials which he received in the ordinary course of trade. It was useless to establish elaborate tests which required a chemical laboratory to carry them out, and it was far better to devise tests which could be applied by the chemist and druggist in business. He was glad to have the opportunity of congratulating Mr. Umney and Mr. Moor and others upon their work. The average ash yield of drugs was a test upon which great reliance could be placed. If the British Pharmacopœia established a standard that the ash yield should not exceed certain limits, of course, the pharmacist might sometimes get a sample which would not agree with the test, because it was a particularly good sample; but if the ash yield varied considerably, it was very probable that the sample was false. Of course, it would be better if pharmacists could be induced to examine their drugs with the microscope and make use of the book which Professor Greenish had introduced for the purpose.

Mr. Peter MacEwan said there was one point in regard to the subject of ash yields of drugs which he thought should not be lost sight of. The late Mr. John Barclay paid a great deal of attention to the subject, and he told him some time before his death that he meant to carry out a series of experiments on the ash yield of commercial powdered drugs. It was well known that drugs were powdered ready for use, and in the process of powdering there was a certain percentage of rejection, and if the British Pharmacopœia percentages were determined upon the whole drug, that would be a false standard for the retail pharmacist. In regard to rhubarb, samples of genuine rhubarb varied considerably, and there would have to be a good deal more investigation before an ash standard was adopted for the British Pharmacopœia. He thought very good service had been done to pharmacy by Mr. Umney's contributions on the subject.

Professor Greenish said he had had some little experience in the determination of the ash of various drugs, and, looking at the subject from a practical point of view, he took it that the object of the determination of ash in the case of a number of drugs was that of introducing an ash limit in the British Pharmacopœia. He thought that entire drugs which could be used by the pharmacist in the entire state, and those drugs which ought to be reduced to powder by the pharmacist were much better judged by their macroscopic characters than by any ash yield. Pharmacists should remember, when introducing standards of any kind, that they were establishing a standard by which they might subsequently be judged, and that they were probably making a whip for their own backs; they should therefore take the greatest precautions to ensure that standard being a correct one. It was not only necessary that a very wide range of different qualities should be examined, but also samples of drugs which might be substituted for the one under examination, or be ground up with it. He thought it was very essential that, when an ash determination was published, there should be appended a statement as to the quality and source of the drug, which would enable an expert to judge of the drug which had been examined. That necessity became most apparent if they looked up the literature of the subject, because only in a few cases had that been done, and he often wondered whether the drugs examined had first been submitted to an expert pharmacognosist such as Mr. Holmes. His experience in the Research Laboratory tended to show that they could not depend upon the ash to distinguish the different qualities and varieties of any particular drug. This could be effected by the microscope. The microscope would not do everything, but it would enable the pharmacist to distinguish one variety from another, and it seemed to him to be most important that, before ascertaining the ash yield of a drug, they should first be sure of its identity. He was afraid there was a great deal more work to be done before they were in a position to fix definite ash figures for many of the official drugs. He differed from those workers who seemed to think they were nearing the end—they were only just at the beginning of their task. He believed that the ash had but little value for entire drugs; in the case of powdered drugs, it was more valuable, but, still, even then, chiefly as an indication of admixture of earthy matter or sand, in which case the determination of the ash insoluble in hydrochloric acid was of the most value, as indicating the use of sandy or improperly cleaned drugs. Before any standard could be fixed it was most desirable that any worker should take a single drug and determine the ash in a large variety of qualities and in the probable substitutes, which should have been submitted to an expert pharmacognosist, and should be properly described. Each drug must then be judged upon its own merits, whether it be desirable to introduce an ash standard at all, or a maximum and minimum ash yield, or only a maximum for ash insoluble in hydrochloric acid. He had little doubt that the ash yield of many drugs would prove, when thus inquired into, to be of far less value than others were disposed to believe.

Mr. Ernest Umney, in reply, thanked the President for his kindly remarks, and expressed his regret that his brother had not been able to be present to read his paper, and to answer the points raised. With regard to Professor Greenish's remarks, there was no doubt that the microscope should be used in conjunction with the ash tests. His brother's paper was only written to show certain discrepancies which had occurred in Messrs. Chattaway and Moor's paper, and he thought those had now been cleared up.

Radium Experiments.

At the conclusion of the discussion on the papers Mr. H. W. Everson, from the firm of Messrs. Hopkin and Williams, Limited, gave a brief *résumé* of the history of radium researches since Becquerel's work in 1896, and proceeded to demonstrate some of the properties of that body. He showed, by the first experiment, how radium caused the air to become a good conductor of electricity. A small case containing 5 milligrammes of the substance was placed between and slightly below the terminals of an induction coil. The current was then turned on, and the presence of the radium, if it did not entirely prevent the spark, influenced it to a very considerable extent. In experiment number two the small case containing the radium was placed behind a barium platinocyanide screen, when a fluorescent spot appeared on the screen. A piece of millboard coated with zinc sulphide was substituted for the barium platino-cyanide screen, and the same result was obtained. When the little radium case was wrapped in cotton-wool, or enclosed in sheet lead, and held behind the millboard or the screen, the fluorescent spot was still distinctly visible. The best results, however, were obtained with pieces of artificial willemite (zinc silicate), manufactured in the laboratories of Messrs. Hopkin and Williams, Limited. When the radium was placed in close proximity to these little blocks they at once assumed a luminous appearance. A glowing tube containing a mixture of radium chloride (1 part) and barium chloride (99 parts) was also shown.

Mr. Everson, in answer to a question, stated that the market price of radium was of an artificial character, and due to the operations of mine-owners; it was possible that a fresh deposit might be found, when the price would soon become less fabulous.

THE EXHIBITION.

The exhibits shown in the Examination Hall were a source of great interest.

Fractional Collection of Percolates.

Professor Greenish exhibited a device for the automatic collection of a percolate for experimental purposes in fractions of any required size. The percolate is received in U tubes holding a little over the required amount. The first is fitted with two long glass tubes, one in each leg, depressed to the level of the volume to be collected. One of these tubes has six T branches attached to it a little above the U tube; the other is plain. The percolate is delivered through the lowest branch, fills the U tube, and, when it reaches the volume required, seals the ends of both the inner tubes. Further pressure from the percolator causes a simultaneous rise in both these inner tubes; the percolate gradually reaches the second branch, down which it will flow into a second U tube. This also has two tubes adjusted, as in the first, but whilst one is a plain pressure tube the other is only a short delivery tube. The percolate now fills this tube, eventually seals the pressure tube and delivery tube, rises in the former, and rises simultaneously in the first tube (with branches) until it reaches the third branch, when the process is repeated. When the last branch is passed the liquid rises in the pressure tube and stops the percolation. By means of this apparatus it is perfectly easy to collect automatically six fractions of 100 C.c. each (or any required volume), without attention. It is desirable that the temperature should not vary very considerably, and that the air imprisoned in the U tubes above the level of the percolate collected should be as small as possible.

Martindale's Oxygen Apparatus.

Considerable attention was devoted to the apparatus for the production of oxygen, exhibited by Dr. W. Harrison Martindale. By means of this apparatus cylinders of oxygen are entirely superseded; by it oxygen may be produced at a moment's notice, the only requirements being "oxylith" and water, and there is no difficulty in manipulating it. Oxylith is supplied in the shape of small cubes or bricks, weighing about 1¾ ounces, packed in tins containing ten bricks. A smaller apparatus is particularly suitable in cases where small quantities of oxygen have to be administered from time to time. These machines should prove of great service to the medical profession.

Interesting Botanical Specimens.

Of these, perhaps the most interesting were the two following :—

Sansevieria thyrsiflora (Nat. Ord. Hæmodoraceæ).—The rhizome of this plant is largely used throughout South Africa as a remedy for piles. In the eastern district of Cape Colony the decoction is taken internally. In Natal the fresh rhizome is chewed and the juice swallowed. The plant is called t'Kay by the natives of Cape Colony. Its active principle is unknown, but will shortly be investigated.

Cycas revoluta.—The male cones were sent over to this country recently on speculation. The medicinal properties are said to be narcotic, diuretic, and emetic, but the active principle requires further investigation. An account of the plant is given by Peckolt in *Zeitschrift d. O. Ap.*, v., 1887, p. 256, *Apoth. Zeitung*, 1894, p. 711, and *Amer. Pharm. Rundschau*, 1894. The scales of the male cones are remarkable for the resemblance they bear to the scales and microsporangia of the Lycopodiaceæ.

Handy Apparatus.

Several time-saving and handy appliances were exhibited by Messrs. Parke, Davis, and Co. The chief feature of the "Phœnix" Emulsifier is that it can be readily cleaned, as the beater, which is the only metallic part of the apparatus which comes in contact with the emulsion, can be lifted out and easily washed. This is a simple and by no means costly arrangement, which saves time, and should turn out a better product than that made in a mortar. A suppository mould of ingenious design was also among these exhibits. A dispensing sieve, which is as novel as it is useful, was another article shown; this is serviceable in sifting powders in small quantities without making a dust. A tincture press and a dispensing-counter tablet compressor completed this display.

Capsule-Filling Machine.

This was exhibited by Messrs. Roberts and Co. This machine is a very neat and ingenious contrivance, by means of which capsules can be expeditiously and carefully filled.

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LIBRARY, MUSEUM, SCHOOL, AND HOUSE COMMITTEE.

At a meeting of this Committee, held on Wednesday, December 9, 1903, the following reports were presented :—

Attendance in Library.

	Total.	Highest.	Lowest.	Average.
London, November	412	36	5	16

Circulation of Books.

	Total.	Town.	Country.	Carriage Paid.
London, November ..	316	202	114	£1 2s. 4½d.
Edinburgh, November	328	182	146	£1 4s. 8d.

Donations to the Library in London.

City of London College :—Calendar, 1903-4.

University College, Nottingham :—Calendar, 1903-4.

University of Sydney :—Calendar, 1903.

Society of Accountants and Auditors, London :—The Incorporated Accountants' Year-Book, 1903.

Institute of Chartered Accountants of England and Wales :—List of Members, etc., 1903.

Dr. R. M. Khory, Bombay :—Khory and Katrak, Materia Medica of India and their Therapeutics, 1903. Two vols.

Sheffield Microscopical Society : — Transactions, Annual Report, 1903.

Schimmel and Co., Militz :—Semi-annual Report, October to November, 1903.

K.-k. Pharmakologisches Institut der Universität Graz :—Blau, Der Colchicingehalt der Herbstzeitlose-samen, 1903; R. Müller, Das Rhodiser-Holz, 1903, Ueber die Vermeintlichen Oxalatkristalle im Safran, 1903, Die Mikroskopischen Drogenbeschreibungen der neuen Ausgabe des Deutschen Arzneibuches, 1901; R. Müller and J. Blau, Fructus Myrtilli, 1902.

Purchase of Books.

The Committee authorised the purchase of the undermentioned books:—

For the Library in London.

Massee, British Fungus Flora.

Atkinson, Studies of American Fungi, Mushrooms, etc., Second edition, 1901.

Tyndall, Six Lectures on Light.

For the Library in Edinburgh.

Decennial Index of the Journal of the Chemical Society. Vol. 4.

Attendance at Museum.

	Total.	Highest.	Lowest.	Average.
London, November	505	35	9	19

Donations to the Museum (London).

Mr. A. Wilson, Ilkley:—Fresh Root of *Œnanthe crocata.*

The Technological Museum, Sydney:—Section of Stem of *Orites excelsa*

Messrs. Evans, Lescher, and Webb:—Specimens of the Rhizome of *Sansevieria thyrsiflora.*

To the Herbarium.

Mr. Arthur Bennett, F.L.S., Croydon:—Thirty-two Specimens of Rare British Plants.

The herbaria sent in for competition for the Herbarium Medals had been returned to the competitors.

The following applications had been received:—

From Mr. J. Austen, Sheffield:—For the Loan of Opium-smoking Apparatus and Specimens of Chinese and Garden Patna Opium.

From Professor Penzig, Hanbury Botanical Institute, Genoa:—For a Specimen of the Spikenard of the Ancients.

From Mr. P. E. F. Perrédès, London:—For a Specimen of Chinese Insect Wax.

BENEVOLENT FUND GENERAL MEETING.

ELECTION OF ANNUITANTS.

On Tuesday, December 8, 1903, at 17, Bloomsbury Square, London, a general meeting of the members of the Pharmaceutical Society and of subscribers to the Benevolent Fund was held for the election of three annuitants on the Benevolent Fund.

Scrutineers were appointed, and, Mr. J. W. Bowen having been elected as Chairman, they proceeded to examine the voting papers. The general meeting then adjourned until the scrutiny had been completed.

At the adjourned meeting, Mr. S. R. Atkins, President, in the chair, the Scrutineers presented the following report:—

SCRUTINEERS' REPORT.

We, the undersigned Scrutineers, appointed at the thirty-ninth Election of Annuitants of the Benevolent Fund of the Pharmaceutical Society of Great Britain, do hereby certify that we have examined the voting papers committed to us, and report the following results:—

	Votes Polled, 1903.	Votes Credited under Rule XI.	Votes Regist'r'd previous Election.	Total.
Ekins, Elizabeth	6,139	—	—	6,139
Hornsby, George G.	6,540	140	—	6,680
Miller, Anne	4,014	—	—	4,014
Tyrer, Thomas F.	3,731	—	1,876	5,607

3,867 voting papers were received, of which number 51 were informal 32 being unsigned, representing 104 votes, and 19 incorrectly filled up representing 70 votes. 6,824 voting papers were issued.

J. W. Bowen, *Chairman.*

E. J. Millard
John Parrott
Frank Goldby
H. Cooper Birch
Frank A. Rogers
Thomas W. Cleave
A. E. Hobbs
S. A. Sturton
R. Fisher Young
Arthur E. Ekins
Arthur J. Wing
W. Prior Robinson
Herbert Cracknell.
W. Fred. Gulliver
F. U. Stamp
Henry I. Stephens
F. Bascombe
Thos. Henry Powell
J. H. Smith

The President then declared that George G. Hornsby, Elizabeth Ekins, and Thomas F. Tyrer had been duly elected annuitants. He moved that a hearty vote of thanks be given to the Scrutineers for their very important services. They had come, he said, at considerable personal inconvenience to render a service to the Society, and, he thought, to the State. He was glad to see that there was a slight improvement in the number of votes and also a decrease in the number of informal papers. He felt that members should take a greater interest in the election and return a greater proportion of papers. The work of benevolence was so important that he was wishful to do anything he could to stir up the whole of the members of the Society to take a more active interest in the Fund. If the Pharmaceutical Society did no other work than its work of benevolence, it would justify its existence. The continued and increased assistance of the Benevolent Fund was rendered necessary by the excessive strain of modern competition. He cordially thanked Mr. Bowen and the other Scrutineers.

The Vice-President seconded the vote of thanks, and said that as Chairman of the Benevolent Fund Committee he could cordially endorse what the President had said.

The vote of thanks was carried.

Mr. Bowen responded on behalf of the Scrutineers. He felt it an honour to be asked to assist in the work. With the President, he considered it a lamentable thing that greater interest was not taken in the Fund by the members of the Society. He thanked the President and Vice-President for their expressions of appreciation.

The proceedings then terminated.

PHARMACEUTICAL SOCIETY OF IRELAND.

MONTHLY MEETING OF COUNCIL.

Wednesday, December 2, 1903, at 67, Lower Mount Street, Dublin, the President, Mr. Johnston Montgomery (Belfast), in the chair.

The Sale of Poisonous Sheep-dip.

The Vice-President said he had to report the result of an interview which a deputation from the Council had had with Mr. William Field, M.P., in reference to the late prosecutions under the Pharmacy Acts at Ballinasloe. The deputation consisted of Mr. Beggs and himself (Mr. Wells), the President not having been able to attend. It was reported in the trade journals that the Ballinasloe Urban and Rural District Councils had passed a resolution deprecating restrictions on the sale of sheep-dip. That resolution was sent to the Irish Cattle Traders' Association, and their committee passed the following resolution:—"That we, the committee of this association, entirely agree with the views put forward in the resolution from the Ballinasloe Urban and Rural Councils, and suggest that the Vice-President, Department of Agriculture, should arrange to have an Order in Council passed so as to enable the sale of sheep-dip by others than chemists as heretofore." Members of the Council heard privately that Mr. Field intended to ask some questions in the House of Commons about the matter; and it was therefore thought that they ought to approach him. He received them in the most friendly manner, and told them that he was thoroughly in sympathy with the Society. They explained to him that the statement that persons who had been in the habit of selling poisons were now being stopped from doing so was misleading. They pointed out that at the passing of their amended Acts of 1890 all the persons who were then qualified to sell poisons, and also those who had been trading without qualification were then registered; and that those who had gone into business since were breaking the law, and had no legal right whatever to sell poisons. They also pointed out that in Ballinasloe there was a pharmaceutical chemist and also a registered druggist, and that these were quite sufficient to supply the town and the farmers of the country all around. They told him that there was not a small town, and, in fact, hardly a small hamlet, in Ireland that had not a registered person in it selling poisons; so that no inconvenience could be occasioned to farmers by legal steps such as those that had been taken. In the result Mr. Field said that if they would write a letter, setting forth the facts, he would place it before the Cattle Traders' Association at their next annual meeting, to be held on the 10th instant; he also said he was strongly of opinion that poisons should not be sold except by thoroughly qualified persons so long as no inconvenience was thereby caused to farmers. He (Vice-President) thought the proper course now was to draft a letter such as Mr. Field had suggested. He (Mr. Wells) had spoken to another member of the Cattle Traders' Association on the subject. As to no danger having resulted from the illicit sale of dips, it was a fact that many animals had been poisoned, and the guilty persons could have been traced if the poison had been sold by some licensed vendor.

Mr. Kelly said that on a former occasion he directed the attention of the Council to this matter, and he thought that in reference to the present case a letter should be addressed to the Board of Agriculture, also explaining how things stood, and that there was every facility for buying poisons from qualified vendors.

The Vice-President said that it would be well also to write to the Ballinasloe Council, pointing out to them the mistake they had fallen into.

It was ordered that the letters suggested should be written.

An Explanation.

Mr. Kelly said that he wished to refer to the proceedings at the last meeting. An idea had got abroad that on that occasion he said something derogatory of the President. He wished to say that he never did. He had always spoken of him in the highest terms; he had supported his appointment to the chair, and would continue to do so.

Correspondence.

A letter was received from Dr. Arthur C. Duffey, thanking the Council for their vote of condolence on the occasion of the death of his father, the late Sir George Duffey, M.D.

A letter from the Registrar of Queen's College, Belfast, applied that their courses of botany and materia medica should be recognised by the Council.

The President moved that the College be placed on the list of schools from which the Council received certificates in botany and materia medica.

The motion was unanimously agreed to.

Membership and Registration.

Messrs. R. Barron, Belfast, and F. J. J. Cahill, Castlebar, and M. J. Dale, Belfast, were elected members.

Miss Sarah O'Neill was elected an associate druggist.

Several names of persons who had not answered letters inquiring as to change of residence were ordered to be erased from the Register.

STOCKPORT CHEMISTS' ASSOCIATION.

MONTHLY MEETING.

Wednesday, December 2, 1903, Mr. Wm. Dodge in the chair.

It was unanimously agreed to adopt uniform prices for certain poisonous proprietary medicines. It was decided to begin by selling "Winslow's Soothing Syrup" and "Chlorodyne" 1s. 1½d. sizes at 1s., and "Kay's Compound Essence" at 10½d.; to commence selling at these prices on January 1, 1904, and gradually to add to this list. The Secretary was instructed to inform the local associations of Manchester and Hyde. All the chemists of the town who are non-members of the Association had been visited by the Secretary, and had most willingly signed the agreement to sell at the above prices.

HUDDERSFIELD CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Tuesday, December 8, 1903, at the Queen's Hotel, Huddersfield, Mr. Walshaw, President, occupied the chair.

The President stated that with three exceptions the whole of the members of the craft in business for themselves in Huddersfield and district were now members of the Association, and those three were not in business in Huddersfield itself. He thought that was a very satisfactory state of affairs. He had been elected as Divisional Secretary again for Huddersfield and Colne Valley, owing to there having been no recommendation for the post at the annual meeting of the Association. He asked for the help of members in connection with that work of Divisional Secretary.

Co-operative Buying.

The adjourned discussion on co-operative buying was then taken up again. The President said that at Bradford and Halifax there were such schemes in operation, and they had a central warehouse, and that involved the expenditure of some capital.

Mr. Spurr said that a mutual arrangement could easily be made between a few of them by which each could buy in quantity. The warehouse and that sort of thing would be out of the question for Huddersfield.

Mr. Sykes having spoken,

The President said they might get better terms on some of the articles outside of the P.A.T.A., perhaps, than for those within the P.A.T.A.; but, on the other hand, he could reckon on having made an additional profit of quite £1 a week by reason of the operation of the P.A.T.A., and that was an appreciable factor.

Mr. Buckley said that many co-operative societies were selling protected proprietaries at the minimum prices and giving dividends off those prices.

The President said that the effect of this, if it were the case, would be that a 2s. 10d. article would in actual effect be sold by the co-operative societies at 2s. 6d. Of course, it was difficult to do any good with anybody outside of the P.A.T.A. in respect of such points.

Mr. Buckley said there could be no doubt that there were many cases in which proprietaries were being sold by the co-operative societies at the minimum prices, less dividend.

The President said a difficulty lay in the fact that the P.A.T.A. authorities, when the matter was mentioned to them, evidently did not know much about the co-operative societies. Since last November, however, that question had been discussed at every meeting of the Council of the P.A.T.A., but they did not see the way out of the difficulty yet.

Mr. Buckley said they would certainly get the trade if the P.A.T.A. put the co-operative societies on the black list.

It was agreed that the Secretary should write to the Secretary of the P.A.T.A., asking what could be done in this matter.

Reverting to the question of co-operative buying, it was eventually decided to make inquiry into the working of the several co-operative buying schemes which are in operation in Lancashire and Yorkshire centres, and a list was made out of proprietary articles which were considered suitable for purchase on such terms.

The meeting then ended.

BRADFORD AND DISTRICT CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Tuesday, December 8, 1903, at the Royal Hotel, Bradford, Alderman Dunn in the chair.

Mr. Metcalfe read a paper on

Field Botany as a Hobby for Chemists.

Mr. Metcalfe described in entertaining style his botanical excursions in Wales; but dealt more fully on his experiences in the Malham district of Yorkshire. He enumerated the numerous rare botanical specimens to be met with in this district, any one of which would repay the exertion of securing them. A field botanising excursion of the sort he described would provide a tired body, which was the best remedy for a tired mind, and would also clear away cobwebs from the brain. A few such excursions, even in these days of company pharmacy, would make life worth living. Mr. Metcalfe afterwards displayed mounted specimens of various rare plants which he had collected.

On the motion of the Chairman, seconded by Mr. Mitchell, and supported by Messrs. Hanson, Marshall, Priestley, and Noble, a hearty vote of thanks was tendered to Mr. Metcalfe, and was duly acknowledged.

Other Matters.

The Secretary (Mr. D. S. Priestley) stated that an invitation had been received from the Leeds and District Chemists' Association to a discussion on the subject of territorial representation; and also from the Bradford and District Chamber of Trades to the annual dinner of that organisation. It was decided to accept these invitations.

Mr. Hanson reported upon the efforts the Association had made to secure the protection of profits on stamped medicines. It was decided that a memorial should be sent to each firm which has provided no scheme of protection.

Details in connection with the forthcoming conversazione, to be held in January, were afterwards considered.

SHEFFIELD PHARMACEUTICAL AND CHEMICAL SOCIETY.

ANNUAL SMOKING CONCERT.

Thursday, December 3, 1903, at the King's Arms Hotel, Sheffield, Mr. C. F. Carr, Vice-President, in the chair. Others present included Messrs. H. Antcliffe (Hon. Secretary), G. Squire, J. Gilbert Jackson, F. W. Whitworth, G. Ellinor, J. W. J. Turner, S. G. Carey, J. Evans, F. A. Upsher-Smith, J. Alcock, E. E. Haslegrave, J. Hughes, Potter, and Simpson. An excellent musical programme was carried out, the evening being much enjoyed.

GREAT YARMOUTH PHARMACEUTICAL ASSOCIATION.

ORDINARY MEETING.

Thursday, December 3, 1903, at 156, King Street, Great Yarmouth, Mr. T. B. Male in the chair.

The adjourned discussion on earlier closing was resumed, and it was eventually unanimously agreed to close during the winter at 8.30 p.m., Thursdays, 2 p.m., Saturdays, 10.30 p.m. The Federation Report was read and commented upon, and Mr. Palmer moved that the Federation should hold two general meetings per annum, one to be held in London not later in the year than May. This was seconded by Mr. Roberts, and carried. It was agreed to support Mr. G. G. Hornsby for the Benevolent Fund Election.

BLACKPOOL AND FYLDE CHEMISTS' ASSOCIATION.

MONTHLY MEETING.

On Friday, December 4, 1903, at the Palatine Hotel, Mr. Turver in the chair.

A Postal Grievance.

The Hon. Secretary introduced for discussion paragraph 5, page 16, of the 'Post Office Guide,' which provides that no compensation be given for damage to a parcel containing liquid. According to present regulations, it appears especially hard upon the sender of liquids, because he not only has to replace the medicine, but also to pay extra postage. If a concession could be obtained from the Post Office to deliver a replaced bottle free, it would be an advantage to chemists, who probably send the greater quantity of fluids by post, and until the authorities knew there was a grievance there was not the remotest probability of an alteration. The present regulations were a premium on carelessness. He had medicine broken, and the Post Office would not carry replaced bottles free; yet in the case of glass syringes broken there was no trouble in obtaining payment for damage.

Mr. Laurie thought the Post Office were not responsible, as medicine might burst during transit. He could call to mind two bottles he had sent bursting without blame attaching to the Post Office employee. He did not consider corrugated paper secure enough, and nothing less than a box was proof against the knocking about a parcel would receive during transit. It was very annoying, yet he did not see how he could improve it.

Mr. Turver spoke of bottles, most carefully packed by himself, being smashed, which he thought would be impossible without the aid of a pick-axe. He thought they had a grievance, but was afraid it would not be of any use ventilating it.

Messrs. Jackson, Buckley, Greenwood, and other members agreed compensation was desirable, but did not see how they were to obtain it.

After further discussion the subject was allowed to drop.

Christmas and New Year Holidays.

Considerable time was occupied in arranging the opening during Christmas and New Year. Last year one chemist opened all the morning on Christmas and other days; this year another member purposed doing likewise.

The only arrangement that was adopted was to open in the evening from 6 to 8, upon such days as the Tradesmen's Association should decide as holidays during Christmas and New Year; morning optional.

Mr. Horton, who has taken over the business of Mr. Harlow, was elected a member.

Mr. Turver said it had been suggested to him that a social evening should be arranged in which ladies could join, as the chemists had their dinner, which was a most exclusive function. The suggestion was postponed until the next meeting.

SCHOOL OF PHARMACY STUDENTS' ASSOCIATION.

ORDINARY MEETING.

Friday, December 4, 1903, at 17, Bloomsbury Square, London, Mr. T. E. Wallis, B.Sc., in the chair.

Revision of Rules.

Mr. Harold Deane, B.Sc., pursuant to notice, moved the appointment of a special committee to revise the rules of the Association, which, he asserted, had been frequently broken during the last few years.

Mr. Cart seconded the motion, which was opposed by Mr. Robinson.

On being put to the meeting, the motion was declared by the Chairman to be carried. A vote having been demanded, twenty voted for the motion and twenty against. The motion was carried, however, by the casting vote of the Chairman, and a committee of five members was appointed.

Mr. R. R. Bennett read a paper on

Oak-Galls.

Mr. Bennett considered briefly the life of the gall-flies themselves, reviewing the observations of various experimenters, and calling special attention to the alternation of generations among many of the species of Cynips, an exclusively female generation being succeeded by a bi-sexual generation. Other species, however, notably *Cynips kollari* and *Cynips gallæ tinctoriæ*, have been found to be exclusively parthenogenetic. The alternations of generations is supposed to have been gradually evoked by differences in the nutrition of the alternating generations. The structure of the ovipositor of different species of cynips varies somewhat, but the connection between the "terebra" and the plates to which it is attached is always the same, and the groups of muscles are alike in every ovipositor. In spite of the great differences in size and appearance, all insect galls can be referred to a common origin; the parent tissue from which they spring always has the same physiological character. It is invariably a tissue which is not yet differentiated, some zone of formative cells such as the cambium, which possesses the conditions essential for gall-formation. The simple prick of the gall-fly does not set up oak-gall formation, but this only begins when the larva emerges from the egg which is deposited. In some other classes of galls a glandular secretion flows into the wounded leaf, and, a few hours after the injury, the leaf surface presents an altered appearance, new cell-formation beginning freely. But in most cases it is the emerging larva which first stimulates gall-formation. For instance, *Trigonaspis crustalis* pricks the leaf in May, but some months pass before any trace of gall-formation can be seen. It is not until September that the larva leaves the egg, and then it is that gall-formation begins. In some few cases the exact time at which the larva quits the egg and starts gall formation has been observed, and it has been found that as soon as the larva has broken through the egg-covering and has for the first time wounded the surrounding cells with its delicate mandibles, a rapid cell-growth begins. When the egg is laid in the cambium ring of the bark, the cells which first form round the larva cannot be distinguished from the adjacent cells of the cambium tissue. The new cell-growth is arranged in regular concentric layers around the larva, and is accompanied by certain changes in the cell contents, the cells lying next to the larva swelling, while the cell-contents become cloudy and exhibit a multitude of starch-granules. The rudimentary gall derives its first nourishment from the surrounding tissue, but later it acquires greater independence, for a new element comes to assist in its further development. From the spiral vessels, lying within the cambium ring, processes are driven into the rudimentary gall. The entrance of these vessels always occurs at a definite spot on the lower surface of the gall, whether the connection with the parent tissue be a broad base or by a small stalk. Thus the galls become independent structures, and assume an endless variety of forms.

At the conclusion of Mr. Bennett's paper, which was illustrated by lantern slides, the Chairman opened a discussion in which Messrs. Cole, Cart, Naylor, J. Stuart Hills, Hewlett, Paterson, and Wilson joined.

Mr. F. G. C. Walker proposed, and Miss Vera Cross seconded a hearty vote of thanks of Mr. Bennett, which was enthusiastically carried.

GROCERS' FEDERATION—PARLIAMENTARY COMMITTEE.

VISIT TO SOMERSET HOUSE.

On Thursday, December 3, 1903, the Parliamentary Committee of the Grocers' Federation waited on the Secretary of the Board of Inland Revenue at Somerset House, and was received by Mr. Chapman, Assistant-Secretary. The following account of the proceedings is reprinted from the *Grocer*:—

On behalf of the deputation, Mr. J. P. Evans, J.P., pointed out that the Order issued by the Inland Revenue Commissioners following upon the decision in the Ransom *v.* Sanguinetti case, that all medicinal preparations, even of the simplest and cheapest description, must bear a medicine duty stamp, that, in the case of penny articles, was 150 per cent. more in value than the price of the articles. This was an Order which would press most hardly upon the working-classes, particularly in the scattered districts of the country, where medical assistance and chemists' shops were not sufficiently easy of access. Mr. Evans pointed out that though the Federation realised the obligation upon the Inland Revenue Commissioners to carry out the Act of Parliament, yet he thought that the provisions of the Act should be interpreted as liberally as possible in order to create as little public inconvenience as possible, and as little interference with present trade methods as would be consistent with the Act. The Federation had received information from the Commissioners of some modifications, and he wished to ask whether it might be taken as officially decided that medicine described by titles referring to organs of the body rather than to the action such preparations would have upon such organs would be exempt from duty. If that were done, he thought that a great deal of the difficulty which the new Order presented would be over. He wished, however, also to point out that it was most desirable that the date when the Order should come into operation should be extended. He would suggest that it should be extended from December 31 to March 31. There had been so much uncertainty about the application of the Order of the Commissioners that the trade were at present very confused as to what they would have to comply with. The new suggestion as to the exemption of medicines bearing "Organ names" had only recently come before them, and the month of December was an exceedingly difficult month for grocers to go into such minute details of their business. If, therefore, the date could be extended as he had suggested, it would be greatly for the convenience of the trade.

The Assistant Secretary, in replying, said that there was no doubt the exemption as to "Organ" named medicines might be taken as having been definitely decided upon, and he would be glad to discuss with the Secretary of the Federation any names that might be presented, in order that the Commissioners might express their opinion as to whether these came within the exemption. In reference to the date when the Order was to come into operation, the Board had certainly decided that December 31, 1903, would be the limit that could be allowed. As, however, several new features of the case had arisen since July, whilst he was unable to definitely commit the Commissioners to any date, yet, if an official application were sent in by the Secretary of the Federation, he would take care that it was put before the proper quarters, and hoped that it might find favourable acceptance. He wished also to point out that the Commissioners had never harshly put into operation any Order, and should any individual case of difficulty arise, if it were presented to the Commissioners by the Federation, he would assure them that it would have every consideration.

After some further discussion, the deputation, before retiring, thanked the Assistant Secretary for his courteous reception.

CHEMISTS' ASSISTANTS' ASSOCIATION.

CINDERELLA DANCE.

Thursday, December 3, 1903, at the Dorset Hall, Portman Rooms, London, W. The first Cinderella dance of the season, and, indeed, the first which has been held under the auspices of the Association since the dances were discontinued some years ago, was in every way a successful function. The numbers of ladies and gentlemen present were nearly equal, and the total number present was just proportional to the size of the room. Messrs. C. W. Martin and A. H. Solomon were efficient M.C.'s, and the whole of the arrangements were most creditable to those gentlemen and to Mr. A. Latreille, the energetic Honorary Secretary of the dance.

ABERDEEN PHARMACEUTICAL ASSOCIATION.

DEPUTATION TO MR. JAMES BRYCE.

On Friday, December 4, 1903, a deputation, consisting of Messrs. Wm. Giles, President, James Paterson, Treasurer, and John Black, waited upon the Right Hon. James Bryce, M.P., at the Grand Hotel, Aberdeen, in order to ascertain his views on the Pharmacy Acts Amendment Bill. Clause 7 was discussed at some length, and after hearing the deputation, Mr. Bryce expressed concurrence with their views, and said that when the Bill came before the House of Commons he would give it his best attention.

QUARTERLY MEETING.

Wednesday, December 2, 1903, in Robert Gordon's College, Aberdeen, the President, Mr. Giles, in the chair.

Educational.

Mr. A. L. Bruce submitted the report of the Education Committee, and moved its adoption.—This was seconded by Mr. J. Paterson.

Mr. D. Ritchie did not deem it advisable to send a copy of the report to the Pharmaceutical Council, and moved accordingly, but his motion was not seconded.

Mr. W. F. Hay said that while approving of the portion of the report which recommended that the Society should again conduct its own Preliminary Examination, he must take exception to the part which treats of the Minor Examination. The report suggested the converting of the second, or oral, part of the examination into a written examination, to be taken first. This to be done by way of a relief to the candidate, also with the view of it being possible that the candidate might take this examination at various centres, as in the old preliminary days. He contended, however, that the examiners would insist on an oral as well as a written examination in the subjects of botany, materia medica, and pharmacy, which would necessitate a three days' examination, and give no relief to the student. He moved as an amendment to the report, "That the Association recommend the division of the Minor Examination on the lines indicated, *i.e.*, first day, botany, materia medica (theoretical and practical); second day, at a later date, chemistry, pharmacy, and dispensing (theoretical and practical)."

It was pointed out, however, that this could only be done after the passing of a new Pharmacy Act.

Mr. Hay then stated that in his opinion the Committee's report would not meet the grievances of the candidates, and he would move, "That the part of the report in so far as it referred to the Minor Examination, be deleted."

A vote resulted in the Committee's report being carried by a majority of two.

MANCHESTER PHARMACEUTICAL ASSOCIATION.

ORDINARY MEETING.

Wednesday, December 9, 1903, at the Victoria Hotel, Manchester, Mr. W. Kirkby in the chair.

Mr. Harry Kemp gave an address on

Territorial Representation,

basing his remarks on the paper read by Mr. J. F. Tocher at the annual meeting of the Federation of Local Associations. He (Mr. Kemp) went with Mr. Tocher to some extent. The apathy which was now noticeable at Council elections might be removed by a redistribution of seats. A disadvantage was that they all more or less took a personal interest in the members of the Council, and particularly certain members of marked ability, who had the confidence of many members of the Society. The question did occur as to whether, under the proposed new system, they would lose those men if relying on local support for their election or re-election. Local prejudices might affect a man's chance in an election against a competitor. He questioned whether it was advisable for the Manchester Association to take any steps in the matter.

The discussion was continued by Messrs. Grier, Wilkinson, Pidd, Ringer, and Lane. Mr. Ringer suggested that they might lose force by the proposed scheme, by shutting out some men of influence, but Mr. Pidd did not think that territorial representation would prevent the best men being elected.

Mr. Kemp then moved, and Mr. Wilkinson seconded, the following motion:—

> That this meeting approves of the principle of territorial representation upon the Council of the Pharmaceutical Society, without committing itself to Mr. Tocher's scheme as formulated at the last meeting of the British Pharmaceutical Conference.

The motion was carried.

Medicine Stamp Duty.

Mr. Kemp then introduced the subject of liability to Medicine Stamp Duty. He regretted the constant changes in the practice of the Board of Inland Revenue. Altogether he thought that chemists were now in a worse position than before. The *Chemist and Druggist* of November 28 said: "It would be an immense advantage to the trade and to the Revenue authorities if they would try and forget for a time that there is anything new about medicine stamp law." He thought that was bad advice. Mr. Kemp then referred to a letter in the *Pharmaceutical Journal* from the Revenue authorities, on the subject of the acceptance of reference to a book of recipes from which medicines were prepared without specific identification, and thought somebody was responsible for the withdrawal of that privilege. He could not understand any journal writing what some journals had published on this particular phase of the subject. The speaker gave quotations from the *British and Colonial Druggist*, and asked why that journal should have gone out of its way to ask questions of the authorities? He (Mr. Kemp), and he ventured to say others also, were perfectly satisfied before. He had an idea where the suggestion came from. The trade papers had been too anxious to know why the authorities were going to give all the good things he had alluded to. They were in a worse predicament now than before the matter was first brought up. He questioned whether any good would come out of the present agitation, and it might lead to the wiping out of the Medicine Stamp Act altogether. If so there would be nothing to prevent anybody putting up anything he liked to be sold for 3d. to cure all sorts of things. Mr. Kemp then moved:—

> That this meeting approves of the action of the Pharmaceutical Council in approaching the Inland Revenue authorities with a view to the removal of the uncertainty which now prevails as to the liability and non-liability of preparations to the incidence of the medicine tax, and that it urges upon the Council the desirability of getting the authorities to delay the new regulations for a further three months,[*] seeing the constant uncertainty of the last few months has prevented many chemists from making proper provision in the matter of labels, etc.

Mr. Pidd seconded the motion.

After a long conversation the motion was carried.

On the motion of the Chairman, seconded by Mr. Pidd, a vote of thanks was accorded to Mr. Kemp for the able way in which he had opened the discussion on the two subjects brought before the meeting.

NEWCASTLE-ON-TYNE CHEMISTS' ASSOCIATION.

ANNUAL DINNER.

Wednesday, December 9, 1903, at the Hôtel Métropole, Newcastle, Mr. George Foggan, President, in the chair.

The loyal toasts having been cordially honoured,

Mr. T. M. Clague (a Vice-President of the Association) proposed the toast of

The Pharmaceutical Society.

He said he was glad to know, speaking for not merely Newcastle, but the whole district, that they were getting nearer and nearer to the ideal of having their members generally connected with the Pharmaceutical Society. The number of Newcastle pharmacists connected with that Society was steadily increasing, and some were going through the incubating process which would result in their joining the Society in the days to come. He knew that it was often said they had too many societies connected with pharmacy in these days. He frankly admitted that that was the case; but they must remember that there was hardly such a polyglot animal under the sun as the average pharmacist. This made it necessary that they must have divergent associations, some more concerned with looking after one phase of their daily work than some other society found it possible to do. He would be exceedingly sorry ever to see the Pharmaceutical Society undertake to do the excellent work that the Proprietary Articles Trade Association was doing. He would be sorry, indeed, if any of their friends the enemy were ever able to taunt them truthfully with the remark that the Pharmaceutical Society was a mere trade protection society, or trade union. They had a glorious heritage in that Society; a heritage of which he for one was very proud, and he would remind them that the Society was all that was highest and noblest in their daily calling. He hoped the day would never come when the School of Pharmacy, at Bloomsbury Square, would cease to exist. Again, the Society was the custodian of their chartered rights. The Pharmaceutical Council, of which they had so able a representative present in Alderman Harrison, was the only body which could institute proceedings under the greater portion of the Pharmacy Act. These men had worn the apron, and were absolutely loyal; and he would remind them that if ever they ceased to have this work done for them by the Pharmaceutical Society, the Privy Council would put the matter into the hands of private police, and he for one was not desirous of having that change made.

Alderman John Harrison, member of the Council of the Pharmaceutical Society, responded. He said no man was more loyal to the Pharmaceutical Society than Mr. Clague. He did not think, as a member of the Council for nearly fifteen years, that Mr. Clague had said one word too high praise of the manner in which the Society discharged its duties. He, too, hoped the Society would never become anything in the nature of a trades union. It had a higher and nobler sphere to fill. To that Society was confided the task of the administration of the Pharmacy Act, and should they be lax in the performance of their duties, the Privy Council, as Mr. Clague suggested, would soon take the matter out of their hands, and if they were committed to the tender mercies of the Privy Council they would find that the little finger of the Privy Council would be thicker than the loin of the Pharmaceutical Society. They had hoped, some years ago, when certain disabilities were removed, that a larger number would have joined their ranks. He did not intend to speak on the fiscal question, but he wished to say that last week, somewhat late in the day, they decided to send a deputation from their Council to the Inland Revenue authorities, in order to see whether they could not establish a *modus vivendi* with regard to the medicine stamp question. The Pharmacy Bill, he said, was to be again introduced into the House of Commons at the earliest possible date, but it was impossible to say whether the House would give the Pharmacy Bill much attention next session. This did not relieve them from the responsibility of trying to get the imperfections of the Bill of 1868 remedied, and he hoped they would urge upon their respective members of Parliament to give their support to the Bill when it was introduced. They should induce them to study the Bill on lines of public policy, explaining to them the difficulties; and he could not help thinking that they would get them to sympathise with their efforts in that direction. He believed their local organisation was never more perfect than it was to-day. In conclusion, he referred to the Benevolent Fund. Times were hard, and the demands on the Fund were great, and it was very desirable that as many as possible should subscribe.

Mr. G. F. Merson proposed

The Pharmaceutical Press,

coupled with the name of Mr. John Humphrey. He was pleased to see that lately the *Pharmaceutical Journal*—which was the official organ of the Society—was giving more attention to everyday work, besides giving the educational and scientific information for which it was noted.

The President said they were glad to welcome Mr. Humphrey amongst them, all the more so as he was a north-countryman.

Mr. J. Humphrey, Editor of the *Pharmaceutical Journal*, responded. In reference to the Society, he said that it was nothing like so weak as they imagined. For some years there had been a habit of quoting some classic figures about only one-third being members. Well, the facts were that there were less than 16,000 chemists and druggists, and close upon 6,000 were members of the Pharmaceutical Society. He found that in the Newcastle district less than 50 per cent. of the members of the local Association were also members of the Pharmaceutical Society. They had the best in the Society, and if outsiders wanted to be included amongst the best they would have to come in.

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[*] This concession has now been granted (see p. 876).—[Ed., *P.J.*]

The President proposed "The Ladies," to which Mr. C. E. Layne made a suitable response.

Mr. R. R. Bainbridge (Stockton) proposed "The Newcastle and District Chemists' Association and Kindred Associations," to which Mr. Golightly and Mr. W. Pescod (Hon. Secretary) replied.

WEST HAM AND DISTRICT CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Thursday, December 10, 1903, at the Earlham Hall, Forest Gate, E., Mr. W. Mitchell in the chair.

Address by Mr. Glyn-Jones.

Mr. Glyn-Jones first spoke of the formation of the Proprietary Articles Trade Association nine years ago. Last year was the most successful in the history of the Association. He then referred to the Chemists' Defence Association, Limited. It might be found advisable to raise the subscription to this Association, as the support it was at present receiving was not adequate. With regard to the medicine stamp difficulty, he thought that too much had been made of it. But the trade owed much to the pharmaceutical press for the manner in which the difficulties had been met. Chemists now had special privileges over grocers and limited companies, and they should now attempt to get the Acts repealed. It was absurd to expect to retain proprietary rights and at the same time avoid the duty. As to the Pharmacy Bill, Clause 7 had been deliberately inserted, and a similar enactment was law in the Orange River Colony. The Bill must be kept prominently before members of Parliament and the public.

The Chairman thanked Mr. Glyn-Jones for his address, and said that they were indebted to him for the work which had been done by the P.A.T.A. and the C.D.A.

Members asked various questions with regard to the numbers of formulæ in books of reference, and Mr. Glyn-Jones replied.

A formal vote of thanks to Mr. Glyn-Jones was then proposed by Mr. Forbes, seconded by Mr. Potter, and carried.

A discussion then took place on the "breaking of bulk" of proprietary medicines, and the further consideration was postponed to the next meeting.

The proceedings then terminated.

MIDLAND PHARMACEUTICAL ASSOCIATION.

SMOKING CONCERT.

Wednesday, December 9, 1903, at the Great Western Hotel, Birmingham, Mr. A. W. Gerrard, the President, in the chair. Several members of the Association contributed to the programme, including the President, Messrs. Heyser, Homer, Ryland, and Newton. Mr. Booth was an able accompanist.

LEGAL INTELLIGENCE.

Sale of Food and Drugs Acts.

Camphorated Oil and Spirit of Nitre.

On Thursday, December 3, 1903, at Sheffield Police Court, Mr. H. H. Brown prosecuted in several cases in connection with drugs. Mr. Brown remarked that all defendants appeared to have contravened the Act through ignorance. These people, though not possessing the slightest knowledge of pharmacy, dabbled in drugs in connection with their usually small grocery businesses. They were, said Mr. Brown, entirely at the mercy of the wholesale dealers, and the public were defrauded through their ignorance.

The defendants were Mary Elizabeth Trickett, 64, Brown Street; Joseph Gill, 69, Lansdowne Road; and Charles Henry Pagett, 20, Franklin Street—all of them provision dealers on a very small scale. The first was charged with selling camphorated oil, and the last two with selling sweet spirit of nitre, not of the substance required. All pleaded ignorance. They were fined £2 and costs each.

Cod-liver Oil.

On Saturday, December 5, 1903, at Thames Police Court, London, Charles C. Reece, of 45, Newman Street, W., trading as Henry Squire, 217, East India Road, appeared to answer a summons charging him with selling fish oil as cod-liver oil.

Mr. George Hay Young prosecuted on behalf of the Poplar Borough Council, and said, in addition to the Poplar shop, the defendant had two shops at the West End. The Council's inspector went to 217, East India Road, and asked for a pint of cod-liver oil. The manager said he only had 16 oz., and the inspector said he would have that. The manager then said, "I think it is all right; it has been in stock two years." On the sample being analysed it was found to be fish oil, and not cod-liver oil at all.

Mr. A. J. Field, inspector under the Sale of Food and Drugs Acts, having given evidence,

The defendant said cod-liver oil was now very dear. He bought the oil as cod-liver oil from a respectable firm in the City. Twelve months ago cod-liver oil went up to a big price, and he contracted with the firm in question for five casks at £6 12s. 6d. a cask, which he had in as they were wanted. A part of that was what had been supplied to the inspector. His manager made a mistake when he stated that they had the oil two years. Cod-liver oil was now £1 a gallon, and if what had been supplied him was fish oil he should take proceedings against the firm.

Mr. Dickinson adjourned the case to have the sample tested by the Somerset House analyst.

Seidlitz Powders.

On Wednesday, December 2, 1903, at the Chertsey Petty Sessions, Henry Pryor, a general dealer, was summoned for selling, on October 20, a seidlitz powder deficient in weight.

Mr. C. J. Martin, an inspector under the Food and Drugs Acts, said that, being in defendant's shop on the day in question, he saw a box on a shelf that had in it a number of seidlitz powders. He asked Mrs. Pryor for six, and she served him. He paid 9d. for them. He then told her that he had purchased them for analysis, and he made the required divisions of the sample. Subsequently a sample was sent to the Public Analyst, and was proved deficient.

By Mr. Baker (for the defence): They were all ready made up when witness bought them. He had found that defendant had bought them so in London, and sold them in the same condition as when he received them. If he had had an invoice it was probable that proceedings would have been taken against the person who had sold them to the defendant.

The defendant said he sold them in ignorance of their being of short weight. He had destroyed the remainder, and should not stock them any more.

Defendant was fined 1s. and the costs.

Pharmacy Act, 1868.

Proceedings at Glasgow Under Section 15.

Pharmaceutical Society v. Hudson.

Wednesday, December 9, 1903, in the Sheriff Court House, Glasgow, before Sheriff Substitute Davidson, Margaret Hudson, a young girl who was an assistant in the shop of Dr. Roy Fortune, at 107, Castle Street, was charged with having, on September 16 last, sold a quantity of laudanum in contravention of Section 15 of the Pharmacy Act. On November 12 Hudson pleaded not guilty, and this date was consequently fixed for trial.

On his Lordship taking his seat on the Bench, Mr. Peter Morison, jun., S.S.C., Edinburgh, stated that respondent had decided to plead guilty, and the trial would therefore not take place.

Mr. Bannen, writer, who appeared for the respondent, stated that, as his Lordship was aware, in cases of this kind it was almost impossible to escape conviction. He would have liked to have shown his Lordship the methods adopted by the prosecution. The accused, who was only sixteen years of age, was employed by Dr. Fortune about the month of August, to keep the shop open, and take in messages. She received express instructions from the doctor not to dispense drugs; if these were required he would do so himself. She did her best to carry out these instructions, and in all probability would have been successful but for the manner in which she was trapped by Mrs. McKellar, who was employed by the Society for the purpose of obtaining convictions in cases of this kind. Mrs. McKellar had called at the shop several times, and wormed herself into the confidence of the accused, and on the last occasion, or the occasion before that, she asked for laudanum, and she feigned toothache. Accused on the first occasion refused to supply her, but on the second occasion Mrs. McKellar was more pertinacious, and after a great deal of persuasion induced the accused to give her laudanum. The accused was dismissed from the doctor's employment three or four days before the complaint was served, and before either she or the doctor was aware that such a thing was intended. He asked His Lordship to make the fine as moderate as possible, and give her time to pay it.

Mr. Morison said there was hardly a word addressed to his Lordship which he could assent to. It was not the case that Mrs. McKellar, who had been at the shop on one occasion before she got the poison, had been frequently at the shop, and it was absolutely untrue to suggest that Mrs. McKellar feigned toothache. He had made special note when taking the precognitions in the case to ask if there had been any such suggestion, and his information was that the poison was sold without question, without any inquiry, and given quite readily. It was a fact that the doctor in the case had two shops, and complaints were made in respect of both. The doctor's procedure, however, was evidently to get rid of the assistants, and the Society failed to trace the assistant who was in the shop at 154, Gallowgate. All this was indicative of the methods the Society had to contend with. He wrote a letter to the respondent immediately after the service of the complaint, intimating the date of the pleading diet, and it was returned through the dead-letter office—"Gone; no address." In the case now before the Court, costs would largely exceed the penalty which would be recovered. This prosecution had some importance, as a number of doctors were prosecuted in the year 1901, and the General Medical Council issued a warning pointing out that any registered practitioner proved to have so offended was liable to have his name erased from the Register. It was suggested that a reasonable time ought to be allowed doctors to put their houses in order, and the present case, and those which were heard recently, were the first prosecutions that had been taken by the Society for two years. He asked his Lordship to impose in the case the same penalty as in that of Alexander Cross and Sons, Limited, the maximum of £5 and the maximum costs £3; an award of that amount would not nearly cover the costs incurred by the prosecution.

His Lordship pointed out that he could see no reason why the fine in this case should be less than in the other cases. As a matter of fact, the respondent had put the prosecution to a deal of unnecessary expense. He would impose a fine of £2, with £1 6s. 8d. of expenses, or fourteen days' imprisonment. Ten days were allowed in which to pay the fine.

High Court of Justice.—King's Bench Division.

Damaged Corks.

On Monday, December 7, 1903, before Mr. Justice Walton, the Apollinaris Company, Limited, sued the Norddeutsche Insurance Company to recover for a partial loss under a policy of marine insurance upon corks, dated August 21, 1902. The Apollinaris Company, Limited, claimed to be indemnified against a loss which they had suffered by the destruction or damage by fire of certain bales of corks, bottles, and other goods, which were covered by the policy at the time of the loss.

The learned Judge gave judgment for the plaintiffs for £1,021 16s. 10d., and, after discussion, he also gave plaintiffs interest at 4 per cent. from date of writ, and allowed a stay of execution with a view to an appeal.

Medicine Stamp Duty Acts.

Prosecution at Southampton.

On Tuesday, December 8, 1903, at the Southampton Borough Police Court, William Martin, pharmaceutical chemist, High Street, Southampton, was summoned for having exposed for sale steel and apiol pills in a packet liable to stamp duty without a medicine stamp.

Mr. Hawkins, solicitor, prosecuted on behalf of the authorities, and evidence was given of the purchase of a box of pills, which were the subject of the summons, and, the prosecution contended, were not stamped.

Mr. E. Gulliford, on behalf of Mr. Martin, contended that the pills sold were not liable to stamp duty. To render them so there must be a claim to some occult or secret art in preparation, or there must be a claim to some proprietary right, or it must be held out that the pills were beneficial for some particular ailments of the human body. He contended that the prosecution had failed, but if the Bench decided against him, the duty would be paid in future. There had been no wilful attempt to evade the law.

The Bench held that the box ought to have borne a stamp, and inflicted a fine of £1 and the costs.

POISONING CASES AND INQUESTS.

The number of deaths by poisoning reported during the seven days ended Wednesday, December 9, 1903, was fifteen :—

Poison.	Accident.	Suicide.
Aconite and Belladonna Liniment....	—	1
Carbolic Acid	—	5
Chloroform	3	—
Hydrochloric Acid........................	—	1
Laudanum........................	1	—
Lead	1	—
Morphine	1	—
Nitric Acid	1	—
Oxalic Acid	—	1
Total	7	8

Aconite and Belladonna Liniment.—A man at South Kensington committed suicide by drinking aconite and belladonna liniment.

Carbolic Acid.—A man at Stockport, a man at Redditch, a woman at Andover, and another at Manchester have died from carbolic acid poisoning. A girl also committed suicide at Egerton Park, near Birkenhead; the jury returned a verdict of "suicide during temporary insanity," and added that the sale of carbolic acid should be subjected to more stringent regulations. A police-inspector said he believed the bottle must have been obtained at some store. None of the chemists in the neighbourhood kept that particular preparation.

Chloroform.—Three deaths under chloroform are reported, from Wolverhampton, Liverpool, and Manchester respectively.

Hydrochloric Acid.—A domestic servant at Charlton took spirit of salt with fatal effect.

Laudanum.—A Southwark labourer died by misadventure, from an overdose of laudanum.

Lead.—Lead poisoning caused the death of a stereotyper at Liverpool.

Morphine.—A lady doctor, who resided at Watford, died from an overdose of morphine, injected hypodermically.

Nitric Acid.—An artist at Liverpool died "through misadventure," having taken nitric acid.

Oxalic Acid.—A woman at Wandsworth has committed suicide by taking oxalic acid.

Suspected Arsenical Poisoning.—Four inquests, three in Salford and one in Manchester, have just been held on persons who have died from peripheral neuritis. It is questioned whether arsenic was the cause. Verdicts of "Death from peripheral neuritis" were returned without any specific reference to arsenical poisoning.

Suspected Lead Poisoning.—A Buxton barmaid's death from perforation of the bowel was thought to have been indirectly caused by drinking soda water from a "lead-topped syphon."

Attempted Suicides.—A large number of cases of attempted suicide by poison have been reported, but present no characteristics of especial interest.

SCHOOL AND COLLEGE NEWS.

Nottingham School of Pharmacy.—The annual supper was held on Tuesday, December 8, at the Mikado Café, Nottingham. Mr. R. Fitzhugh, J.P., presided, and the function passed off very successfully.

Liverpool School of Pharmacy.—The annual smoker will be held on December 16, 1903, at the Victoria Restaurant, Basnett Street, Liverpool. Chair to be taken at 7.30 p.m., by Professor Boyce, F.R.S., of the Liverpool University and Tropical School. All chemists and their assistants are cordially invited.

School of Pharmacy.—Next Tuesday, the 15th inst., is the date fixed for the annual smoking concert of the Pharmaceutical Football and Athletic Club, which is to be held at the Holborn Restaurant. A substantial proportion of the profits of the concert will be given to the Benevolent Fund of the Pharmaceutical Society.

Westminster College.—The last botanical excursion for the present year will take place on December 17, when a visit will be made to Kew Gardens. Tea will be provided at the Rose and Crown Hotel, Kew Green, after which the result of the college prize competition will be announced, to be followed by a smoking concert. Any former students will be heartily welcomed. Train leaves the Bank for Shepherd's Bush at 1 o'clock, and thence by electric tram.

Pharmaceutical Football Club.—On Saturday, the 5th inst., the League match of the Square *v.* Muter's was to have been played on the former's ground, but owing to the delay caused by the fog to the visiting team, and the late arrival of the referee, it was found impossible to play the League match on that day, and a short friendly match was arranged. The weather was anything but propitious, the fog being still very dense, and before the conclusion of the game darkness had already set in. The game resulted in a draw, each side scoring one goal.

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

Royal Photographic Society.—On Tuesday, December 15, at 8 p.m., at 66, Russell Square, Mr. George Lamley will show a collection of slides of "The Engadine and its approaches."

Therapeutical Society.—At a meeting of this newly-formed Society held recently, Professor R. B. Wild read a paper on the "Pharmacology of the Saponins," and Dr. O. Stapf, of Royal Gardens, Kew, communicated a note on the Botany of the Indian Aconites.

Chemical Society.—An ordinary meeting was held on Thursday, December 3, 1903, at Burlington House, London. The papers communicated were of small pharmaceutical interest, but several persons connected with pharmacy were elected fellows of the Society.

he Late Mr. J. H. Mathews.—At the funeral on Saturday the 5th inst., of the late Mr. John H. Mathews, whose death, at the age of 58, was reported in last week's issue, the Western Chemists' Association (of London) was represented by Mr. J. W. Bowen, President, and Mr. W. F. Gulliver, Vice-President.

"Patent" Medicines in Germany.—The German Official Bureau of Statistics, according to the *Daily Express*, is preparing tables showing a striking decrease in recent years in the use per head of doctors' prescriptions, which is attributed by the profession to the more frequent recourse taken by the public to "patent" medicines.

Linnean Society.—The Council of the Linnean Society having, with great regret, accepted the resignation of Professor G. B. Howes, F.R.S., on the ground of ill-health, a vacancy was caused on the Council and in the zoological secretaryship. At a special meeting the Rev. T. R. R. Stebbing, F.R.S., was balloted for and declared duly elected.

Chemists' Ball.—Those gentlemen who have not yet replied to the letters requesting them to act as stewards for the Chemists' Ball, 1904, are asked to be good enough to communicate with Mr. Richard A. Robinson, jun., Hon. Secretary of the Ball Committee, 17, Bloomsbury Square, London, as soon as possible, as he is anxious to publish the list of stewards without delay.

Royal Microscopical Society.—The next meeting of the Society will be held on Wednesday, the 16th inst., at 8 o'clock p.m. precisely, when a paper will be read on "The Structure and Affinities of the Genus Porsphæra," by George J. Hinde, Ph.D., F.R.S. There will also be an exhibition by F. W. Watson Baker, F.R.M.S., of a series of slides illustrating the development of an Ascidian.

Crouch End Chemist's Action.—Mr. T. E. Savage, chemist and druggist, was plaintiff in an action for damages, heard at Clerkenwell County Court, on Thursday, December 3, against a builder. One of the defendant's workmen was repairing a chimney of a neighbouring house when a large coping stone fell on to the roof of Mr. Savage's house and broke through, causing £6 worth of damage. Judgment was given for the defendant.

"Prescribing Chemists."—During one week recently three inquests were held by Mr. Luxmoore Drew in the Hammersmith Coroner's Court on young children who had died from pneumonia after being treated by chemists with cough medicines, instead of being taken by parents to medical men. Mr. Luxmoore Drew pointed out the danger of waiting to see what was the effect of the chemist's medicine before summoning a medical men.

The Edinburgh Pharmacy Athletic Club.—The twelfth annual Smoking Concert will be held on Monday, December 14, in the Imperial Hotel, Market Street, Edinburgh. The chair will be taken at half-past eight by Mr. Peter Boa, Honorary President of the club. The committee in charge of the arrangements have succeeded in securing a specially attractive lot of talent, and all who intend being present may look forward to a most enjoyable evening's entertainment.

A Strange Advertisement.—A modern development of "pharmacy" is illustrated in the following advertisement from a Scottish evening paper:—

> FOR SIXPENCE I will send you a copy in English of any Prescription, whereby you save half the cost and know what you are taking. Morrison, 509, George Street, Aberdeen.

The above name and address do not appear on the Register of Chemists and Druggists, 1903.

Drug Club.—The Wholesale Druggists had their usual "Christmas Dinner" at the Café Royal, Regent Street, London, on Tuesday, December 8, Mr. Charles Umney (Wright, Layman and Umney, Limited), the President of the "Drug Club," being in the chair. He was supported by Mr. Arnold Baiss, the newly-elected Vice-President, and the past Presidents, Messrs. F. Harwood Lescher and J. J. Evans. The arrangements for the dinner were made by the Hon. Secretary, Mr. John C. Umney.

International Sanitary Conference.—The labours of the International Sanitary Conference, under the presidency of M. Barrère, were brought to a conclusion on Thursday, the 3rd inst. The conference has combined the conventions of Venice, Dresden, and Paris in one document, and has brought these conventions up to date, taking into account the interests of international commerce and the necessity for rapid communication, and utilising towards this end the most recent discoveries of modern science.

Spirit Duty for Perfumes.—In reply to the Manchester Chamber of Commerce, the Chancellor of the Exchequer has written stating that the provisions of the Finance Act of 1902 did not apply to perfume manufacturers who used such large quantities of spirit, and that when perfumes were exported drawbacks were given equal to the duty, while for home consumption not only home manufacturers, but foreign also had to pay duty. He did not think it would be practicable to abolish the preferential duty on spirit used in manufactures.

An Inauspicious Experiment.—The Municipal Council of Sydney, New South Wales, recently decided on a prosecution, the first of its kind in Australia, in respect of sweet spirit of nitre, alleged to be deficient in ethyl nitrite. The Government Analyst was cross-examined at length with regard to the effect on his analysis of the treatment to which the sample had been subjected between purchase and examination, and in the result the case was dismissed without costs. The Sydney Municipal Council will probably be chary of undertaking sweet nitre cases in future.

Society of Chemical Industry, Manchester Section.—At a meeting of this Section on Friday, the 4th inst., Mr. Oscar Guttmann read a paper on "Progress in the Manufacture of Sulphuric Acid." He had studied the improvements which had been made in chamber plant to see how far they would enable the chamber system to compare with the contact system. He produced tables comparing the cost of the acids made by the two systems. From these tables Mr. Guttmann deduced that it was possible to make 98 per cent. acid at 5s. 5d. per ton cheaper in a chamber plant than by the contact process.

London University.—The results of the recent examination for the degree of Bachelor of Science were published on Friday, December 4. The names of the successful pharmacists appear in another column. The pass-list for external students contains eleven names in the first division and 105 in the second division. Eleven candidates for honours were recommended for a pass. In the pass-list for internal students there are nine names, all of women. Eight internal students and fifteen external students obtained honours in chemistry; two internal and five external students were awarded honours in botany.

Theft from a Chemist's Shop.—At the Crewe Borough Police Court, on December 5, an errand boy was charged with stealing six shillings and sevenpence, the money of Messrs. Russell and Andress, chemists, of Earle Street, Crewe. Prisoner was searched by the police, and the money was found in his possession. He made a voluntary statement to the effect that he had since February last stolen over ten pounds from the till. He had also stolen a large quantity of perfumery, Cuticura soap, pastilles, and other articles from the shop, and had given them away. Prisoner was ordered to receive twelve strokes with the birch.

The "Square" Club. — On Tuesday, December 8, the "Square" Club held another of the successful dinners which now regularly precede the evening meetings of the Pharmaceutical Society in London, being honoured by the presence of the President of the Society as a guest. Mr. F. Bascombe took the chair at the dinner, which was well attended. The report and balance sheet of the year were submitted by the Hon. Secretary, and adopted. It appeared that the expenses of the club had just equalled the receipts. During the evening four new members were elected, making the membership of the club fifty-five. The Committee for the ensuing year consists of Professor Greenish, Dr. W. Harrison Martindale, and Mr. John Humphrey (Hon. Sec.). All communications respecting the club should be addressed to the Hon. Sec. of the "Square" Club, 17, Bloomsbury Square, London.

Three Fires.—On Thursday morning, the 3rd inst., a fire broke out at a drug store in High Street, Heckmondwike. The flames were confined to the rear of the premises, but they were not extinguished before damage to the extent of £200 was done to furniture. The stock was insured, but this was not damaged. Mr. Coates, the proprietor, escaped from the bedroom by getting through the window and sliding down the fall-pipe. A brother, who was staying with him, jumped from the window and fractured his ankle.—The premises of Mr. T. Silk, chemist, Peterborough, had a narrow escape from entire demolition by fire on Monday, the 30th ult. A serious conflagration was only averted by the efforts of the fire brigade.—Mr. J. A. Dale, chemist and druggist, of Hightown, Crewe, sustained considerable loss by a fire which occurred in a store at the rear of his premises at the end of last week. It took the fire brigade nearly two hours to subdue the flames, and a large quantity of stock was destroyed.

School-leaving Certificates.—A conference was held on Friday, the 4th inst., at the Westminster Palace Hotel between the Consultative Committee of the Board of Education and representatives of the following professional bodies:—General Council of Medical Education of Registration, Institute of Actuaries, Institute of Bankers, Institute of Chemistry, Institution of Civil Engineers, Institution of Electrical Engineers, Institution of Mechanical Engineers, Pharmaceutical Society, Royal Institute of British Architect and Society of Accountants and Auditors. One representative of the War Office and one of the Civil Service Commission were also present. The subject of discussion was the desirability and feasibility of the introduction of a system of school-leaving certificates for England. Similar conferences with representatives of universities and of the teaching profession have been held before. The Marquis of Londonderry attended the conference for a few minutes in order to speak on behalf of the Board of Education. Sir W. Hart Dyke subsequently took the chair.

Royal Institution.—The following are among the lecture arrangements at the Royal Institution, before Easter:—A Christmas Course of Lectures (illustrated by lantern slides and adapted to a juvenile auditory) on Extinct Animals, by Professor Ray Lankester; Professor L. C. Miall, Fullerian Professor of Physiology, R.I., six lectures on the Development and Transformations of Animals; Mr. G. R. M. Murray, three lectures on The Flora of the Ocean; Mr. A. D. Hall, three lectures on Recent Research in Agriculture; Professor H. L. Callendar, three lectures on Electrical Methods of Measuring Temperature; and six lectures by the Right Hon. Lord Rayleigh on Physics. During the season 1904 the lectures on Tuesdays and Thursdays will be delivered at 5 o'clock, and the Saturday Lectures at 3 o'clock. The Friday Evening Meetings will begin on January 16, when a discourse will be delivered by the Right Hon. Lord Rayleigh on Shadows; succeeding discourses will probably be given by the Rev. Walter Sidgreaves, Mr. D. G. Hogarth, Mr. Alfred Austin, the Dean of Westminster, Mr. H. Brereton Baker, Mr. Alexander Siemens, Professor W. Stirling, Professor F. T. Trouton, Mr. Henry Arthur Jones, Professor Dewar and other gentlemen.

The Use of Lead Glaze.—Lord James of Hereford has just signed his final award as umpire in the arbitration on the use of lead glaze in the making of pottery. The award, dated November 28 last, establishes a new rule under which it is generally provided that after February 1, 1904, no glaze shall be used which yields to a dilute solution of hydrochloric acid more than 5 per cent. of its dry weight of a soluble lead compound calculated as lead monoxide when determined in a manner prescribed by the rule. The use of a glaze which does not conform to the above-mentioned conditions is, however, to be permitted after due notice to the inspector for the district, subject to the adoption by the manufacturer of a new schedule of compensation to employees who may be suspended on being certified as suffering from lead poisoning, and subject also to periodical examination of the employees by the certifying surgeon. The prescribed method of testing the glaze is as follows:—"A weighed quantity of dried material is to be continuously shaken for one hour at the common temperature, with 1,000 times its weight of an aqueous solution of hydrochloric acid containing 0·25 per cent. of HCl. This solution is thereafter to be allowed to stand for one hour and to be passed through a filter. The lead salt contained in an aliquot portion of the clear filtrate is then to be precipitated as lead sulphide, and weighed as lead sulphate."

Pharmaceutical Examinations in Australia.—From October 28 to 30 an important conference was held in Melbourne, when delegates attended from the Pharmaceutical Societies of the various States of Australasia. On the first day of the Conference various resolutions were adopted with regard to the preliminary examinations. Later, the desirability was affirmed of an intermediate examination, which should deal mainly with the principle of pharmacy and dispensing, and should include also pharmaceutical Latin, and questions on the doses of the Pharmacopœia. It was stated that this examination might well be taken during apprenticeship or afterwards. With regard to the final examination, it was decided at one sitting that "failure in one subject should be failure in all," but this vote was reversed the next day. Other resolutions adopted were to the effect that the final qualifying examination should consist of practical pharmacy, comprising all subjects previously covered by the examination as applied to pharmacy and the dispensing of prescriptions; also that in the opinion of the Conference a selection of questions, with the value of each attached, should be given in each examination paper. It was resolved that in each State it should be required of candidates that they be thoroughly conversant with the Poisons Act in the State in which they are examined. It was affirmed as desirable that a pass certificate should be endorsed "with honours" when the candidate obtained 80 per cent. of the maximum marks in all subjects. The alterations will probably come into force not later than January, 1905.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. R. Robertson has bought the business of Mr. J. T. Wright, at 105, North High Street, Musselburgh.

Mr. J. Horrell has been elected a member of the Committee of the newly-formed Chamber of Commerce at Broadstairs.

Mr. W. Forgie, chemist, Falkirk, has bought the business of Mr. A. N. Mirrilees, Crow Road, Partick. Mr. Mirrilees is going out to South Africa.

Mr. G. Taylor, chemist, Muirkirk, has purchased the business of Mr. D. Simpson, chemist, High Street, Glasgow. Mr. Simpson intends to confine his attention to his Motherwell business.

Mr. Duncan Gair, pharmaceutical chemist, who has recently studied at the Goldsmiths' Institute, has passed the B.Sc. examination of London University, with honours in chemistry.

Dr. Morris W. Travers, Assistant Professor of Chemistry in University College, London, has been appointed Professor of Chemistry in University College, Bristol, in succession to Professor Young.

Mr. W. Dennis, of Grant Street, Jarrow, has issued his annual for 1904. The annual takes the form of an illustrated almanac, with a number of advertisements. A page is devoted to poisons and antidotes.

Mr. Harold Deane, now Demonstrator in the chemical laboratories of the School of Pharmacy, who was Senior Bell Scholar in 1899, and subsequently took several medals and prizes at the "Square," has passed the B.Sc. Examination of London University. Mr. Deane is a grandson of the late Mr. Henry Deane, some time President of the Pharmaceutical Society.

Mr. A. E. Breeze, chemist and druggist, Birkenhead, has taken a prominent part in opposing an application of the Birkenhead Corporation for sanction to borrow a sum of over £25,000 for the purpose of town-scavenging. At a Local Government Board inquiry on Thursday, the 3rd inst., Mr. Breeze, as Honorary Secretary of the Birkenhead Traders' Council, led the opposition to the Corporation's application.

TRADE NOTES.

Reduction in Price.—The Vinolia Co. advise us that owing to the demand for their Bouquet Vinolia Soap, they have reduced the price from 10s. 6d. to 9s. 6d. per dozen boxes of three tablets, subject to usual discounts. As this line retails at 1s. per box, showing a profit of about 30 per cent. to the retailer, it is worth the attention of readers.

Seasonable Almanacks.—A very complete and interesting little almanack is supplied to chemists and druggists by Mr. J. Davis, 90, Pepys Road, New Cross, S.E. It contains a lot of useful information in concise and readable form, and is the sort of thing customers are sure to preserve. Readers should write for a sample almanack and particulars as to terms.

Menthol Cones.—A very ingenious idea has been put into practice by Messrs. Shirley Bros., Limited, Whitecross Works London, S.E. The "Anti-Waste Unbreakable Menthol Cone" is a novel contrivance which permits of the menthol cone being unscrewed from the little pocket case and kept in a separate box. By this means the empty cases can be exposed in a hot window and the cones screwed in as sold. This article, which is made in two sizes, deserves attention, whilst the prices are very moderate.

Digestive Products, etc.—For pepsin and products of a similar nature, the firm of Messrs. Armour and Co., Limited, 46A, Holborn Viaduct, London, E.C., needs no introduction to readers of the *Pharmaceutical Journal*. One drachm of Armour's glycerole pepsin contains 6 minims of 3,000 test pepsin, is a perfect pharmaceutical preparation, and is miscible with all liquids compatible with solution, and the pepsin so presented retains its activity. Glycerole pancreatin is another fine product, 10 minims of which are equal in digestive power to 1 grain Armour's pure pancreatin. Space may be found for an examination of other preparations of this firm in a later issue.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

The Drug Sales.

LONDON, THURSDAY, DECEMBER 10, 1903.

To-day's drug sales were the last of the year, and almost the slowest; bids came with reluctance, buyers probably holding back in view of the approaching stock-taking. A fair portion of the offerings, comprising old and new goods, were offered without reserve. The catalogues numbered fifteen. There is no particular feature to record. The lower price paid for the three cases of Menthol has in no way affected the private market in this article, and is no criterion of its value. Senna was in fair supply and, as usual, sold with some competition; on the whole, perhaps, the prices paid were rather lower than last rates. The falling off in quality would seem to point to an end of the crop. Cardamoms were dearer for the better qualities. The offerings of Jamaica Honey were very small, and were bought in. A fair quantity of Dragons' Blood and Gum Benjamin was sold without reserve. In the private market things are exceedingly dull. Quicksilver has been reduced in price, but at present there is no change in Mercurials. As regards Opium, the market looks firmer. Considerable business has been done in Persian Opium, and something like 80 cases have changed hands this week at 10s.; bids of 9s. 6d. have been made for lower quality, but so far no business has resulted at this price, holders not being disposed to sell. The Smyrna market has been active, and about 180 cases have been sold this week, mostly for America, at late rates. There is no change in Morphine or Codeine. It is stated that a further reduction in the price of Cocaine is not probable, in view of the high cost of the crude drug. Fancy prices for Cod-liver Oil are still maintained, but quotations from Norway seem rather easier. The Peppermint Oil position will be found below.

ALOES.—Cape realised from 47s. to 49s. 6d. for fair hard bright and 46s. 6d. for hard black. Good liver Curaçoa sold at 35s., fair liver at 22s. 6d. to 28s., according to quality, ordinary dark liver at 14s. 6d. to 18s., and capey at 20s. to 22s. 6d.

BALSAM TOLU.—Drossy sold at 9d.; fair quality bought in at 1s. 2d.

BUCHU LEAVES.—Small round greens sold at 9d.

CASTOR OIL—Catalogued as "tins rusty," was sold for 2¼d.

CARDAMOMS—Were about 2d. a lb. dearer for the better qualities; other kinds were about full up. Decorticated realised from 1s. to 1s. 1d.

CASTOREUM.—Good dry thirds were disposed of at 26s. 6d.

CASSIA FISTULA.—Fourteen bales sold at 30s. per cwt.

COCA LEAVES.—For green Ceylons 1s. 2d. was paid.

DRAGONS' BLOOD.—For reed, £9 was paid; for lumps offered without reserve £5 2s. 6d. to £7 17s. 6d. was paid, according to quality.

EUCALYTUS OIL.—Ten cases were disposed of, without reserve, but fair quality was held at 1s. 3d.

GAMBOGE.—Good fair pipe was held for £16.

GUM BENJAMIN.—Sumatra good seconds sold at £8 7s. 6d., fair seconds at £6 12s. 6d. to £6 17s. 6d. without reserve; ordinary thirds at 72s. 6d. to 77s. 6d., also without reserve; and glassy Penang at 80s.; common ordinary Palembang was withdrawn at 20s.

HONEY—Was in small supply. The small offerings of Jamaica were held at late rates. New Zealand was bought in at 55s., the price being 47s. 6d.

INSECT FLOWERS.—92s. was paid for fair closed.

IPECACUANHA.—Three bales Rio sold at 5s. 1d. to 5s. 3d.; remainder bought in at 6s. For Minas 5s. 3d. was paid, and for Cartagena 4s. 9d., but two bales of this kind were knocked down at 4s. 2d. "subject."

KOLA NUTS.—Good West Indian realised 5½d.

MENTHOL.—3 cases Kobayashi unworked were disposed of, without reserve, at 18s. 6d. to 18s. 9d. The price privately is 21s.

RHUBARB.—A few cases of Shenshi were disposed of at 1s. 4d. to 1s. 6d.; flat high dried was held for 1s.

SARSAPARILLA.—Lima sold at 10d., and Jamaica at 1s. 1d.

SENNA—Sold with good competition, but, if anything, were slightly off in price. The falling-off in the quality seems to point to an end of the crop. Alexandrian pods, offered without reserve, realised 5¾d.; broken leaf, 3d.; and siftings, 1¾d.

WAX—Was slow of sale; a few lots Jamaica sold at £7 12s. 6d.

General Markets.

ACID CITRIC.—1s. to 1s. 0½d. per lb.

ACID TARTARIC—Firm. English, on the spot, 1s. 1d.; foreign, 1s. 0½d.

ARROWROOT.—St. Vincent did not sell at the spice sales, all the offering being bought in.

BISMUTH CARBONATE.—8s. 1d. per lb.; subnitrate, 7s. 4d.

BLEACHING POWDER.—English, £5 5s.

BORACIC ACID.—Crystals, 22s. 6d.; powder, 24s. 6d.

BORAX.—Crystals, 13s. 6d. to 14s. 6d. per cwt., according to quantity; powder, 15s. 6d. to 16s. 6d.

CLOVES.—Zanzibar were cheaper at Wednesday's sales; 50 packages sold at 7d. for fair. Privately the market is firm.

COCAINE.—The Hydrochloride is now quoted at 11s. 9d. per ounce for quantity.

COCONUT OIL.—Ceylon, spot, £25 10s.; Cochin, spot, £30 5s.

CODEINE.—8s. 11d. per oz. for the pure alkaloid, 7s. 11d. for the muriate and sulphate, and 7s. 1d. for the phosphate.

GINGER.—The demand at the spice sales was slow; 12 packages of Cochin sold at about late rates.

GLYCERIN.—68s. per cwt. for ½-ton lots.

IODIDE OF POTASSIUM.—The convention price is unchanged at 8s. 9d. per lb.

IODINE.—9s. 9d. to 10s. per lb. for the resublimed, according to quantity.

IODOFORM.—11s. 8d. per lb. for the pure crystals or powder.

CARBOLIC ACID.—Crystals, 39° to 40°, 5d.

CASTOR OIL.—Belgian firsts, spot, £20; Hull made firsts, £19 15s.

MERCURIALS.—Calomel, 2s. 8d.; corrosive sublimate, 2s. 4d.; red precipitate, 2s. 11d.; white precipitate, 2s. 11½d.; mercuric sulphate, 2s. 4d. per lb.

MORPHINE.—4s. 6d. to 4s. 8d. per oz. for the hydrochloride.

OPIUM.—About 80 cases of Persian have been sold at 10s.; bids of 9s. 6d. have been made for lower quality, but no business has resulted so far. About 180 cases Smyrna have been sold at late rates, mostly for America. The market looks firmer.

OXALIC ACID.—2⅝d. to 2⅞d., delivered free London.

PEPPERMINT OIL.—American comes decidedly dearer from New York at about 15s., but on this side there seem to be second-hand sellers of H.G.H. at below the New York parity, but all the agents for the tin oil have raised their prices, and now ask from 11s. 6d. to 12s.

PIMENTO—Was lower at the auctions on Wednesday; fair, part greyish, sold at 3⅝d. to 3¾d. "without reserve."

QUICKSILVER—Lower at £8 5s. The following is abstracted from Mr. Alexander S. Pickering's report:—Imports: November, 1903, 446 bottles; 1902, 616 bottles; January-November, 1903, 34,881 bottles; 1902, 33,169 bottles; exports: November, 1903, 948 bottles; 1902, 1,160 bottles, January-November, 1903, 17,299 bottles; 1902, 18,623 bottles.

QUININE—Is extremely quiet, March delivery being quoted at 1s. 0⅝d., with but few buyers.

SHELLAC.—The spot price is tending lower, but little business has been done.

PATENTS AND TRADE MARKS.*

New Patent Applications.

SKIN CREAM FOR ECZEMA (No. 17,950 of 1903).—C. Bridges, Wrotham Water, Wrotham, Kent. This cream is composed of the following ingredients:—Lard, ¼ lb.; sweet oil, 1 oz.; glycerin, 1 oz.; milk of sulphur, 1 oz.; spirits of camphor, ½ oz.; new-laid eggs, 5 oz.; white wax, ½ oz.; attar of roses, 4 grains. These are thoroughly mixed and laid on the diseased parts of the skin.

MANUFACTURE OF A NEW CHEMICAL BODY (No. 18,279 of 1903).—G. B. Ellis, 70 and 72, Chancery Lane, London. (A communication from Chemische Fabrik von Heyden Aktien Gesellschaft, Radebeul, near Dresden, Saxony.) The inventors have found that by acetylising para cresotinic acid a product is obtained that acts medicinally in a similar manner to acetyl salicylic acid, but which has not the undesirable by-effects on the heart, or at least has them in a considerably less degree. By treating para cresotinic acid with acetylising agents a new body is obtained, hitherto unknown, corresponding to the formula $C_6H_3(CH_3)$ $(OCOCH_3)$ COOH (1:4:5) or $C_{10}H_{10}O_4$. One example of the method of producing the new compound is as follows:—2 parts of para cresotinic acid and 3 to 4 parts of acetic anhydride are kept for some time at boiling temperature, using a reflux condenser. The solution, on cooling down, solidifies to a white crystal magma, which is filtered, washed with alcohol, and recrystallised from alcohol. Other examples are given.

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and 'Patent Notes for Inventors' free on application.

APPLIANCE TO PERMIT INSPECTION AND TREATMENT OF BANDAGED PARTS WITHOUT REMOVING SUCH BANDAGE (No. 20,081 of 1903).—J. Otterbein, Eichstetten, Baden, Germany. Consists in the method of making a window in the bandage immediately over the wound. For this purpose an open box frame is set on bolsters—above, and so as to surround the wound—on the middle layer of the bandage, and is tightly conjoined with such bandage by being bound across its top by an extra bandage layer. A second open box frame is then fitted over and pressed down upon the first box frame, thereby holding all parts of said bandage between such two frames in a state of rigid tension which permits the snipping or cutting out of that part of the bandage passing across the top of the first box frame without any loosening of the bandage as a whole. In cases where the bandage employed must be kept wet, to the water tight material employed for this purpose, at a spot in the bandage opposite the window, a socket piece is attached combined with a union, and a rubber tube whereby any superfluity of liquid applications will automatically drain away.

Note.—Opposition to the grant of any of the above-mentioned patent applications must be filed at the Patent Office, on or before January 4, 1904.

TREATMENT OF SEPTIC AND OTHER DISEASES (No. 25,918 of 1902).—R. Scott, 8, Graingerville North, Newcastle-on-Tyne. When the whole body is to be disinfected the patient is placed and treated in a hermetically sealed chamber, into which a disinfectant, in a gaseous or other desired condition, is forced by means of a pump or other suitable appliance, the pressure causing the molecules of the disinfectant to permeate the body; or the disinfecting gas may be introduced into the chamber, and allowed to diffuse, atmospheric air, with, in some cases, an addition of oxygen, being afterwards pumped in. Portions of the body may be treated by introducing an inlet tube at a suitable position and an outlet tube opposite same, and the disinfectant, mixed with air or not, is caused, by pressure, to permeate the desired part. In a modification a suction pump is applied to the outlet tube and serves to gradually draw the disinfectant through the desired part. Suitable apparatus for carrying out the invention is described and claimed.

Note.—Opposition to the grant of the above patent application must be filed at the Patent Office, on or before January 11, 1904.

New Trade Mark Applications.

"**MICROZONE**" ("Micro" disclaimed), for a sanitary disinfectant powder, by A. Robey, Bridge Field, Kegworth, near Derby. 258,051.

"**MULYPTOL**," for chemical substances used for agricultural, horticultural, veterinary and sanitary purposes, and for chemical substances used in medicine and pharmacy, by Australian Eucalyptus Chemical Co., 19, Mansion House Chambers, Queen Victoria Street, London. 258,262-3.

"**TONOIDS**" ("Tone" disclaimed), for chemical substances prepared for use in medicine and pharmacy, by A. Bishop, Limited, 48, Spelman Street, London. 256,822.

"**PEPTA**," for a medicine for human use, by R. H. Mushens, 6, Lambton Street, Sunderland. 257,661.

"**VOLFANGO**," for chemical substances prepared for use in medicine and pharmacy, by C. B. Winsall, 164, Willmeadow Road, Catford, London. 258,060.

"**SANGUINOSA**" (elephant device), label (device only claimed) for a medicine for the blood, by Van Geelkerken and Co., Limited, 79, Mark Lane, London. 257,843.

"**VARO**," for a medicinal preparation for human use, by Berliner Hygiene Gesellschaft mit beschränkter Haftung, Artillerie Strasse 2, Berlin. 258,164.

Woman standing on snake (label), for an ointment for human use, by T. Reekie, 27, Streatfield Street, Limehouse, London. 258,113.

"**VERSIPLAC**," for philosophical instruments, scientific instruments, etc., by L. Laurance, 31, Aldermanbury, London. 257,864.

"**ALPOL**" ("Alp" disclaimed), for perfumery, etc., by Southall Bros. and Barclay, Limited, 19-21, Lower Priory, Birmingham. 258,283.

"**BABY BUNTING**," "**CRADLE**," both for perfumery, by Joshua Margerison and Co., White Windsor Soap Works, Preston. 258,467 and 258,469.

Note.—Opposition to the registration of any of the above-mentioned Trade Marks must be filed at the Patent Office on or before January 2, 1904.

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

Pharmaceutical Unity.

Mr. C. T. Allen's paper reopens many interesting points familiar to those who follow the correspondence columns of your paper week by week. I can only hope it will not share the fate of some of its predecessors. Considered from a general point of view, it involves several difficult problems. Some are beyond the control of pharmacists, so far as their direct influence is concerned. Much may be eventually accomplished, however, by the force of example, and I hope we shall hear more from Mr. Allen. The unsatisfactory attitude of medical men towards pharmacists as a class is due to varying causes, in which the dread of rivalry and the commercial instinct are not hidden by any means. I do not think we can compare the relative positions with those of other countries, because in most cases the State has decided the question, and, until the State controls the position for British pharmacists, they must face matters as they stand. This is a wide subject, and may be viewed from many aspects. Whether medical men can be blamed for prescribing physiologically tested drugs in an elegant form in preference to the less palatable preparations included in the Pharmacopœia, is doubtful. The question becomes purely a matter of competition. Pharmacy cannot stand still. The pharmacist may have the ability, but he has not the plant. The theory of "every man his own doctor" is undoubtedly spreading, and if the public will take more medicine, no one surely can be a better guide than the pharmacist. With the Pharmacy Act to back him, he can prevent the amateur from taking mercuric chloride instead of calomel in a "rotoid," and, since people will read periodicals, the housewife from swallowing a mixture of lime and vitriol for lemonade. The increasing demand for remedies for defined simple ailments should become the pharmacist's opportunity. He clearly has stronger rights than the unqualified speculator or the inveterate penny-a-liner with no practical experience. On the desirability of union—the vital point in Mr. Allen's paper—it would be impossible to lay too much stress. It is not going too far to say that unless pharmacists agree to unite they will soon be snuffed out altogether. It we consider, in the first place what union would do for them in the direction of reform, there would come first of all the resolution to be true to the instincts of their calling—to live as pharmacists and act as pharmacists—(if this should prick the consciences of chemists who "put the work out," so much the better). Having accomplished some minor reforms, they might pass on to such schemes as (*a*) selling only proprietaries emanating from qualified sources; (*b*) a workable scheme for buying in combination and thus meeting general competition; (*c*) the formation of a manufacturing association for the production of "rotoids" superior to foreign. As a stimulus in the direction of reform and consequent union, it happens that a unique opportunity lies at our feet in the shape of the Pharmacy Bill. As a measure, the grand thing about it is that it is ready. It has got to pass, and what is more it has got to pass *in toto!* Are we to go to Parliament as a Society divided against itself? I am confident that in the majority of cases no dissentient would remain one a day longer if this point were seriously considered. Then why not seriously consider it? It is grave enough, and surely, now the ground is cleared for action, it should be an easy matter to send a guinea to Bloomsbury Square, and having done so, perhaps just a flicker of interest may spring up, then a steadier flame, and then a strong determination to join in the fight and win at all costs.

Penzance, December 8, 1903. Walter H. Keen

I am certain the article by Mr. Chas. T. Allen, and the letter by Mr. A. E. Deed have been read with pleasure by all members of the Pharmaceutical Society. I think something ought to be done to keep in touch with those outside the Society, so that they may be brought to see that it is their duty both to themselves and their fellow craftsmen to become members. While attending college, before going forward for the Minor, I found that the great majority of the students looked upon the Society as existing not for their benefit but the opposite. When the Society was discussed at any time the general feeling was that the examination fee was the last that would be paid into the funds of the Society, and even that under protest. When a student ultimately qualifies after, perhaps, one or two failures, a hardness has entered his heart which is difficult to expel, in fact, he looks upon the Society as the cause of all his late troubles. He receives his certificate, and the Society knows him no more. If these men were occasionally visited by an official of the Society and the matter talked over in a friendly way, I see no reason why all registered chemists might not become members.

Edinburgh, December 8, 1903. Alexander Walker,

The Benevolent Fund.

When we hear that the members of the Benevolent Fund Committee are having an anxious time considering how they may fill an empty exchequer, I think we might now, with confidence, appeal to our lady friends to help us to put this most worthy Fund on a sound financial basis. We were recently informed that over £12,000 were raised as the result of a bazaar held on behalf of the United Kingdom Travellers' Benevolent Fund. Could our ladies not follow this example?

December 8, 1903. "Country Cousin" (262/18).

The Ash of pecacuanha.

In Messrs. Chattaway and Moor's paper on the "Ash Yield of Crude Drugs," reprinted at page 806, not only is the name referred to under the section Ipecacuanha Radix wrong, but the date and the statement also are both misquoted. The reference should be to *P.J.* [4], **16**, 387, and the standard suggested 4 per cent., and not 5 per cent. In my paper I mentioned that in two cases only did the ash reach 5 per cent., and the descriptions applied to those samples were :—No. 1, poor, small, dusty Cartagena root; No. 2, very dusty and mouldy Cartagena root. I am still of opinion that samples of the drug to which such descriptions apply should be excluded by fixing the ash figure at not more than 4 per cent.

London, December 9, 1903. A. G. C. Paterson.

The Pharmacy of Phenol.

Mr. J. C. McWalter appears to have a very poor opinion of the present-day chemist as a dispenser, but does not add much to his store of knowledge by telling him how and of what strength those solutions should be prepared. I would therefore say that the usual strength of the carbolic oil made use of by medical men is one in twenty, or a 5 per cent. solution, and the carbolic lotion one in forty, or a $2\frac{1}{2}$ per cent. solution. But as these solutions are usually prepared with the liquefied phenol, which contains 10 per cent. of water, the quantity of phenol to be used is found by the simple rule of three sum $\frac{60 \times 110}{100} = 66$ minims; 66 minims of liquefied phenol, then, made up into ℥iiss. with olive oil, would form a one in twenty, or a 5 per cent., solution, and 66 minims of liquefied phenol made up into ℥v. with distilled water would form a one in forty, or a $2\frac{1}{2}$ per cent., solution. Glycerin would have a similar action to the olive oil.

Garn, R.S.O., December 8, 1903. John Williams.

The Vitality of Seeds.

With reference to the interesting subject raised by your correspondents concerning the vitality of seeds, so much has to be assumed, and the evidence of age is so slender as to render the conclusions inconclusive, more particularly with regard to the instance mentioned by Mr. G. Welborn; and especially so in view of the recent investigations at Kew. Nevertheless, it recalls to memory the Andersonian Egyptian mummy pea which General Anderson collected nearly thirty years ago in the land of the Pharaohs, and said to have been taken from an embalmed corpse. Those peas were supposed to be from 2,000 to 3,000 years old, and out of three peas two plants were successfully raised. It was remarked at the time that it differed from all other varieties in peculiar characteristics and in habit; and, although edible, it was of an unpleasant flavour, resembling somewhat grey field peas. J. Poisson (*Pharm. Journ.*, **69**, 336) cites a few instances of prolonged vitality of seeds, and estimates a period of thirty or forty years as the duration of the hypnotic condition. Naturally, it would be much more interesting if one were able to determine correctly the age of the seeds in question. Personally, I am able to testify to the fact that seeds retain their vitality for the modest period of at least sixteen years. In the summer of the present year I raised four plants of *Helianthus annuus* out of six seeds sowed, the age of the seeds being, without a doubt, sixteen years. Of the four plants produced, two attained a height of nearly eight feet; the other two were dwarfed and miserable specimens. True, the age of the seeds is not great, but it is something to establish a definite time. As I have other seeds of the same age, it is my intention to experiment with them at intervals of seven, fourteen, and twenty-one years. To anyone interested in the subject I would be pleased to send a few specimens.

Lewisham, December 5, 1903. Graham Bott.

The Medicine Stamp Difficulty.

I beg to congratulate the Pharmaceutical Council upon having at last decided to interview the Inland Revenue Commissioners, and trust their joint deliberations may prove satisfactory. Had the Council seen their way before to approach that august body, it would no doubt have saved a great deal of the uncertainty that has prevailed since the two last judicial decisions. I would strongly urge upon the Council the desirability, in the interests of the public, that ailment names, as well as organ names, should be exempt from duty, provided there is no recommendation. Take, for instance, "antibilious," "indigestion." "rheumatic," "toothache," names that are in constant use amongst the poorer classes, who only require small quantities of the drugs implied. Such medicines, according to the present rule, can only be sold if made according to some recognised formula. A further extension of time is certainly needed, in any case, as, in consequence of the numerous changes, it has been utterly impossible to have labels printed to meet the altered requirements. I consider that the association that has created this difficulty should have taken some further action, but they appear to have been content to rest on their so-called laurels (?).

Peckham, December 8, 1903. F. W. Sandy.

⁂ Our correspondent will notice that an extension of time has been notified to Mr. Bremridge (see p. 876).—[Ed. *P.J.*]

Belladonna Plasters.

There can be no doubt that since the introduction of the root extract into the manufacture of this plaster instances in which serious discomfort, and even toxic effects, follow upon its application have been far too numerous, and it is a question deserving of consideration as to whether its continuance in the Pharmacopœia can be justified. Some years ago—about 1890—a medical man insisted that the plaster which I had supplied contained some irritant, inasmuch as the patient to whom it had been applied was suffering from "vesication of a virulent type," and that belladonna plasters had never before affected her in such a manner. Two other plasters made from the same piece of mass, on the same skin at the same time, and worn by another lady, had at the end of ten days given rise to no untoward symptoms. It was thought by some that the modification of the formula in the 1895 Pharmacopœia would obviate these troubles; but experience has shown that occasionally the same results are shown. On Friday last a medical man called in to report that a patient to whom I had supplied two breast plasters was in great suffering, that the appearance of the breast was as though cantharides or some other vesicating drug had been incorporated in the plaster, and that pigmentation had taken place, both in the parts to which the plasters had been applied and in several other parts of the body, as a consequence. He has been in again this morning, after an interval of four days, and reported that although the inflammatory symptoms have subsided, the pigmentation remains, and that he is of opinion that it will be a permanent disfigurement. I may mention that these latter plasters were factory made, with an india-rubber basis, and were taken from among two dozen which were delivered at the same time, and that, although several others have been sold from the same batch, no other complaints have been so far received. I should add that the doctor has seen over twenty years' practice, and, although he has known erythema to result from the use of plasters, he has never before seen effects like in the present case. Query: Is it idiosyncrasy of the patient, is it lack of uniformity in the composition of the plaster, or is it possible that some decomposition occurs during the heating and spreading process which gives rise to the production of an undiscovered irritant?

Manchester, December 7, 1903. Harry Kemp.

In reply to "Tropin" the present official Emplastrum Belladonnæ has been the cause of my getting into trouble on several occasions, especially when it has been applied to the breast. I consider the present form is too strong when used for the purpose mentioned. A few days ago a medical gentleman asked me if I could suggest a modification of the form for breast plasters. I proposed to try equal parts of Emplastrum Belladonnæ and Emplastrum Saponis.

Southsea, December 8, 1903. G. Mills.

Replying to the inquiry of "Tropin" in this week's *Pharmaceutical Journal*, I may say that the sale of porous belladonna plasters, manufactured by a firm of the highest repute, caused me considerable trouble and anxiety a few years ago. Two customers of mine, at about the same time, purchased, each, one of such plasters at my establishment. The result of the application of the same was, in the first case, so serious that the attendant physician advised the attendance of a consultant physician, and in the second case an extensive sore, together with every symptom of belladonna poisoning, was caused. Happily, life was saved in each case, but a claim for damages in each case had to be satisfied ere the matter dropped. Since then I have done my best to discourage the sale of belladonna plasters of all kinds, as I consider the official plaster much too strong for general use.

Bourne, December 5, 1903. "Jay" (261/15).

A Request for Information.

In Rutherford's 'Clinical Lectures,' 1749, I find frequently mentioned "Tinct. antiph.," also "Mead's specific" and "Rad. gramin.," and have been unable to find formulæ for the two first, and am doubtful about the last. Perhaps you or some of your readers may be able to give me the information.

December 4, 1903. "H. A. D." (102/9).

The Students' Columns.

Please reserve for me a copy of the 'P. J. Form.,' for which I enclose P.O. for 5s. 6d. Kindly accept my best thanks for all you have done lately, not only for chemists, but also for students. The articles in the Students' Columns have been of the greatest use to me, as subjects have been treated of therein which are generally overlooked by text-books. Thanking you once more,

December 8, 1903. "H. J. R." (261/49).

Adulteration of Radium Salts.

Kindly allow me to monopolise a few lines of your valuable space to fully endorse Mr. Tyrer's suggestion that a guarantee as to activity should be given with radium bromide on selling the same. A few simple tests will enable the buyer to convince himself as to the class of goods he is purchasing, and they can be applied then and there at the time of making the purchase.

London, December 10, 1903. W. H. Martindale.

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Powdered Drugs (T. G. W.—102/27).—(1) The articles are being reprinted. (2) About 240 diameters in most cases.

Dispensing Lessons (T. W. J.—102/19).—Five shillings an hour would be a moderate fee if all materials are provided.

Dispensing Difficulty (R. O. H.—260/39).—There must be some mistake, as free iodine is not likely to be liberated unless some other ingredient is present than those you mention.

Book on Sewage (T. G. W.—102/28).—'The Purification of Sewage by Bacteria,' by Arthur T. Martin, published by the Sanitary Publishing Company, Limited, 5, Fetter Lane, E.C. (Price 6d.)

English Chemists in Hong Kong (H. L. C.—103/13).—Messrs. Fletcher and Co., Messrs. Watkins and Co., Messrs. A. S. Watson and Co., and Messrs. Dakin, Cruickshank and Co. Letters addressed to these firms, with the words "chemists and druggists" added, would probably reach their destination.

Glyceroles (H. J.—102/35).—Try the following and report results:—(1) Pepsin (3,000 test), 2 ounces; hydrochloric acid, 1 fl. drachm; distilled water, 5 fl. ounces; simple elixir, ½ fl. ounce; glycerin, sufficient to make 1 pint. (2) Pancreatin, 2 ounces; distilled water, 5 fl. ounces; simple elixir, ½ fl. ounce; glycerin, sufficient to make 1 pint. The simple elixir is prepared by mixing tincture of orange, 1 fl. ounce, and syrup, 6½ fl. ounces, with sufficient distilled water to make 15 fluid ounces.

BIRTHS.

Kerruish.—On December 3, at 22, Prospect Terrace, Douglas, I.M., the wife of H. Kerruish, M.P.S., of a son.

Umney.—On December 4, at Gordon House, Walton-on-Thames, to John Charles and Constance E. Umney—a son.

MARRIAGE.

Lee—Strawson.—On December 5, Henry Cuthbert Lee, pharmaceutical chemist, to Fanny, daughter of T. S. Strawson, of Birkenhead.

DEATHS.

Bastick.—On December 2, William Bastick, Pharmaceutical Chemist, Buckingham. Aged 85. Mr. Bastick, who had been a member of the Pharmaceutical Society since 1844, was at one time a member of the Board of Examiners, but resigned from that body in 1853. It will doubtless be remembered by the elders in pharmacy that, shortly after the passing of the 1852 Act, Mr. Bastick was associated with the late Mr. W. Dickinson in a controversy as to the legal right of the Council to admit to membership chemists and druggists who had not passed the Society's examination, and their right to assume the title "Pharmaceutical Chemist." Mr. Bastick had resided at Buckingham for about twenty years, and had been a member of the Town Council, an Alderman, and Justice of the Peace for both the borough and the county.

Curtis.—On December 3, Robert Curtis, Chemist and Druggist, Sandown. Aged 81.

Mathie.—On December 7, an adjourned inquest was held at Brighton concerning the death of William Mathie, Chemist and Druggist, of Glasgow. Mr. Mathie was found unconscious on a seat on the Esplanade, and when the inquest was first opened the body had not been identified. The stomach had since been analysed, but there were no traces of poison, and it was stated that the deceased was virtually in a state of starvation, and a verdict was returned to the effect that death was due to starvation and exposure. The body was identified by a brother from a photograph.

Calendar for the Week (Dec. 13—19, 1903).

Days of		Events of the Week.	Sun	
M	W		Rises	Sets.
13	S	**Third Sunday in Advent.**	7.58	3.49
14	M	Dewsbury and District Chemists' Association, at 8.30 p.m.	7.59	3.49
		Edinburgh Pharmacy Athletic Club, at 8.30 p.m.—Smoking Concert.		
		Royal Photographic Society, at 8 p.m.—"Some Points connected with Landscape Three-Colour Photography," by Sir W. Abney.		
15	Tu	Hartlepools and District Chemists' Association, at 8.30 p.m.	8.0	3.49
		School of Pharmacy Football and Athletic Club, Crown Room, Holborn Restaurant, at 8 p.m.—Smoking Concert.		
16	W	Chemical Society, Burlington House, at 5.30 p.m.	8.1	3.49
		Liverpool School of Pharmacy, Victoria Restaurant, at 7.30 p.m.—Smoking Concert.		
		Sheffield Pharmaceutical and Chemical Society, at 9 p.m.		
		Western Chemists' Association (of London), at 9 p.m.		
17	Th	Bournemouth and District Chemists' Association, at 8.30 p.m.	8.2	3.49
		Burnley and District Chemists' Association, at 8.30 p.m.		
		Chemists' Assistants' Association, at 8.30 p.m.—Social Evening.		
		Glasgow and West of Scotland Pharmaceutical Association, at 9.15 p.m.		
		Linnean Society, Burlington House, at 8 p.m.—"On the Docoglossa; A Study in Evolution," by H. J. Fleure.		
18	F	●New Moon, 9.26 p.m.	8.3	3.49
		School of Pharmacy Students' Association, at 5.30 p.m.—Debate.		
19	S	Football.—Metros *v.* St. John's.	8.4	3.50

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Allan, Allison, Anderson, Andrews, Armitage, Ashfield, Ashwell, Aspinall, Averill, Barbin, Barker, Barrat, Bartlett, Battle, Bayley, Beales, Bell, Bice, Billinton, Blackbourn, Blockley, Bonn, Boor, Botham, Bott, Bowes, Bowman, Brackenbury, Branson, Brassington, Breeze, Brewster, Broad, Browse, Bryars, Buck, Buckley, Busell, Butcher, Butler, Callander, Calvert, Campbell, Carr, Carteighe, Cattell, Chesterton, Clark, Cleave, Cook, Corder, Coulson, Craig, Cran, Critchley, Cromwell, Crooke, Crosby, Cross, Cullen, Davies, Davis, Dawson, Day, Daykin, Dean, Deck, Delve, Dennis, Denton, Dewson, Dick, Dobson, Dodsley, Douglas, Druce, Duncan, Elliott, Ellis, Embleton, Emmerton, Evans, Ewing, Fairweather, Fawn, Feaver, Fenn, Fentiman, Finlayson, Finnemore, Ford, Forster, Fortman, Fox, Francis, Fraser, Geeves, Gerrard, Glyn-Jones, Goldthorpe, Golightly, Goodyear, Gossling, Griffiths, Gwinn, Hagon, Hall, Handford, Hardie, Hardy, Harriman, Harris, Harrison, Harry, Haslegrave, Hayes, Haynes, Hazelby, Hefford, Hemingway, Hennerton, Hewitt, Hill, Hinches, Hislop, Hodgson, Hogg, Holden, Holding, Hole, Hooper, Hornby, Hunt, Husband, Hutton, Illsley, Ingham, Innes, Isaac, Jackson, James, Jenkins, Johns, Johnson, Jones, Judge, Keen, Kemp, Kerr, Kidd, Kirkby, Knight, Knott, Lance, Laverack, Lee, Leech, Leicester, Leighton, Lemmon, Lenton, Levett, Lloyd, Long, Luff, Macfarlane, McLagan, Macpherson, Male, Mann, Manning, Mason, Masterman, Matthews, Mitchell, Moore, Morgan, Morris, Moses, Napier, Newsholme, Nurthew, Oldfield, Orton, Oxen, Palmer, Parker, Parkin, Parry, Pearce, Pitt, Plenderleith, Plumley, Powell, Proctor, Pybus, Quant, Radford, Ragg, Ratheram, Reece, Reid, Reynolds, Richardson, Roberts, Robson, Roe, Rowell, Russell, Saint, Sandy, Sankey, Sawyer, Scott, Shuttleworth, Simpson, Smart, Smith, Somerville, Spear, Stacey, Stalon, Stedman, Steven, Stone, Surfleet, Sutcliffe, Sutton, Swift, Taylor, Thompson, Tipping, Toone, Town, Townley, Tuffin, Turnbull, Walker, Wallis, Wandless, Watkins, Weaver, Webster, West, Westlake, Weston, Wheeler, Whitcombe, White, Whitworth, Widdell, Wilkinson, Williams, Wills, Wilson, Wing, Winship, Winter, Withers, Wood, Wrather, Wright, Wylde.

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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Thursday, December 17, 1903.

Correspondents are Requested to take note of the fact that the Journal goes to press a day earlier next week.

Members and Student-Associates of the Pharmaceutical Society should subscribe for a copy of the "P.J. Form." at once.

A Table Showing at a Glance the amount of morphine present in either opium or tincture of opium, being the result of determinations by Mr. E. Dowzard, F.C.S., will be found in this issue.

In View of the Approaching Stock-Taking, business in drugs and chemicals is very quiet. The price of caffeine has been reduced; cod-liver oil is tending lower; cannabis indica is dearer; and raw camphor is practically unobtainable at present.

A Lesson in Chemical Theory forms the subject matter for the Students' Columns this week. Intending competitors should bear in mind that December 21 is the last date on which replies can be received to the examination papers set in the issue of November 28 at page 783.

A Continuation of the Interim Injunction restraining Father and Madame Sequah (whose real names are Rhoda Crichton and Sarah Crichton) from infringing the right of the plaintiff, Elliman, in regard to Elliman's Embrocation, was granted by Mr. Justice Farwell on Tuesday last.

A Brief Historical Review of the work done in connection with electro-chemistry since 1789 supplied material for an interesting lecture delivered by Dr. F. Mollwo Perkin to the members of the London Chemists' Assistants' Association at the Borough Polytechnic on Thursday of last week.

In his Address as Chairman of the Edinburgh District Chemists' Trade Association, Mr. W. S. Glass expressed the hope that the day was not far distant when public opinion would support a movement restricting the daily hours of labour, and when Sunday duty would be measured by the length of an ordinary Scottish sermon.

Speaking on the Subject of Territorial Representation on the Council of the Pharmaceutical Society, Mr. G. T. W. Newsholme gave his reasons for disapproving of the suggestion, and said it passed his comprehension why it should be supposed that any of his colleagues at Bloomsbury Square would make better advisers if they were labelled with the name of a district.

For Selling Magnesium Carbonate, described as "superior magnesia, warranted free from adulteration," a grocer of East Acton has been fined one shilling with costs by the Brentford Petty Sessions. The chairman said he had received a letter from a dealer, who stated that he had supplied the sample six years ago, since when there had been a change in the system of labelling.

Judgment was Given in the "Tabloid" case in favour of Messrs. Burroughs Wellcome and Co., by Mr. Justice Byrne, on Monday last, both as regards the injunction and the counter-action. In the matter of the plaintiffs' claim, damages were fixed by consent at 40s. As regards the counter-action, in which Messrs. Thompson and Capper asked that the trade mark "Tabloid" should be struck off the Register of Trade Marks, it is probable that an appeal will be lodged.

A Decision, interesting from the point of view of price protection, has been given by Mr. Justice Swinfen Eady, sitting in the Chancery Division of the High Court of Justice. In his Lordship's opinion a condition of fixing prices cannot be insisted on between manufacturer and retailer if the goods are sold "out and out" to a wholesale sundriesman and resold by him without a new contract to the retailer. The plaintiffs, whose action was dismissed, were Messrs. Taddy and Co., and the defendants were a firm of retail tobacconists.

Only Twelve More Days Remain for members and student-associates of the Pharmaceutical Society to subscribe for the 'P.J. Formulary' at the special terms. Full particulars and a subscription form will be found in this week's supplement to the Journal. On January 1 the price of the book will be twenty-one shillings net. As stated in these columns last week, the Board of Inland Revenue has consented to extend the period during which it will not enforce the new reading of the Medicine Stamp Duty Acts until March 31 next.

MEDICINE STAMP DUTY.

Great satisfaction has been given to chemists and druggists throughout the country by the announcement, which appeared exclusively in last week's issue of the *Pharmaceutical Journal* (see page 876), with regard to Medicine Stamp Duty. The announcement was that the Board of Inland Revenue had informed the Secretary of the Pharmaceutical Society that it had been decided to extend until March 31, 1904, the period during which the Board would not interfere with the use of existing labels, which would not have been regarded before the Sanguinetti decision as involving liability to duty, but are now so regarded. While it is true that various organisations and trade journals have, at different times, made suggestions to the Board that this extension should be granted, it is undoubtedly the fact that the answers to such communications were either directly negative, or studiously noncommittal, until the Board was approached by the Council of the Pharmaceutical Society. Then, then only, and at once, the Board of Inland Revenue granted the extension of time. It is not improbable that credit for this will be boldly claimed by some who, naturally enough, perhaps, study their own interests first, and those of chemists and druggists afterwards. But the facts of the case are undeniably as stated above, and members of the Pharmaceutical Society

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will be gratified at this additional proof of the influence of the Society, and of the considerate manner in which the Board of Inland Revenue is disposed to treat with it. It may confidently be expected that the deputation from the Council, which is to interview the Somerset House officials next Monday, will be able further to cement the cordial relationship between the two bodies, and possibly to assist the Board in its efforts to simplify the interpretation of the Medicine Stamp Duty Acts.

Some chemists still seem to wish for the abolition of the Acts. Whether they desire the abolition of the Stamp Duty and the licence is not clear, but in the opinion of some who are well qualified to judge, the abolition of Acts, duty, or licence would by no means be in the interests of pharmacy. There can be no question that both the licence and the duty have tended to restrict the sale of nostrums—a restriction which must be beneficial to legitimate pharmacy, as well as to medical practitioners and the public. The stamp has now ceased, almost entirely, to be regarded by the public as a Government guarantee of the efficiency of the medicine, and the presence of the stamp probably deters medical men to a small extent from prescribing packed goods. The duty also has the effect of preventing the sale of advertised nostrums in packets of a lower nominal value than one shilling. Probably, if there were no stamp necessary, "packed" pills would be largely put up in boxes to sell for sixpence or even less, and the public demand for such concoctions would be greater than ever. Again, the "patent-medicine licence" must have some effect in reducing the number of those who sell proprietary medicines. It may be mentioned here, by the way, that the suggestions which have been made for a repeal of the Acts do not meet with the approval of Mr. Glyn-Jones, who was incorrectly reported, at page 894 of last week's issue, as having stated that "chemists should now attempt to get the Act repealed." The mistake was due to the vagaries of "linotype" printing.

It is, of course, possible to suggest useful amendments of the existing Acts. But the Medicine Stamp Duty Acts are, with the single exception of the Spirits Act, the only Acts in which clear recognition is made of the chemist and druggist as a qualified man, entitled to special privileges in regard to the sale of drugs, and standing on an entirely different plane as compared with the incorporate agglomeration or the untrained tradesman. The fact that the chemist's privilege, under the "third exemption" of the Act of 1812, is well worth possessing, is shown by the efforts that have been made by grocers and confectioners to have the privilege abolished. Although there are certain difficulties to be faced by the chemist as well as by other traders, and although the history of the last six months has been marked by irritating changes in the attitude of the Board of Inland Revenue, it should be remembered by those who ask for a new Act that chemists cannot rely on the House of Commons granting to the qualified man a continued recognition of the privileges to which he, with good reason, considers himself entitled. A House of Commons which, as pharmacists already know, contains among its members several directors of companies trading in drugs, might conceivably enact that any new legal benefit should be shared by all, irrespective of training or qualification.

PRICE PROTECTION OF PROPRIETARIES.

A case of some importance to manufacturers and retailers of "packed goods" was decided by Mr. Justice Swinfen Eady, in the Chancery Division of the High Court of Justice, on Friday, the 11th inst. Messrs. Taddy and Co., tobacco manufacturers, asked for a declaration that the defendants, a firm of retailers, were not entitled to sell any packet tobacco manufactured by the plaintiffs except at such prices and generally upon such terms of supply as were specified in certain invoices, price-lists, and catalogues. They also asked for an injunction to restrain the defendants from so doing. The invoices, price-lists, and catalogues referred to had endorsed on them certain minimum prices for various "packet tobaccos," and at the foot of such prices were the following special conditions of sale:—"All the above packet tobaccos and cigarettes are sold by Taddy and Co. upon the express condition that retail dealers do not sell the packet tobaccos or cigarettes below the prices above set forth." "Acceptance of the goods will be deemed a contract between the purchaser and Taddy and Co. that he will observe these stipulations. In the case of a purchase by a retail dealer through a wholesale dealer the latter shall be deemed the agent of Taddy and Co." The retailers who defended the action had purchased the plaintiffs' goods from a wholesale tobacconists, sundriesman, and had sold the goods below the minimum prices fixed by Messrs. Taddy and Co.

In reply to the contention of the plaintiffs that the sundriesman was to be deemed an agent of the manufacturer, it was urged for the defence that the condition fixing prices of sale applied only to purchases direct from the manufacturers, and did not contemplate purchases from wholesale dealers. Mr. Justice Swinfen Eady, in giving judgment, said that conditions such as those made by plaintiffs did not run with the goods and could not be imposed on them. Subsequent purchasers, therefore, did not take the goods subject to any conditions which the Court could enforce. The condition in question was that "in the case of a purchase by a retail dealer through a wholesale dealer the latter shall be deemed the agent of Taddy and Co." It was quite clear that Taddy and Co. sold to wholesale dealers "out and out," and the wholesale dealers were not Taddy and Co.'s agents. They bought the goods themselves and sold them for their own profit. In his Lordship's opinion, when a wholesale dealer resold the goods for his own profit he was not an agent for the manufacturers, and the mere fact of the insertion in the condition of the words that he should be deemed to be an agent did not make him an agent if in fact he was not one. He, therefore, dismissed the action.

This decision means that, in Mr. Justice Swinfen Eady's opinion, a condition fixing prices cannot be insisted on between manufacturer and retailer if the goods are sold "out and out" to a wholesale sundriesman and resold by him without a new contract to the retailer. If other means be adopted for controlling prices, by means of a "contract" between the sundriesman and the retailer, the object can, of course, be achieved. Or, the difficulty may be surmounted by the manufacturer selling his goods to the sundriesman on the express condition that the latter will make and enforce a price-agreement with the retailer. Again, any arrangement such as that adopted by the Proprietary Articles Trade Association with regard to the stoppage of further supplies is not in any way affected by the decision in the Taddy case. Most chemists, of course, who deal in packed goods buy them through a wholesale dealer. In the opinion of the judge, when goods are so bought, the wholesale dealer is not the agent of the manufacturer, and, consequently, the retailer is under no obligation to observe conditions imposed by the manufacturer.

PHARMACOPŒIA REVISION.

The publication of Mr. Chattaway's 'Digest of Researches,' which summarises the criticisms of the British Pharmacopœia that have appeared in print since the beginning of 1899, has had the effect of directing the attention of the medical press to the amount of valuable research voluntarily conducted by individual pharmacists. The *British Medical Journal* remarks that "The very large number of references to published researches says much for the healthy condition of pharmacy, for it must be borne in mind that these investigations are chiefly carried out by individual pharmacists, who freely give time and material." The *Lancet*, recognising that the majority of the criticisms are the result of private enterprise, hopes that the publication of the digest will further stimulate private research towards their confirmation or refutation. "The progress of pharmacy has everything to gain from such private work when conducted with obvious care and attention to detail, and it is probable that the researches will be best conducted by those who feel personal interest sufficient to prompt them to select their own subjects of investigation. Some few criticisms, however, must necessitate research in well-appointed laboratories fully equipped with apparatus and with assistants who can devote their whole time and energy to the work, and since a large part of the expense of these must fall upon the General Medical Council, it is to be feared that, unless great care is exercised, they may be so costly as ultimately to involve an increase in the price of the Pharmacopœia." Those pharmacists who are practically acquainted with the manner in which the researches in question are made will rather fear that care in keeping down the cost of the Pharmacopœia will result in the decreased efficiency of the work. There remains to be done much work which might be expected with confidence to recoup both the pharmacist and the physician for any slight increase in the price of the Pharmacopœia.

A CONFERENCE ON PHARMACEUTICAL EDUCATION.

An educational meeting of the Pharmaceutical Society has been arranged to take place at 17, Bloomsbury Square, London, on Wednesday, January 20, 1904, at 3 p.m. The meeting will consider two papers:—(1) "University Education for Pharmacists," by Professor R. B. Wild, Leech Professor of Materia Medica in the Victoria University, Manchester; (2) "Concurrent Curricula," by Mr. H. Wippell Gadd. It is hoped that many provincial pharmacists who are interested in educational matters will attend the meeting. It may be mentioned that the Chemists' Annual Ball has been arranged for the evening of the same day, and as the surplus from the Ball is given to the Benevolent Fund of the Pharmaceutical Society, the Ball is commended to the notice of those members of the Society who may be in town at the time

SUBSTITUTION.

With the approach of the season of peace and goodwill, those manufacturers of advertised nostrums who think fit to libel those who sell their wares have again succeeded in inducing the editors of certain papers to print articles containing a denunciation of the practice of "substitution." An article, entitled "Tricks in the Drug Trade," which has appeared in a Harmsworth weekly paper of sensational character does not deserve serious notice, but it is a matter for regret that the *Medical Times and Hospital Gazette* should have fallen under the same spell. That paper commends to the attention of medical and pharmaceutical journals the "substitution of drugs which, during the last few years, has undoubtedly assumed considerable proportions." The *Medical Times* proceeds to state that it has, on several occasions lately, and in different parts of the country, been definitely proved that certain firms of chemists dispense prescriptions not only inaccurately, but with the deliberate substitution of one drug for another. "It is therefore obvious that the medical profession must take measures to protect themselves and their patients against this monstrous system in the only effective manner—by reporting at once to any firm whose drugs have been imitated the fact of such imitation; by impressing upon the patients so deceived the possible dangers of such substitution; and by assisting by every means in their power to prevent the further perpetration of such illicit practices." If this deliberate substitution is in fact practised, it is a very lamentable thing, and deserves censure. But, as chemists know, and the more important medical journals have stated, such rampant substitution is almost entirely mythical so far as drugs and the dispensing of prescriptions are concerned. It is impossible not to refer in this connection to the "Tabloid" case recently decided, and it is particularly unfortunate that a firm of the high reputation of Messrs. Thompson and Capper should have been found, even though unintentionally, to have laid themselves open to the charge of "passing off." The judgment in this case will be found at page 925, and should be read carefully by all our readers.

THE PHARMACEUTICAL JOURNAL FORMULARY.

The 'Pharmaceutical Journal Formulary,' publication of which was originally fixed for January 1, is now not likely to be ready for publication until later in the month. This is mainly due to the fact that, in anticipation of a further three months' grace being allowed by the Board of Inland Revenue, it was decided to include in the 'P.J. Formulary' all recipes received up to the beginning of the present month. Last week the Board intimated, in response to communications sent on behalf of the Council of the Pharmaceutical Society, that the time of grace would be extended to March 31, 1904, and a short delay in the appearance of the *P.J.* 'Formulary' will therefore cause no inconvenience to subscribers. The flow of orders for the book at the special subscription rate continues with unabated regularity, and it may be anticipated that many more orders will be received during the next twelve days. In any case, the subscription list will be closed definitely on January 1, 1904, after which date the net price of the 'P.J. Formulary' will be twenty-one shillings.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Anatomy of Palm Roots.

Eric Drabble has examined the roots of more than sixty species of palms. Essentially similar results have been obtained from each. The adventitious root has its origin in the pericycle of the stem, arising as an extensive rhizogenic arc. The apex is occupied by a non-stratified group of initial cells, which give rise by division to a common ground-mass of parenchyma wherein, in very young roots, appears a series of separate procambial strands. These are continued, by secondary divisions of the parenchyma, into the central cylinder of the stem. The strands, usually after undergoing repeated bifurcations, are connected with the bundles of the stem. Each of these strands gives rise to a "stele"-like structure with exarch protoxylem-groups alternating with phloem-groups; but without histologically differentiated endodermis. As the root lengthens the procambial tissue takes the form of a series of arcs by apical fusion of the strands. Still later a lobed cylinder is produced, and finally the normal root-cylinder of a monocotyledonous plant results. As a rule all the changes take place during the passage of the root through the thick cortex at the base of the stem, but in several species the lobed cylinder, or even the free strands, persist in the extra-cauline portion. The internally directed protoxylem-groups usually die out distally, but are occasionally represented by inversely orientated groups, the metaxylem elements persisting as the large scattered vessels nearly always present in palm-roots. The "medullary" strands are shown to be in reality the reduced remains of some of the free basal "stele"-like structures which have not entered into the composition of the vascular ring. It is evident that the "medulla" in palm-roots is merely that portion of the common ground-parenchyma, arising at the non-stratified apex, which becomes enclosed distally by fusion of the procambial strands, and hence differs in no respect from the external "cortical" parenchyma. An attempt was made to extend this idea to other vascular plants; and the suggestion was put forward that all ideas of "monostely" and "polystely," and of "medulla" and "cortex" as separate morphological entities, are based on an artificial conception of the structures involved.—*Proc. Linnean Soc.*

Alkaline Carbonates and Bicarbonates.

The tests to distinguish between carbonates and bicarbonates in aqueous solution and the temperature and other conditions under which the former change into the latter are matters of much interest in medicine and pharmacy on account of the extensive use of sodium and potassium bicarbonates and the relatively greater caustic or alkaline power of the normal carbonates. It has been sometimes supposed that the change, which is relatively quickly accomplished by boiling the solution, did not occur at ordinary temperatures, but the investigation of the question has shown that the change does occur at low temperatures and is dependent upon the pressure of the carbon dioxide. A given solution of bicarbonate in a closed vessel at ordinary temperatures evolves carbon dioxide until the pressure of this gas attains a certain value, depending upon the temperature and concentration of the solution, when a condition of equilibrium results. If, however, the gas be continually removed, then the decomposition proceeds, not only to normal carbonate but to sodium hydroxide, since the carbonate itself slowly decomposes with loss of carbon dioxide if the latter be removed as it is formed. The practical result of this is that every solution of bicarbonate will contain more or less carbonate, and every solution of carbonate more or less hydroxide, so that there is only a quantitative and not a qualitative distinction between the two. The following equations express the changes in terms of the ionic theory of dissociation:—

(i.) $NaHCO_3 \rightleftarrows Na + HCO'_3$

The bicarbonate radicle then dissociates, forming carbonic acid and the carbonate radicle,

(ii.) $2HCO'_3 \rightleftarrows CO_3'' + H_2CO_3$

The carbonic acid then decomposes into water and carbonic anhydride until the pressure of the latter attains the height necessary to maintain equilibrium.

(iii.) $H_2CO_3 \rightleftarrows H_2O + CO_2$

(iv.) CO_2 (dissolved) $\rightleftarrows$ CO_2 (gas)

If the carbonic anhydride be continually removed then equilibrium is disturbed and equation iv., and the preceding ones dependent on it, proceed from left to right until the solution must contain only Na and CO_3', *i.e.*, normal sodium carbonate. That the decomposition does not stop here is not at all well recognised in text-books. Solution of normal sodium carbonate has a carbonic anhydride pressure, and as carbonic acid is a weak acid, the sodium salt is partly hydrolised in aqueous solution—

(i.) $Na_2CO_3 + H_2O \rightleftarrows 2NaOH + H_2CO_3$.

The carbonic acid decomposes:

(ii.) $H_2CO_3 \rightleftarrows H_2O + CO_2$.

(iii.) CO_2 (dissolved) $\rightleftarrows$ CO_2 (gas).

F. W. Küster has conducted a series of researches on this problem by passing electrolytically prepared oxy-hydrogen through solutions of various composition, $NaHCO_3$; $NaHCO_3 + Na_2CO_3$; Na_2CO_3; and $Na_2CO_3 + NaOH$. The issuing gas was passed through baryta water and the carbon dioxide determined from the barium carbonate formed. The interesting point in the results was that the curves representing the changes, in which the composition of the solution was shown by abscissæ and the carbonic anhydride pressure by ordinates, showed no irregularity at the point when the solution contained only normal sodium carbonate, thus indicating that normal carbonate solution differed only quantitatively, and not qualitatively from one to which bicarbonate or hydroxide had been added, or from a solution of the bicarbonate alone. It also appeared, as might be expected from practical acquaintance with normal sodium carbonate that although on theoretical grounds quite possible, on practical grounds the conversion of carbonate to hydroxide cannot be realised except in a mathematically endless period of time, the rate of change becoming slower and slower as the proportion of hydroxide increases in the solution.—*Chem. Zeit.*, 1903, 652.

Artificial Production of Diamonds.

Combes discusses the various attempts which have been made to obtain the diamond artificially. Against the common supposition that the diamond can only be produced at high temperatures, the author cites several observations which seem to indicate that natural diamonds, at any rate, cannot have been formed under such conditions. The hypothesis that high pressures are necessary for the artificial production of diamonds is not in accord with actual experimental facts, and the author arrives at the conclusion that in the experiments of Moissan the pressure plays no essential part, and that the optical properties and the analysis of the crystals obtained by this chemist do not warrant the conclusion that these are to be regarded as diamonds.—*Moniteur Scient.*, through *Nature*, **69**, 113.

THE DETERMINATION OF MORPHINE IN OPIUM AND TINCTURE OF OPIUM.

BY E. DOWZARD, F.C.S.

The B.P. method for the determination of morphine in opium is clumsy from an analytical point of view, and is also objectionable because of the difficulty of obtaining the necessary 104 C.c. of filtrate.

The following method has neither of the above objections, and much less opium is required.

8 Gm. of the sample to be examined is transferred to a dry 200 C.c. conical flask, 100 C.c. of water added, and the flask closed with an india-rubber stopper, the flask is placed in water kept at about 80 to 90° C., shaking frequently, in the case of fine or coarse powder for about one hour, if in the raw state, until complete disintegration takes place. The flask is now cooled and 3 Gm. of slaked lime added, the rubber stopper is inserted, and the contents of the flask agitated frequently during the course of one to two hours (I believe in a longer maceration than is given in the B.P., especially for samples containing over 13 per cent. of morphine). The mixture is then filtered through a plaited filter and 51·6 C.c. of the filtrate (equal to 4 Gm. of opium) is transferred to a stout 200 C.c. conical flask, fitted with a sound cork; to this is added 5 C.c. of 90 per cent. alcohol, 30 C.c. of ether, and 2 Gm. of ammonium chloride; the cork is inserted and the flask shaken for thirty minutes, either by hand or in a mechanical shaker. After standing for twelve hours, the flask is shaken for a few minutes, and the mixture filtered through a single filter paper. The ether should not be removed with a pipette from the flask, but the whole poured on the paper. The aqueous portion will run through, leaving the morphine attached to the filter, while the ether is left perfectly clear, and may be completely removed with a pipette. After the morphine has been transferred to the filter, the last traces may be removed from the sides of the flask with a rubber-tipped glass rod; in this part of the process morphinated water is freely used for rinsing out the flask, and a small quantity of morphine is usually attached to the cork. This should, of course, be removed. The filter and its contents are washed with morphinated water until the filtrate is free from chlorine; then one washing is given with distilled water, using about 10 C.c.; the filter is allowed to drain and about 15 C.c. of ether poured over the edges of filter. After standing for a few minutes the ether may be removed with a pipette. The filter and its contents are now allowed to stand for about half-an-hour exposed to the air, and then transferred to a thick-walled beaker, 20 C.c. of N/10 H_2SO_4 is added, and the paper rubbed to a pulp with a glass rod. The liquid may be gently heated to ensure complete solution of the morphine; after cooling, the liquid is titrated with N/10 NaHO, using methyl orange as an indicator. Each C.c. of N/10 H_2SO_4 is equal to 0·0283 Gm. anhydrous morphine, 0·05 Gm. being added to the weight of morphine found as directed in the B.P. (equals average loss of morphine per 50 C.c.).

There is no necessity to dry the alkaloid, as in the B.P. method; direct titration gives better results. The burette should have a capacity of 10 C.c., and be divided into twentieths of a cubic centimetre.

In the B.P. method for determining the morphine in the tincture a serious mistake has been made. 80 C.c. of tincture and 3 Gm. of slaked lime are used, and the mixture made up to 85 C.c. This is a very grave blunder, as the volume should only be made up to 81·9 C.c. 3 Gm. of slaked lime displace 1·44 C.c. of water.

The correction for the extractive carried down by the slaked lime, was determined as follows:—A sample of tincture of opium containing 3·24 Gm. of extractive per 100 C.c. was used for the following experiment:—100 C.c. were evaporated to about 30 C.c., mixed with 3 Gm. of slaked lime, and then made up to 101·5 C.c. with water; after standing for one hour the mixture was filtered, and the extractive determined in the filtrate. This was found to be 2·37 Gm. per 100 C.c., 0·87 Gm. of extractive had been carried down by the lime. 3 Gm. of dry powdered opium extract was found to displace 1·9 C.c. of water. 0·87 Gm. would therefore displace 0·55 C.c. 80 C.c. of tincture would lose 0·736 Gm. of extractive, which is equal in volume to 0·466 C.c. of water; this, added to the volume occupied by the lime, is equal to 1·9 C.c. (1·44 + 0·466). Of course, the correction will vary for different samples, but 1·9 C.c. will not be far wrong. As a consequence of the above error, the B.P. tincture is about 4 per cent. stronger than it appears to be.

This is well illustrated by the following experiment. Some powdered opium, standardised to contain 10 per cent. of morphine, was made into tincture; when the tincture was tested by the B.P. method, the strength was considerably below what it should have been according to calculation. The amount of morphine in the opium marc was determined, and all losses allowed for; but still there was a considerable discrepancy, which was, however, completely accounted for by the above-mentioned fact.

The following method is free from the above and other objections:—100 C.c. of the tincture is evaporated in a porcelain dish on a water-bath until the volume is reduced to about 30 C.c., the residual liquid is cooled, and 3 Gm. of slaked lime added; the mixture is then worked into a smooth state with a small glass pestle, and transferred to a 100 C.c. measuring flask. Any traces of the matter left in the dish may be removed with a rubber-tipped glass rod. The mixture is then made up to 100 C.c. at the same temperature the tincture was measured at; if there is any froth it may be removed by adding one or two drops of ether; 2·0 C.c. of water is then added, and the mixture allowed to stand for one hour, agitating frequently. The mixture is filtered, and 50 C.c. of the filtrate (= 50 C.c. of tincture) operated on as described under opium.

The following table will be found useful, as it shows at a glance the amount of morphine present in either opium or tincture:—

C.c. N/10 H_2SO_4.	Tincture. Grammes Morphine per 100 C.c. Tincture.	Opium. 4 Gm. Taken. Per Cent. Morphine.
9·0	0·6094	7·617
·1	0·6150	7·688
·2	0·6207	7·759
·3	0·6264	7·830
·4	0·6326	7·900
·5	0·6377	7·971
·6	0·6433	8·042
·7	0·6490	8·113
·8	0·6547	8·183
·9	0·6603	8·254
10·0	0·6660	8·325
·1	0·6710	8·396
·2	0·6773	8·466
·3	0·6830	8·537
·4	0·6886	8·608
·5	0·6943	8·679
·6	0·6999	8·749
·7	0·7056	8·820
·8	0·7113	8·891
·9	0·7169	8·962
1·0	0·7226	9·032
·1	0·7282	9·103
	0·7339	9·174
·3	0·7396	9·245
·4	0·7452	9·315

C.c. N/10 H_2SO_4.	Tincture. Grammes Morphine per 100 C.c. Tincture.	Opium. 4 Gm. Taken. Per Cent. Morphine.
·5	0·7509	9·386
·6	0·7565	9·457
·7	0·7622	9·528
·8	0·7679	9·598
·9	0·7735	9·669
12·0	0·7792	9·740
·1	0·7848	9·811
·2	0·7905	9·881
·3	0·7962	9·952
·4	0·8018	10·023
·5	0·8075	10·094
·6	0·8131	10·164
·7	0·8188	10·235
·8	0·8245	10·306
·9	0·8301	10·377
13·0	0·8358	10·447
·1	0·8414	10·518
·2	0·8471	10·589
·3	0·8528	10·660
·4	0·8584	10·730
·5	0·8641	10·801
·6	0·8697	10·872
·7	0·8754	10·943
·8	0·8811	11·013
·9	0·8867	11·084
14·0	0·8924	11·155
·1	0·8981	11·226
·2	0·9037	11·296
·3	0·9094	11·367
·4	0·9150	11·438
·5	0·9207	11·509
·6	0·9264	11·579
·7	0·9320	11·650
·8	0·9377	11·721
·9	0·9433	11·792
15·0	0·9490	11·862
·1	0·9547	11·933
·2	0·9603	12·004
·3	0·9660	12·075
·4	0·9716	12·145
·5	0·9773	12·216
·6	0·9829	12·287
·7	0·9886	12·358
·8	0·9943	12·428
·9	0·9999	12·499
16·0	1·0056	12·570
·1	1·0113	12·641
·2	1·0169	12·711
·3	1·0226	12·782
·4	1·0282	12·853
·5	1·0339	12·924
·6	1·0396	12·994
·7	1·0452	13·065
·8	1·0509	13·136
·9	1·0565	13·207
17·0	1·0622	13·277
·1	1·0679	13·348
·2	1·0735	13·419
·3	1·0792	13·490
·4	1·0848	13·560
·5	1·0905	13·631
·6	1·0962	13·702
·7	1·1018	13·773
·8	1·1075	13·843
·9	1·1131	13·914
18·0	1·1188	13·985
·1	1·1245	14·056
·2	1·1301	14·126
·3	1·1358	14·197
·4	1·1414	14·268
·5	1·1471	14·339
·6	1·1528	14·409
·7	1·1584	14·480
·8	1·1641	14·551
·9	1·1697	14·622
19·0	1·1754	14·692
·1	1·1811	14·763
·2	1·1867	14·834
·3	1·1924	14·905
·4	1·1980	14·975
·5	1·2037	15·046
·6	1·2094	15·117
·7	1·2150	15·188
·8	1·2207	15·258
·9	1·2263	15·329
20·0	1·2320	15·400

Harness Dressing.

Oil of turpentine, 180; yellow wax, 18; Prussian blue, 2; indigo, 1; bone black, 2. Dissolve the wax in the oil with gentle heat; mix the other ingredients, previously well powdered; pour out while warm into suitable boxes.—*Les Corps Gras Indust.*, through *Nat. Drugg.*, **33**, 253.

THE STUDENTS' COLUMNS.

CHEMICAL THEORY.

It is surprising that students of chemistry, who, perhaps, can talk glibly of molecules and atoms, often show an entire absence of any information which would lead one to suppose that atoms or molecules have any existence; and it is hoped that by directing attention to this subject the following remarks may be to some extent of service.

If we examine specimens of salt, sodium chloride, whether derived from Cheshire mines, Mediterranean sea water, American salt lakes, Australian salt deserts, or from the interaction of metallic sodium and chlorine, or any other source, we find that the samples all have exactly the same salt taste, the same transparency, crystalline form, solubility, optical properties, and chemical composition.

So complete an agreement in the physical and chemical properties in samples drawn from such widely different sources is very striking, and it is all the more surprising when we find not one but every known compound exhibits the same identity of composition and properties, irrespective of its source or mode of preparation. These coincidences are too exact and too numerous to be considered as accidental, so to render them more easily explainable modern chemists have revived an ancient hypothesis—that matter was not structureless and uniform throughout, but was composed of separate very small portions.

Each of these small particles, which are termed molecules (a diminutive, from the Latin *moles*, a mass or lump), is regarded as being to a certain extent isolated and independent of the rest, and the chemical characteristics of a substance are conceived as being the property of the molecules themselves, while the physical properties are, at least partly, due to molecular arrangement.

A very interesting experiment, showing physical change caused by molecular rearrangement, unaccompanied by alteration of chemical properties, may be carried out as follows:—A 6 × ½″ test tube is passed into a hole made in a flat cork (1½″ diam.), which rests on the rim of a 6 × 1″ test tube, the smaller tube being thus suspended inside the larger tube. A few grammes of mercuric iodide is introduced into the bottom of the inner tube, care being taken to avoid soiling the sides of the tube, which would interfere with subsequent observation. Into the outer tube is poured 3 or 4 C.c. of aniline or other liquid boiling about 150° to 200° C., and the smaller tube replaced. On applying heat to the outer tube the aniline boils and the vapour heats the inner tube to about 180°. As it acquires this temperature the mercuric iodide, which at ordinary temperatures is a powder composed of small scarlet octohedral crystals, is changed to small primrose yellow rhombic prisms. On carefully removing some of the yellow powder and lightly rubbing with a spatula it is reconverted once again to the scarlet powder, this being the more stable form at ordinary temperatures, while at temperatures from 150° to 200° C., as well as at very low temperatures, the yellow variety is the more stable. The change may be brought about by direct heating of the test tube, but as it is difficult to avoid subliming a considerable portion on to the sides of the tube, and as this sublimate cannot readily be detached without converting it into the scarlet form by friction, it is as well to adopt some device to avoid overheating and sublimation.

On placing some of the yellow variety in a strong solution of sodium or potassium iodide it readily dissolves, just as the red variety does, forming a colorless solution. In short, there has been no change except a rearrangement of molecules, as indicated by the difference in colour, and alteration of crystalline form.

The molecular hypothesis also involves the supposition that the molecules of any particular substance—sodium chloride, for instance—are all exactly alike, but differ from the molecules of every other substance. A molecule may, therefore, be considered as the smallest particle of a substance which could conceivably be produced by a purely physical process of sub-division.

From their extreme minuteness it is improbable that we can ever know anything of individual isolated molecules, and, even if it were possible, it is very questionable if we could learn much of the properties they possess when aggregated in immense groups, as they must be in even the most microscopic particles. The conditions would be, of course, in no way comparable. It must be admitted that the molecular and atomic structure of matter is not capable of mathematical proof; but it is supported by a vast mass of experimental evidence. Perhaps the most weighty argument in its favour is the fact that the kinetic theory of gases, which is based on it, explains in a very complete and satisfactory way every known physical property a gas exhibits.

Unfortunately, a statement of the theory cannot be abbreviated sufficiently for these columns without rendering it less intelligible, and reference should therefore be made to some text-book on physics or chemistry. However, starting from the assumption of Avogadro, that, measured under the same conditions of temperature and pressure, equal volumes of any gas, irrespective of chemical composition, contain the same number of molecules, the relationship of temperature and pressure to volume, the rate of diffusion, and other properties of gases can readily be deduced from the ordinary principles of mechanics; and the fact that the conclusions obtained by calculation are in complete harmony with the results of observation is naturally regarded as evidence of the correctness of the proposition from which they were deduced. Further, the molecular hypothesis furnishes a reasonable explanation of the phenomenon of the nascent state—that is, the increased activity possessed by certain substances at the moment of their liberation, beyond the activity possessed by them under ordinary conditions.

Hydrogen, oxygen, and chlorine show this phenomenon very distinctly. For instance, if we generate hydrogen by the action of dilute sulphuric acid on zinc, and pass the evolved gas through dilute sulphuric acid, faintly tinted pink with a drop of solution of potassium permanganate, no action takes place, and the solution remains coloured. If, however, a portion of the acid permanganate solution is poured into the generating vessel containing the zinc and dilute sulphuric acid, the pink colour gradually disappears. That this effect is not due to the zinc can be shown by repeating the experiment, using magnesium or iron, instead of zinc, with the same result, and the decoloration caused by the reduction (deoxidation) of the permanganate can only be due to a special activity the hydrogen possesses at the moment of its liberation, which it does not possess later.

Exactly similar conclusions can be reached by experiments on the reduction of sulphur dioxide to hydrogen sulphide or the reduction of nitrates to ammonia. It is only reasonable to suppose that in the experiments just described the hydrogen, as it is liberated atom by atom, is able to bring about the reduction of the permanganate, sulphurous acid or nitrates, while when aggregated into molecules it is ineffective.

The fact that a chemical compound consists of molecules which are themselves of a compound nature, and not of a very intimate mixture of molecules of the elements composing the substance, is readily shown by a very interesting property exhibited by all substances in a gaseous condition, viz., diffusion. If a mixture of, say, 40 C.c. of hydrogen and 20 C.c. of oxygen is slowly passed through a tube of porous material, such as the stem of an ordinary churchwarden tobacco-pipe, it will be found that a considerable volume of the gas has disappeared, escaping through the pores of the earthenware, and that the outgoing gas is denser than that supplied to the inlet, and that instead of being a highly explosive mixture, as the ingoing gas was, it has so far lost its hydrogen that it rekindles a glowing splinter of wood almost as if it were pure oxygen. If, however, we prepare a similar mixture of hydrogen and oxygen, and ignite it in a suitable vessel by passing an electric spark through the mixed gases, we find that after the apparatus has lost the heat liberated by their combustion, the 60 C.c. of gas have disappeared, and all that remains is about one drop of water. On heating the apparatus and passing the steam through the porous tube, we find that separation of the constituents no longer takes place, and the ingoing and outgoing vapour are identical, and consequently the molecules of vapour which penetrate the tube must be composed jointly of hydrogen and oxygen, for if the vapour were a mixture of molecules of hydrogen and oxygen, an alteration of its properties would have taken place owing to the diffusion of the lighter molecules.

Our conclusion may be summarised as follows:—The molecular hypothesis furnishes a reasonable explanation of the physical similarities of chemically dissimilar gases, including the effects of varying pressure and temperature, and the relative rates of gaseous diffusion; it also renders explainable the phenomenon of nascent state, and involves the supposition that the molecules of a non-elementary substance are themselves of a compound nature. This last conclusion may also be more directly deduced from the volumentric relationship of combining gases, but this method of proof will be best dealt with when considering the experimental evidence of the existence of atoms.

DEWSBURY AND DISTRICT CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Monday, December 14, 1903, at Dewsbury, the President, Mr. R. Gledhill, in the chair.

It was decided to write the Pharmaceutical Society, and ask them to call the attention of the Inland Revenue authorities to the Spirit Act, with a view to its provisions being more stringently enforced.

Mr. W. R. Maud said the question of

Co-operative Buying

would have been considered altogether outside practical politics a few years ago, but a great change had come over the trade. His suggestion was that they should adopt, through their Association, a system of co-operative buying. There was a wide range of articles to which the principle of co-operative buying could be applied, such as toilet soaps, disinfectants, perfumes, tooth pastes, emulsions, etc.

A discussion followed the reading of the paper. Most of the speakers expressed agreement with the suggestions made by Mr. Maud, but Mr. S. Ward and Mr. J. Day were doubtful whether a scheme such as he had outlined could be worked successfully. All, however, spoke in appreciative terms of the paper, and at the close a vote of thanks was passed to Mr. Maud, who suggested, before leaving, that a committee of representatives from local associations might be appointed to discuss the question. Another suggestion was that the matter might be taken up by the West Riding Federation.

EDINBURGH DISTRICT CHEMISTS' TRADE ASSOCIATION.

OPENING MEETING OF THE SESSION.

Thursday, December 10, 1903, in the Pharmaceutical Society's House, 36, York Place, Edinburgh, Mr. W. S. GLASS in the chair.

Messrs. John A. White, W. K. Mitchell, John S. Glass, and John Beveridge were elected members.

The Federation Report.

Mr. G. H. C. ROWLAND (Hon. Secretary) read a letter from the Federation of Local Associations and enclosing copies of the Annual Report, Mr. J. F. Tocher's 'Territorial Representation Scheme,' and Mr. Humphrey's 'Synopsis of Liability to Medicine Stamp Duty.'

Messrs. W. B. COWIE and J. RUTHERFORD HILL submitted a joint report as delegates to the Bristol meeting of the Federation of Local Associations. They paid a tribute to the excellent arrangements made by the Conference Local Committee for their comfort, and acknowledged the considerate way in which they were treated by their fellow-craftsmen in the Bristol district. They emphasised the distinctness of the spheres of the Conference and the Federation. The purpose of the Conference was clearly the advancement of pharmacy in its scientific and professional aspects, and this ideal had been wisely maintained during the whole forty years of its existence. It was desirable that the suggestion made at the Bristol meeting as to some co-operation between the officials of the Conference and those of the Federation so as to secure a better time for the Federation meeting during Conference week should be carried out. The delegates strongly supported the view that the Federation and the Conference should meet annually in the same town and in the same week, as being the best arrangement. At the Federation meeting the delegates hinted that the Conference might broaden its basis by appointing a Committee on Commercial Interests, after the pattern of the American Pharmaceutical Association. In the American Association last year the afternoon of Tuesday, the second day of the meeting, from three o'clock afternoon, was devoted to a meeting of the Section of Commercial Interests, and they seem to have had no difficulty in getting through the whole business of the section in that one afternoon. The suggestion to divide the Conference into sections meeting at the same hour, as in the British Medical Association, was inadvisable and impracticable. Referring to Mr. Tocher's scheme, it was pointed out that its most valuable feature was the very accurate statistics as to the distribution of registered chemists throughout the United Kingdom. The useful summary of Medicine Stamp Duty law and practice submitted by Mr Humphrey might have been discussed profitably had there been time. The delegates agreed with the view long held by many pharmacists in Edinburgh that the repeal of the Medicine Stamp Acts *in toto* offered the only satisfactory solution of the endless anomalies created by these ridiculous statutes. The delegates referred with pride to the high position held in the Federation by their fellow-countrymen, Messrs. W. L. Currie, G. F. Merson, and W. Watson-Will.

On the motion of the CHAIRMAN, the delegates were thanked for the report.

Chairman's Address.

Mr. GLASS then proceeded to deliver the opening address. He congratulated the Association on its membership, which was at present the highest on record. He hoped the day was not far distant when public opinion would support a movement restricting the daily hours of labour, and when Sunday duty would be measured by the length of an ordinary Scottish sermon. The co-option of Mr. W. L. Currie to a seat on the Council of the Society had given great satisfaction to their Association. They also heartily endorsed the election of an eminent pharmacist, Mr. D. B. Dott, as Chairman of the North British Branch Executive, and they congratulated Mr. James Mackenzie on his appointment as a Justice of the Peace. The Cross case had been finally decided in favour of the prosecutor, and they might hope that the decision would have the salutary effect of prohibiting the sale of poisonous weed and insect killers by persons lacking the necessary knowledge and qualification to secure public safety. They had observed that the prosecutor had been extending his operations in the west, and with no small success, to the chemist's shop. While approving of all chemists' shops being under qualified management, they were sorry for an offending brother caught committing a technical offence, and he thought it would be compatible with due administration of the Pharmacy Acts if the Registrar gave a warning first to those who were unaware that they were breaking the law. The Federation meeting at Bristol discussed important matters. Mr. Tocher's masterly treatise had brought the whole question of territorial representation within the range of practical politics. He hoped Mr. Tocher might soon be sent to London as their northern division representative. One of the changes and improvements which made for progress was the new life breathed into their official organ. The Editor deserved praise for the courage he had shown in transforming the Journal into a more readable and more stimulating weekly. He hoped the publishers would soon be able to afford a better quality of paper. The Federation suggested that they should discuss the division of the Minor Examination. His opinion was that the present Minor was sufficiently high for the requirements of the business, and that it could be advantageously divided without reference to a curriculum. Out of this question arose another, namely, the inter-relation of pharmacy and medicine. The functions of the medical man and the chemist were very closely related. The dispensing chemist, however, often drifted into commercialism. They must not attempt to dictate to medical men, but, by approaching them about difficulties, much mutual benefit would be gained. They had some stock grievances against medical men, such as (1) the indiscriminate ordering of proprietaries, (2) ordering of large doses without attesting with initials or indicating in any way that a large dose is intended, (3) ordering drugs under their popular names. This sometimes led to serious consequences. For example, six powders of 1 grain of antipyrin were dispensed for an infant and labelled, as requested, "Antipyrin Powders." A further supply being required, a messenger was sent, and asked for antipyrin powders without saying they were for a child. Ten grain powders were supplied, and only the timely thought of a dispenser averted a serious accident. (4) Preferences. Edinburgh was as free as any city in the world from any taint of collusion between interested parties in the healing professions, and yet they heard of such things as preference in some isolated cases. They resented that, because it made the public think there was only one chemist in the town who could dispense prescriptions. It would be well to have medical men and chemists to recognise fully each other's qualifications, and by a free expression of opinion in a friendly spirit this could be accomplished. There were other aspects of this question that they might profitably consider at another time. If chemists wished to make their influence felt either in the district or in Parliament they would require to unite in a strong body for essentials. The Association was well calculated to encourage a spirit of union, and in this connection he made his appeal to those who were not members.

On the motion of Mr. Boa, a cordial vote of thanks was awarded to the Chairman for his address.

The Medicine Stamp Question.

Mr. Rowland, Hon. Secretary, introduced a discussion on the present position of the medicine stamp question. Several members at last meeting suggested that matters should be allowed to run their natural course a little longer, and possibly that would have been best, because, just when events seemed to be taking a fairly satisfactory course, too much journalistic enterprise had tended to complicate matters. It was to be hoped that the deputation from the Pharmaceutical Society would not have a further retrograde effect. He had just received a welcome telegram from the Editor of the *Pharmaceutical Journal*, announcing that Mr. Bremridge had received from Somerset House a letter intimating an extension of time for another three months. This was reasonable, because otherwise it would have appeared, after all the vacillations of the last few months, as if chemists had nothing else to do but carry out the sudden alterations intimated by Somerset House. He thought if the Inland Revenue Department would now make use of the editorial gag and say, "this correspondence must now cease," they would soon be able to fall into line. Mr. Rowland then gave quotations from the *Chemist and Druggist*, which showed what limited companies could do in respect of certain preparations. He went on to say that apparently chemists could not break bulk of their own stamped proprietaries, so that, if they had a cough mixture which was stamped they could not sell it in small quantities. It could only be sold in a cup or in a bottle brought by the customer. There seemed to be no doubt that directions on a label by instructions of a doctor incurred liability if an ailment was named. The department seemed, however, to be sorry the point had been raised, and that might be taken as indicating that they would not enforce such an interpretation. He had received a letter from Mr. Spence, Linlithgow, enclosing a label for toilet vinegar which bore the words "Prevents infectious diseases." The label had been in use for many years, but was now declared liable to duty because of the above words. Mr. Spence suggested that if that was so, then Rimmel's vinegar, Sanitas disinfecting fluid, Condy's fluid, etc., would be even more liable. He (Mr. Rowland) did not think Condy's fluid would be liable, because it was understood to be a simple substance more stringently enforced.

An interesting discussion followed, in the course of which Mr. T. Stephenson mentioned that it was customary for British proprietaries to be sent out to India in packages without labels on the bottles. The labels were sent separately and affixed in India. In this way stamp duty was not incurred. Several speakers favoured abolition of the Acts. Mr. Rowland was cordially thanked for his communication, and the meeting then closed.

PHARMACEUTICAL SOCIETY OF IRELAND.

Applications for admission to the under-mentioned examinations should be lodged, together with all the necessary documents, with the Registrar, not later than eleven o'clock a.m. on the respective dates:—

For Preliminary Examination by Thursday, the 24th inst.

For Pharmaceutical Assistant Examination by Monday, the 28th inst.

For Registered Druggist Examination by Tuesday, the 29th inst.

For Pharmaceutical Licence Examination, by Wednesday, the 30th inst.

SHEFFIELD PHARMACEUTICAL AND CHEMICAL SOCIETY.

ORDINARY MEETING.

Wednesday, December 16, 1903, at the Montgomery Hotel, Sheffield, Mr. A. R. Fox in the chair.

Mr. G. T. W. Newsholme, President, read a paper on

Territorial Representation.

Mr. Newsholme said his intention was to make some comments on Mr. Tocher's paper, which was read at the annual meeting of the Federation of Local Associations at Bristol last August. He should not go into all the details of the elaborate paper, nor attempt to deal fully with every point raised therein, but rather discuss the whole subject generally as it appeared to him. He quoted the following from the opening of the paper, which, he said, described the case as it exists to-day:—"The members of the Pharmaceutical Society have had the right of voting for each and every one of the members of the Council ever since the foundation of the Society in 1841. As a body corporate it was considered by its founders to be one constituency of persons brought together by a common object, and, whether a constituent member lived near Land's End or John o' Groat's, he had—and right well ought to have—a voice in the election of each and every individual member of Council. In addition to the principle involved in such a proceeding, the founders had the great precedent shown by the Royal Society, and, besides, there was the concurrent action of the Chemical Society, founded in the same year. The present system has many advantages. It is simple, direct, and central. Members have the right by charter to convene on the third Thursday of every month of May, and directly vote by ballot for such members as they consider fit and proper persons to be members of Council for the ensuing year. A voter has thus a direct interest in every councillor, while every councillor has his seat in Bloomsbury Square in virtue of the action and will of the whole Society, not a geographically isolated section of it. The result is that, in the main, only well-known pharmacists, men of wide reputation, can hope to take part in the administration of the affairs of the Society. With the exception of the metropolis itself, the election of a member with a purely local reputation is rare. So that, from the first, the Pharmaceutical Council has consisted of a body of first-class pharmacists, selected from the most cultured members of the Society, just as members themselves are considered to rank among the better elements in the 15,000 chemists and druggists distributed throughout Great Britain." Mr. Newsholme continued: These reasons are, to my mind, just as applicable to the case to-day as they were sixty years ago, but I suppose the desire to be personally or directly represented on any deliberative body in which he is concerned springs, like hope, eternal in the breast of every properly constituted mortal, and the laudable aspiration to bless pharmaceutical humanity with perfection in the way of Council elections was, no doubt, the stimulating cause of Mr. Tocher's paper on "Territorial Representation." As a contribution to the political literature of pharmacy, I regard that paper with admiration, for it is a monument of painstaking effort, and I have no hesitation in saying that it stamps its author as possessing in a very marked degree that genius of the Scottish nation which consists in taking infinite pains over details.

An Undesirable and Impracticable Scheme.

But when I come to view the scheme as a serious suggestion in Pharmaceutical Society administration, I have to confess that it does not impress me either with its desirability or its practicability. In fact, I do not think that it is at all necessary to set up a beautiful steam-hammer to crack a nut that is already amenable to the tenderest teeth. I take it that the two most essential requisites of a good Pharmaceutical Councillor are administrative capacity and time to devote it to the Society. Well, those qualifications are, unfortunately, not grouped in Great Britain on a territorial basis, and my point is that any scheme of election which has a tendency to shut out from the Council any man possessing business judgment and reasonable opportunities for placing it at our disposal is inherently bad. Our present system has resulted in the election of as representative a body of men as could be obtained from the body-politic, and if there be better men in the country, able and willing to come forward as pharmaceutical legislators, that system enables the electorate to return them without petty restrictions of a geographical nature, and without the necessity for confining their official work to the requirements of a particular district. I am convinced that it would be most pernicious to attempt to govern the affairs of pharmacy on the basis of the Imperial Party system, and I am not disposed to substitute for the present procedure of choosing Councillors one which would introduce the doubtful benefits of "log-rolling" and "carpet-bag" representatives. Why it should be supposed that any of my colleagues at Bloomsbury would make better advisers if they were labelled with the name of a district passes my comprehension, but I *can* readily conceive that they might degenerate if they were taught to limit their views and their duty to a small portion of the pharmaceutical body, which, under Mr. Tocher's scheme, would constitute their constituency. It is this tendency to emphasise the parochial element in pharmaceutical matters which, in my mind, renders the Tocher system objectionable, and I say this from conviction, not from a desire to belittle the work which that able pharmacist has put into the subject.

Present Distribution of the Council.

Looking through the list of the present members of Council I find there are three residing in the metropolitan area, two in the Western suburbs, two in the Northern sbuurbs, one in the South-West of England, one in the Western Home Counties, one in the extreme West, one in the Eastern Counties, two in the Midlands, one in the North-Eastern portion of England, one in Yorkshire, two in Scotland (one East and the other West), and four in Lancashire. It seems to me that no reasonable person can complain that the Council only represents the views of one part of the country, and no one can say truthfully that the differences of pharmaceutcial practice in Great Britain have no representation at Bloomsbury Square. True, the North of Scotland has no member, but for that matter neither has the South of England; still, it does not require an elaborate and radical alteration of procedure for the purpose of bringing in a third member for Scotland—it can be easily accomplished *now* if the right man is available, and if he is not, I do not think we ought to alter our machinery so that *anyone* may be returned. It is *men, not schemes*, that the Pharmaceutical Society requires, and you cannot manufacture good councillors in a given district by promulgating new bye-laws.

Stimulating Interest in Elections.

The object of the authors of the various papers on "Territorial Representation" during the past few years has been to devise a means of stimulating interest in the Council elections, and with that object I am in perfect agreement. But does it not strike you as a singular form of stimulus to start by restricting the voting powers of the members of the Society? At present a member in Scotland has the power of voting against my election if he thinks I am an unsuitable person—and it is a very valuable privilege, to which he is fully entitled by virtue of his subscription to the Society of which we are both members. Do you imagine that man will have a greater interest in the Society when, under the blessed words, "Territorial Representation," you take from him his power of veto? No! Local election of councillors will be no more successful in rousing local interest than local nomination of Divisional Secretaries, and you can read in the proceedings of the November Council meeting what that means. My scheme of local organisation embodied the principle of territorial representation inasmuch as it provided for the virtual election by each district of its own Secretary. What happened this year? Out of 5,024 communications issued to the constituencies the Secretary of the Society received back 732 votes!

Administrative Difficulties.

If I had the time at my disposal I would further demonstrate the impracticability of Mr. Tocher's scheme from an administrative point of view, but I will confine myself to hinting that some members of the Society who have no business of their own are bound to be more or less migratory in their habits, and some who *do* possess businesses have interests in more than one division of Great Britain. In the one case there would be grave danger—in fact, almost certainty—of disfranchisement, and in the other case there would be either plurality of votes or endless disputes as to which constituency the voter belonged to. I do not think anyone quite realises the increase in office staff which such alteration as Mr. Tocher has suggested would necessitate, or what a radical change in the system of book-keeping at headquarters it would involve; and though the argument of expense is not one that I should permit to stand in the way of real progress, I strongly object to expenditure on experimental movements that promise nothing but their novelty by way of dividend. These remarks are short and disconnected, but they will convey to your mind some of the reasons which make it impossible for me to throw in my influence with the advocates of that mixture of geographical, parliamentary, and pharmaceutical organisation which is known by the name of "Territorial Representation."

Mr. A. R. Fox, in opening the discussion, said he had felt satisfied with the course by which they had hitherto been governed.

Mr. G. **Squire** said though he would like to oppose the views of Mr. Newsholme he could not conscientiously fall in with Mr. Tocher's scheme. He did not see how territorial representation could be carried out. Under it, too, they would be no better off than at present. Such a scheme would not create any more interest in the affairs at Bloomsbury Square than was the case now. Mr. Tocher's scheme was admirable, but, in his opinion, it was unworkable.

Mr. G. **Ellinor** said that there had been too much territorial representation of London for many years, and that was why pharmacy had not progressed as it ought to have done.

Mr. H. **Antcliffe** agreed with the bulk of Mr. Tocher's paper, but, according to membership, Yorkshire was entitled to 3·5 representatives on the Council.

Mr. **Squire** pointed out that local candidates might not be found for all the divisions, and in that case some of the London members would be drafted off to represent constituencies where they did not live.

Mr. **Watson-Will** said there was no doubt that something would come of Mr. Tocher's scheme, but what was required was that all members should take greater interest in the work of the Society. He should like to see some scheme of territorial representation instituted.

Mr. **Percy Carr** was in favour of Mr. Tocher's scheme, although he thought the present members of the Council were doing all they could, and very great thanks were due to them.

Mr. Newsholme, in reply, repeated that there was no necessity for Mr. Tocher's scheme. Everything that Mr. Tocher advocated could be done now, and it all rested upon the members of the Society. The members of the Council were doing the best they could. It was not their fault that four of them were sent from Lancashire and seven from London. The responsibility rested with the members of the Society. There was no reason whatever why the members in every county should not say they were determined to have representation under the present system. They had a right to demand who every one was, and to know all about him.

The meeting ended with a vote of thanks to Mr. Newsholme, proposed by Mr. Eardley, and seconded by Mr. Ellinor.

CHEMICAL SOCIETY.

ORDINARY MEETING.

Wednesday, December 16, 1903, at Burlington House, London, W., Dr. W. A. Tilden in the chair.

The most important paper, from a pharmaceutical standpoint, on the agenda was one by Dr. Thorpe and Mr. J. Holmes, on the determination of methyl alcohol in presence of ethyl alcohol, but this paper was not read. It will appear in abstract in a future issue. Dr. E. Divers discoursed at some length on the constitution of nitric peroxide and Sabatier's nitroso-disulphonic acid.

WOLVERHAMPTON CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Wednesday, December 9, 1903, Mr. F. A. Willcock, President in the chair.

Mr. F. H. Alcock communicated some

Laboratory Experiences, Chemical and Pharmaceutical.

After a few introductory remarks, he said :—First I desire to call attention to

Sodii Arsenas,

which is official for the production of liquor sodii arsenatis, commonly called "Pearson's Solution." This has been stated to contain seven, eight, and twelve molecules of water (Y.B.P., 1876, page 112), and under certain conditions fourteen molecules of water (Y.B.P., 1881, page 92). The 1885 B.P. admitted that it contained either twelve or seven molecules of water, and for this reason, in making the liquor, the authorities required the salt to be rendered anhydrous by heating it at a temperature not exceeding 300° F. before dissolving 9 grains in 2 fl. oz. of distilled water for its production. The B.P., 1898, following on the same lines, says "recently rendered anhydrous," but omits the statement about temperature. As a result of all this, the commercial salt is very variable in its composition. Mr. J. C. Hyslop (*P.J.*, October 7, 1899) related his experience and his preference for the crystals rather than the anhydrous, which had to be thrown away several times during a period of twenty-five years, because it became damp. All this variation and indefiniteness has been my experience, and I have made some experiments which may be usefully recorded. Two Gm. of what was purchased as the B.P. anhydrous salt lost on gentle ignition 0·48 Gm. It was then heated for eight hours at the same temperature, and cooled and weighed again. No further loss had taken place. The dish was then placed in the air, but covered to exclude dust. It soon began to gain weight. After fourteen hours 0·138 Gm. was gained, after a week 0·28 Gm., and so onward, until after a time the original 2 Gm. weighed 2·8 Gm., owing to the absorption of water. On again heating the salt soon lost the absorbed water, and on heating for a whole day with a naked Bunsen flame, 1½ in. long, the apex just touching the thin porcelain vessel, the first weight, viz., 1·52, was still obtained. It seems, therefore, desirable to use sodium pyroarsenate in place of the indefinitely constituted arsenate to ensure more satisfactory uniformity of composition of the liquor. The present B.P. formula requires 17½ grains of the anhydrous salt to be dissolved in distilled water to measure 4 fl. oz., so that a small calculation will show that in place of 17·5 grains there will be required 16·6 grains, practically 1 grain less. It would, of course, require to be prepared when each fresh supply of the solution had to be made.

Liquor Ammoniæ Fortis.

I have had occasion to examine samples of this, and have found that many samples did not respond to what is usually expected. It is a very volatile liquid, and sometimes Winchester stoppered bottles are defective, but the B.P. does not demand a solution so strong. Yet, in spite of this, when "mixed off," as if the strength was B.P., it did not always come out 10 per cent. by weight. Exercising very great care in determining the strength, the "mixed off" solutions barely reached 10 per cent., and lay between 7·8 per cent. and 9·8 per cent. by weight A manufacturer has stated that thousands of Winchesters of guaranteed 0 880 ammonia leave the works monthly, and recommends careful storage. The acidity of this solution,

Liquor Ferri Perchloridi Fortis,

has attracted my attention, and in some cases great variation has been met with. No provision is made for a limit of acidity by titration in the B.P. One sample contained a large amount of nitric acid, and one is tempted to say that the official formula needs revision, for samples either contained some ferrous salt or some nitric acid, and occasionally both. A long time ago a liquor was made by acting on ferric oxide with hydrochloric acid, and to this day such a solution is used in Birmingham for browning gun barrels. I would suggest that for medicine the solution of recently precipitated, and well washed and drained ferric hydroxide in hydrochloric acid, on the lines adopted for liquor ferric acetatis, deserves a trial. To determine the acidity of this liquid I have found that by the addition of neutral Rochelle salt, the titration with normal soda can be conducted with ease. A precipitate forms but causes no difficulty, seeing that on the addition of more alkali it disappears; before neutrality a slight alkalinity is obtained.

Liquor Antimonii Chloridi.

This has a variable acidity, which may be determined by the addition suggested in the previous paragraph.

Pilula Ferri.

The pharmacist has experienced considerable trouble with this, its preparation and preservation, especially the latter, being the cause. The B.P. authorities have issued three formulæ : the first was merely ferri carbonas saccharatus massed with confection of roses; the second prescribed ferri sulphas crystallisatus and potassii carbonas, with sugar, tragacanth, glycerin, and water (Addendum, 1890), and now the present B.P. prescribes exsiccated ferrous sulphate, exsiccated sodium carbonate, gum acacia, tragacanth, syrup, glycerin, and distilled water. Several papers have appeared upon the subject, and exception has been taken to the use of exsiccated ferrous salt, because the official salt is only required to contain 92·5 per cent. of the non-aqueous compound, $FeSO_4 \cdot H_2O$. Another commentator has objected to the use of so many ingredients being ordered as excipients, and has hinted that the use of such a wide range of excipients in pill building has ruined the chance of success of many a would-be fully-pledged pharmacist at the Minor Examination. To the experienced it does seem unusual to drive off water from a salt, and by so doing not improve its quality, but rather aid in its deterioration, and consequently add it again both *per se* and in the form of syrup. I have ventured to make a few trials myself, and the following suggestion is now made, and experience and experiment have shown that the formula stands the test of time better than the official pill. For comparison, the three are tabulated below :—

Ingredients.	(a) B.P. Addendum, 1890.	(b) B.P., 1898.	(c) Suggested Formula.
Crystallised ferrous sulphate ..	60	not used	250
Potassium carbonate	30	not used	not used
Dried sodium carbonate........	not used	95	100
Dried ferrous sulphate	not used	150	not used
Sugar	12	not used	150
Gum acacia	not used	50	50
Tragacanth	4	15	15
Glycerin	2·5	10	10
Syrup	not used	150	not used
Water..........................	*q.s.*	20	not used

The following method of testing was adopted : 1·50 Gm. of mass (*c*) was mixed with 90 C.c. of water, and 10 C.c. of B.P. dilute phosphoric acid added, the whole being contained in a strong well-corked bottle, which was inverted. It required 20 C.c. of a volumetric solution of potassium dichromate, whereas 1·68 Gm. of the B.P. mass made at the same time and kept under parallel conditions throughout and treated as above required 18 C.c. of the same dichromate solution. Speaking of this, the common way of ascertaining the strength of the pill mass, it should be noted that no attempt is made to show that the ferrous iron is there actually as $FeCO_3$. One thought occurred during the experiment that since the iron spiral helps to preserve syrup of iodide of iron in the ferrous state to some extent, perhaps the addition of a little ferrum redactum under official sanction would help to keep this mass also in the ferrous state. This sounds like heresy, but a precedent has been established by the late Mr. Martindale, who recommended the addition of metallic mercury to mercurous iodide to ensure the preservation of it in the less poisonous chemical state.

Exsiccated Ferrous Sulphate.

I show a sample of old exsiccated ferrous sulphate prepared last December; yesterday (December 8) it was titrated and found to contain 95·6 per cent. $FeSO_4{\cdot}H_2O$. It had been kept in the ordinary way in a stoppered bottle on the laboratory shelves (see *P.J.* [4], **17**, 499.)

Medicated Waters

The preparation of these seems to have departed from retail pharmacy. This is unfortunate, for the apparatus required is so small and inexpensive that it cannot be advanced as an excuse. It is interesting work, and would often help to keep even the pupil out of mischief when there is a lull in the day's routine. They sometimes contain iron, and when dispensed with salicylate mixtures may cause patients some alarm, especially as the colour gradually develops when these two come together. The usual consequences in such circumstances arise between doctor and patient, dispenser and doctor, and lastly patient and proprietor.

Oleum Eucalypti.

A curious sample came before me some time ago. It came from an Italian source of supply, and was guaranteed to be genuine and of B.P. quality. On the application of the cineol test it did not agree with the usual expectations, and its gravity, colour, and odour were not such as implied official virtues. An extension of the official cineol test, viz., mixing 2 C.c. of oil with 1 C.c. of 1·75 phosphoric acid and, after solidification, an addition of glacial acetic acid until the volume measured 10 C.c., gave a turbid solution, which assumed a raspberry red colour, and in standing a few days a yellow layer of oil formed on the surface, which peculiarities I have not found to occur in any of the other samples of cineol oils that I have examined, including oleum cajuputi. These form clear solutions, the colour varying somewhat between pale straw and light brown. The sample was, therefore, consigned, for safety's sake, to the compound liniment bottle, and not to that bearing the legend, "Oleum Eucalypti, B.P."

Tinctura Cinnamomi.

Much less has been made of the standardisation of liquid preparations of the B.P., particularly of tinctures, liquid extracts, and the like, the direction being mainly towards the specific gravity, percentage of alkaloid or other active ingredient, and the total solids left after evaporation on the water-bath to practical constancy of a definite volume of the liquid. One can see objections to all these methods, but as they have come to stay, it would be wise to bear with them and endeavour to improve upon them where possible. I have been interested in some experiments with this tincture, but I am told it is not much used in pharmacy, which impels me to say that its value is not sufficiently known, or it would not be lying idle on the shelves of our shops as it appears to be, for did not that estimable lady Queen Victoria have cinnamon served at table with every meal, and do we not note how long she reigned, and with what good health and strength? The authorities give the sp. g. 0·900-0·905, and total solids, 2·25 per cent. w/v. All these I have found are in agreement with good samples. The amount of volatile oil and resinous matter present in the solids is a variable quantity, and might with advantage be referred to. If 5 C.c. of the tinctures be mixed and agitated with 5 C.c. of chloroform speedy separation follows after a few minutes' rest, and the lower layer, when clear, on removal to a very thin flat-bottomed, shallow-dried glass or porcelain dish, and left to evaporate spontaneously, yields a varying quantity of substances of an agreeable odour (if the sample is a good one), and weighs about 1/5 to 1/10 of the solids left behind in the liquid in the separator. These can easily be removed and evaporated at a low temperature, and are found to be almost entirely free from cinnamon odour. The chloroformic residue does not seem to vary much in weight after the chloroform has volatilised, for on keeping it over sulphuric acid for twelve hours the loss was only 1 milligramme. One experiment was tried, using 5 C.c. of water in addition to the above, but an inseparable thick emulsion of a pale straw colour was obtained, which required 5 C.c. of alcohol and 5 C.c. more of chloroform to bring it back to the separation point, so that it is best to omit water in the test. A specially prepared sample gave the following figures :—Sp. g., 0·9025, total solids, 2·62 Gm. per 100 C.c., of which 2·30 Gm. represented solids not soluble in chloroform, and 0·32 Gm. soluble. Not much has been done in this direction with solid residues, although the method has been in use for some years for certain tinctures containing saffron. I owe an apology to you for such a scrappy communication, but you have what has been to me interesting to experience, and a pleasure to come to Wolverhampton to relate to you. I show on the table (1) some Japanese cod-liver oil, through the courtesy of Mr. H. W. Jones, of Messrs. Wyleys, Coventry; (2) oleum eucalypti tests with genuine specimens and suspicious; (3) oleum cajuputi similarly treated with the two acids; (4) ferri sulphas exsiccatus; (5) cinnamon tincture residues; (6) liquor ferri perchloridi fortis (containing much nitric acid—you observe its force upon the stopper).

The President moved a vote of thanks to Mr. Alcock for his interesting paper, and the vote was carried.

CHEMISTS' ASSISTANTS' ASSOCIATION.

Thursday, December 9, at the Borough Polytechnic Institute, 103, Borough Road, London, S.E., Dr. F. Mollwo Perkin delivered a lecture on

Advances in Electro-Chemistry,

illustrated by numerous interesting experiments. The electrochemical laboratory at the Borough Polytechnic is the only one in London especially fitted up for the purposes of electrochemical research, and that Dr. Perkin's courtesy in placing his lecture theatre at the disposal of the Chemists' Assistants' Association was keenly appreciated was shown by the large attendance of members.

The application of electricity, both pure and applied, has ever been a fascinating field for study and research. Most of the initial work in electricity, as applied to chemistry, Dr. Perkin explained, was conducted with high-tension currents obtained from frictional machines. Therefore most of the effects produced, from the point of view of the chemist, were due more to the disruptive force and heating power of the electric spark than to electrolytic agency. Thus, water was not decomposed by electrolysis until the year 1800, when Nicholson and Carlisle succeeded in doing this by means of the voltaic pile. It had, however, already been split up into its component parts as early as 1789 by Patets van Trootwijk and Demain by means of the current at high tension obtained from a frictional electric machine. The apparatus used by them was simply a glass tube sealed up at one end and having a gold electrode passing through the seal. The tube stood over water and another gold electrode passed up through the open end. Trootwijk and Demain noticed the formation of gas when the spark was passed, and also that when the level of the water sunk below the level of the electrodes a spark passed between the electrodes and caused the gas to explode. In May, 1800, Alexander Volta wrote from Como to the President of the Royal Society and described his first voltaic pile or battery. It is interesting to note, however, that the first voltaic element was even simpler than that described by Volta. This consisted of a series of copper and silver plates separated from each other by means of flannel or cloth soaked in a solution of salt. On May 28, 1792, a Mr. Robinson wrote to his friend Mr. Fowler:—"I made a number of zinc pieces about the size of a shilling and took the same number of shillings, and noticed that when the pile of shillings and zinc is brought against the tongue that an unpleasant sensation is produced, and the sensation is particularly unpleasant when all the pieces touch the tongue at the same time."

Nothing further appears to have come of Robinson's experiments. On the other hand, Volta's discovery was destined to be of untold importance, not only to science, but to the world in general. After Volta's discovery it became the rage to try experiments with every conceivable combination of metals in order to obtain the most powerful battery. A considerable amount of work was carried out, not with the idea of advancing science, but as a kind of amusement. But by the combination of scientific endeavour and pseudo-scientific play, the battery improved in form and constitution, so that by 1807 Davy was able to obtain a current of sufficient intensity to decompose alkaline hydroxides and obtain the metals sodium and potassium.

Almost from the commencement of electrochemical study those engaged in it began to question how it was that the current passed through water. Davy and Berzelius propounded theories which, although they do not agree with our modern conception, still helped science forward, in that they systematised the work.

Berzelius imagined compounded substances to consist of two parts, one negatively charged, and the other containing a positive charge of electricity. Acidic substances were wholly charged with negative electricity, or they contained a preponderating negative charge. Alkaline or basic substances, on the other hand, had a positive charge. Therefore, an acid and a base would attract each other. If the base contained a greater positive charge than the acid contained negative, then a salt, having an alkaline reaction, would be produced.

In 1835 Faraday came upon the scene and enunciated his laws, which to-day form the foundation upon which the science of electrochemistry is built. Faraday discovered by careful experiment that a given amount of electricity will always liberate the same quantity of a substance at the electrode. Thus a current of one ampère passing through a solution of a silver salt for one second will liberate 0·001118 Gm. of silver at the negative electrode. He found, secondly, that the quantities of different metals separating at the electrodes in the same time is proportional to their equivalence or combining weight. Thus the current which will liberate one gramme of hydrogen will in the same time liberate 108 Gm. of silver, 31·5 Gm. of copper (in cupric salts), 63 Gm. of copper in cuprous salts, 100 Gm. of mercury in mercuric salts, and 200 Gm. of mercury in mercurous salts.

Faraday also devised our present form of nomenclature. He called the portions of matter which convey the current "ions," signifying wanderers. Those which moved towards the positive pole were "anions," and those which travelled to the negative pole were "cations." The positive pole he called the anode, and the negative pole the cathode.

Dr. Perkin next touched upon the theory of Arrhenius, which was presented to the scientific world in 1886, and which is accepted as the theory which most exactly explains, according to our present knowledge, what takes place in solution. The theory of Arrhenius has been of enormous value in stimulating research, and in advancing electrochemical science. The theory briefly is this—All acids, salts, and bases are ionised or dissociated in solution, and these dissociated parts or ions convey the current. Thus common salt in solution is not there as the molecule NaCl, but as the ions Na and Cl, sulphuric acid as the ions 2H and SO_4. Now these dissociated parts are not atoms or molecules, but "part molecules" containing a heavy electrical charge.

The charge on the ions Na and Cl, for example, is equal and opposite. The Na has a powerful positive charge, and therefore conveys the electric current to the negative electrode or cathode. The Cl' ion has a powerful negative charge which is equal to the positive charge on the Na'. Therefore the Cl' ion conveys the electric current to the positive electrode or anode. Now the moment the ion Na comes in contact with the negative electrode its positive charge becomes neutralised, and the now neutral ion is liberated as a sodium atom, it therefore acts upon water, and hydrogen is liberated, caustic soda at the same time being formed.

Similarly, the Cl ion, when it comes in contact with the positive electrode, has its negative electricity neutralised, and makes its appearance as chlorine, possessing the characteristic odour and properties of the gas.

The ion SO_4 in sulphuric acid contains a charge which is double as great as that of hydrogen; therefore, in order to neutralise its charge, two hydrogens must unite with it. The ion of phosphoric acid, PO_4, contains a charge which has three times the quantity of electricity which one H ion possesses, therefore, three H ions are required to neutralise its charge; so we get H_3PO_4.

The effect of ionisation on colour reactions, precipitation, etc., was then explained, and a striking experiment was shown to illustrate that all substances are not ionised to the same extent. The apparatus consisted of four glass cylinders, fitted at the lower end with tightly-fitting rubber stoppers, through which a platinum electrode passed.

The upper ends were fitted loosely with corks, through which an adjustable platinum electrode passed. The four cylinders were filled respectively with normal solutions of hydrochloric, formic, and acetic acids, and with sodium carbonate. Four incandescent lamps were connected in series with the cylinders; the current could, therefore, only pass through the lamps after passing through the solutions in the cylinders. When the electrodes were as far apart as possible, the lamps in connection with the hydrochloric acid and sodium carbonate glowed brightly; that in connection with the formic acid glowed feebly; and the one connected with the acetic acid was barely red hot. This showed that hydrochloric acid and sodium carbonate are about equally ionised, formic acid much less, but much more than acetic acid.

Descriptions were then given illustrating processes in which electrochemical methods are of great importance. Many processeses of analysis can be carried out with great ease and accuracy by means of the electric current. Not only can the metals be analysed electrolytically, but also the halogens and the NO_3 radical. Thorpe's electrolytic apparatus for detecting and estimating small quantities of arsenic in foods, etc., was then exhibited, and the working of the apparatus illustrated. The apparatus had been kindly lent by Messrs. Baird and Tatlock for the occasion.

One of the most, if not the most, important applications of electro-chemistry is the electrolytic refining of copper. In the year 1902 no less than 883 (short tons) of copper were produced daily by electrolytic processes. Of this amount the United States refined 86·5 per cent., but it is interesting to notice that Great Britain came next with 8·8 per cent., Germany 2·75 per cent., and France 1·6 per cent. In most other branches of electrochemistry Great Britain has lagged behind terribly—not, we believe, so much because she cannot, but that she will not. The science is too new; let others develop it, and when they have got well ahead, and shown us what they can do, we will commence.

The amount of copper refined in America during 1902 amounted to 278,860 tons, valued at £14,500,720. From the mud or sludge obtained in the copper vats no less than 27,000,000 oz. of silver, valued at £2,600,000, was obtained, and 346,020 oz. of gold, valued at £1,430,447. In the world there are thirty-three electrolytic copper refineries. Descriptions of the series and the multiple system were given, and model apparatus at work, representing the series system was shown.

From such a simple substance as sodium chloride we can obtain hypochlorites—which are of great value for bleaching—chlorates, perchlorates, chlorine, sodium hydrate, and even sodium. By the electrolysis of a saturated solution of potassium carbonate, potassium percarbonate, which, when added to acidified water, is a very convenient source of hydrogen peroxide. From acid sulphates the persulphates can be obtained, which have proved of such great use for organic oxidation. Pigments, such as white-lead and chrome yellows, can be manufactured electrolytically. Quite recently it has been found possible in the electric furnace to manufacture a very fine quality of crucible steel.

Turning, then, to the advancement of electro-chemical methods in organic chemistry, mention was made to the electrolysis of organic acids—to the large amount of work which has been done in connection with organic reduction. Attention was then directed to organic oxidation. The great difficulty here is that there is a great tendency to over-oxidise and completely burn up the substances. But, in spite of the difficulties, a considerable amount of important work has been carried out. In this connection, the preparation of iodoform was shown, and samples of anthraquinone and purpurogallin, produced electrolytically, were passed round. In conclusion, Dr. Perkin said that, although he had covered much ground, yet he had only touched on the fringe of this vast new science.

EDINBURGH CHEMISTS', ASSISTANTS', AND APPRENTICES' ASSOCIATION.

ORDINARY MEETING.

Wednesday, December 9, 1903, in the Pharmaceutical Society's House, 36, York Place, Edinburgh, Mr. Archibald Currie, President, in the chair.

The first communication was a

Talk on Origins,

by Mr. Donald McEwan, who referred to the modern tendency to have all kinds of knowledge ready made, like a kind of mental Mellin's Food. Much that was interesting was missed by this tendency. Just as in the old days the stage-coach traveller, though he moved more slowly, came more into actual touch with the country and the people than the traveller by express train, so the student who had to ferret out things for himself was a more all round man than the spoon-fed modern learner. It was a most interesting and instructive thing to try to find out the actual process by which things had come to be as they are. He then illustrated his topic by reference to the origin of the English language, and traced the various elements in it as preserved, for instance, in place names.

The second communication consisted of

Notes and Queries,

by Mr. William Duncan, Ph.C., F.C.S. The queries had been handed in by members of the Association, and were as follows:—

℞ Bromoform	10 minims
Sp. vini rect.	1 dr.
Glycerini	½ oz.
Aq. cinnam. ad	2 oz.

Ft. mist.

How should the above be dispensed?

The prescriber of this mixture is apparently aware of the trouble that bromoform gives when ordered in aqueous vehicles, but the quantities of alcohol and glycerin ordered are insufficient to keep it in solution if ten minims be measured, not ten drops. As it is impossible to diffuse the separated bromoform by shaking, and adding more alcohol would probably make the mixture—which is likely intended for a child—too alcoholic, it would be better to suspend with acacia or tragacanth. Solution of the bromoform in oil, and then emulsifying, has been recommended.

℞ Sodii salicylat.	
Phenazoni aa	1½ dr.
Ammon. bromid.	1 dr.
Caffein. cit.	16 gr.
Aq. chloroform ad	6 oz.

Ft. mist.

℞ Sodii salicylat.	
Phenacetin aa	5 gr.
Caffein. citrat.	12 gr.
Syr. aurant.	1 oz.
Aquam	3 oz.

Ft. mist.

What are the precipitates, and how can they be prevented?

In the first case probably salipyrin, and in the second case salicylic acid, along with the insoluble phenacetin. The prescriptions are examples of the trouble that caffeine citrate often causes in mixtures, from the readiness with which it hydrolytically dissociates in water. Here the freed citric acid liberates the salicylic acid, which, in the first prescription, reacts with the phenazone forming the very insoluble salicylate.

Substituting an equivalent quantity of pure caffeine for the salt mends matters.

℞	Tinct. ferri perchlor.	4 dr.
	Liq. arsen. hydrochlor.	1 dr.
	Glycerini	4 dr.
	Aquam … ad	3 oz.

Ft. mist.

On keeping, this mixture develops a peculiar smell. What is the cause of it?

A similar smell develops in glycerinum pepsinæ, and mixtures of glycerin and hydrochloric acid that have been made for some time. Probably a chlorine derivative of glycerin is produced—a chlorhydrin.

℞	Ferri sulph.	4 gr.
	Succi conii inspiss.	1 oz.

Ft. ung.

How should the above be dispensed?

With Extractum Conii, B.P., 1885. Failing that being in stock, evaporate the present juice to a proper consistency, and combine the iron sulphate.

℞	Ung. zinci,	
	Ung. plumbi acet.	
	Ung. hydrarg. nit. … aa	1 oz.

Ft. ung.

This ointment develops a dark green colour. What is the cause of it? Probably mercurous salts in the citrine ointment. If such be present the zinc oxide will, in time, set free the black and yellow oxides of mercury, the combined colours of which give rise to varying shades of green or brown, according to which oxide predominates.

℞	Hydrarg. ox. flav.	8 gr.
	Ol. olivæ	12 minims
	Ung. cetacei … ad	1 oz.

Ft. ung.

This ointment, on keeping, develops white streaks all through. What is this due to?

Free acids in the fats—likely in the wax and spermaceti of the cetaceum ointment. In the presence of such the yellow oxide will slowly pass into the condition of a less coloured compound.

℞	Hydrarg. biniodid.	2 gr.
	Aquæ destil.	6 oz.

Ft. lotio.

Is it right to use *q.s.* potassium iodide to dissolve the mercuric iodide?

Yes; it is customary to do so. The addition, probably, however, diminishes the antiseptic properties of the iodide, just as alkali chlorides do to corrosive sublimate.

℞	Syrup. Easton	1½ oz.
	Inf. gentian. co. … ad	6 oz.

Ft. mist.

What is the precipitate in this mixture?

Calcium sulphate and phosphate, along with gummy matter, mechanically carried down. The lime is derived from the infusion and the acids from the syrup.

The layer of bismuth oxide next the glass of the bottle darkens in colour when exposed to light. Is this a case of reduction, and does it alter properties?

The darkening of bismuth salts on exposure is usually, I think, due to sulphur, but it is quite possible in this particular instance it may be due to reduction. Haloid salts of bismuth show some resemblance to silver salts. Bismuth trichloride, for instance, becomes dark grey on exposure to sunlight—a lower chloride probably being formed. A black substance, BiO, is thought to be precipitated by boiling the chloride with stannous chloride, but it is likely the precipitate is finely divided metal. A quantitative estimation of the altered oxide would be necessary to permit of a definite answer. If there is an alteration in colour there is an alteration in properties—not necessarily medicinal properties.

Chloral and camphor, menthol and carbolic acid, and many other combinations liquefy on mixing. Why?

The experiment of our youth—liquefying snow or ice by mixing with salt—throws some light on these phenomena. The melting point of every substance is lowered by the addition of another, if the latter be soluble in the liquid form of the first, a law of which we have practical experience in many pharmaceutical operations. For instance, the slow solidifying of carbolic acid suppositories and choral suppositories, and the liquefaction of carbolic acid or glacial acetic acid by the addition of traces of water. The freezing point of the solvent is depressed, the depression depending on the quantity of substance dissolved, a fact made use of in the cryoscopic method of Raoult for the determination of molecular weights. Chloral, camphor, menthol, thymol, carbolic acid, etc., have comparatively low melting points, and as they are mutually soluble in each other, the addition of the one to the other, if in suitable proportions, soon yields a solution liquid at normal temperature. The statement in the Pharmacopœia under camphor, "It forms a liquid when triturated with chloral hydrate, menthol, phenol, or thymol," is only true if the quantities triturated be correct.

What are the active principles contained in each preparation of digitalis—the infusion and the tincture? Both made strictly B.P.

The chemistry of digitalis is "foggy," but it is generally believed that the drug contains the following principles:—digitoxin, soluble in alcohol, insoluble in water; digitalin, soluble in alcohol, sparingly in water; digitalein (probably a mixture), soluble in alcohol and water; and digitonin, insoluble in alcohol, but soluble in water. If this be true the infusion will contain chiefly the last two and but little of the first two, and the tincture will contain chiefly the first three, but probably all four, as it is made with 60 per cent. alcohol. But to answer the query satisfactorily would require research, probably extending over years.

Is there any difference between Acid. Hydrocyan. Dil., B.P., and an acid made by diluting with an equal quantity of water the Scheele's acid of the wholesale houses?

It will depend on the strength of the wholesaler's acid. When dealing with a poison like hydrocyanic acid, it is absolutely necessary, if the pharmacist wishes to be safe, to personally determine the strength of the acid. During the past year the Scheele's acid of commerce examined by me has varied from 3·5 to 4·7 per cent. of HCN.

Why does liq. sodii ethylatis colour on keeping?

From the presence of aldehyde resin which forms on keeping.

How much water will glycerin, on exposure to air, absorb?

About 30 per cent. Glycerin, like all other readily soluble bodies, continues to absorb water till the vapour and atmospheric pressures are equal.

℞	Lin. potass. iod. c. sapon.,	
	Ung. hydrarg. ammon. … aa	1 oz.

Ft. ung.

Can the above be dispensed white?

I do not think it can—at least, to remain so.

Solid caustic potash has frequently a green tint. Why?

From contamination with potassium manganate.

A discussion followed which was taken part in by Messrs. Boa, Currie, Hill, McEwan, and Plenderleith, and on the motion of the Chairman, a cordial vote of thanks was awarded to Messrs. Duncan and McEwan, and especially to Mr. Duncan, who had charge of the arrangements.

Mr. Duncan, in replying, expressed a hope that queries would be sent in at an earlier date, as it was impossible to deal satisfactorily with many questions that were put on such short notice as he had had on the present occasion.

INSTITUTE OF CHEMISTRY.

ANNUAL DINNER.

Monday, December 14, 1903, at the Hotel Cecil, London, Mr. David Howard, President, in the chair.

Among those present were Mr. S. R. Atkins, President of the Pharmaceutical Society, and several other persons connected with pharmacy, viz.:—Dr. John Attfield, Mr. R. A. Robinson, Mr. A. E. Ekins, Mr. Thomas Tyrer, Mr. Edmund White, Professor W. Palmer Wynne, Mr. C. T. Kingzett, and Mr. William Chattaway. There were also present three of his Majesty's judges, including Mr. Justice Byrne, of "Tabloid" fame; Drs. Stevenson, Thorpe, and Tilden, of the notorious Committee on Poisons; Sir William Crookes, Sir William Ramsay, Sir Arthur Rücker, Sir W. Huggins, Professor J. Millar Thomson, and Sir Thomas Elliott (Secretary of the Board of Agriculture).

The speeches dealt mainly with higher scientific and technical education.

CHELTENHAM CHEMISTS' ASSOCIATION.

INAUGURAL MEETING.

Wednesday, December 9, 1903.

In response to an invitation to meet at the residence of the Divisional Secretary, the following chemists attended:—Messrs. Mansbridge (Nathl. Smith and Co.), J. W. Thomas (Thomas Brothers), F. Palmer (Fletcher and Palmer), J. Stewart, J. Chambers, Arthur Hill, J. B. Clarke (Beetham and Clarke), F. H. King (Lloyd and King), W. H. Hill, C. James, H. Wilkins, and Wm. Barron. Mr. Mansbridge was elected Chairman of the meeting. After a few words of welcome from the Divisional Secretary, and a tribute to the memory of the late Mr. Nathl. Smith, it was decided to form an association, to be called the Cheltenham Chemists' Association, the object of the Association being to exhibit sympathy with, and to give loyal support to the Pharmaceutical Society, to aid and encourage the Benevolent Fund, to promote cordial and friendly intercourse amongst the members, and to act in combination on matters affecting the general interests of the trade.

Election of Officers.

The following officers were appointed:—President, Mr. W. Barron; Secretary, Mr. J. A. Thomas; Treasurer, Mr. F. Palmer.

It was arranged to hold monthly meetings, the first to take place in the month of January, 1904.

LEEDS AND DISTRICT CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Thursday, December 10, 1903, in the Grand Central Hotel, Leeds, Mr. G. W. Worfolk presiding. The chief topic of interest was that of proposed

Territorial Representation.

The debate was introduced by Mr. F. Pilkington Sargeant, who said that of schemes suggesting territorial representation the one by Mr. Tocher appeared to be the only one possible. It might be suggested that if the scheme were adopted each of the twenty-one constituencies might have its own college of pharmacy, either under the ægis of the local university or under the direct control of the Pharmaceutical Society. A chemist might complain that the Society has worked only for the benefit of metropolitan chemists and those in the provinces who, having well-established businesses, were free from the petty trials and tribulations which beset the smaller retail chemist. That complaint was to a certain extent justified. Protection of the chemist had been translated into protection of the so-called historic houses, and the heritage of the retail chemists had suffered. Seven street arabs might assume their title, but the historic houses had flourished. He submitted, therefore, that a system of territorial representation would be of great benefit to the Pharmaceutical Society: the Council would be more representative than at present.

Other speakers included Messrs. J. H. Beacock, F. W. Hollingworth, W. O. Pollett, J. Broadhead, and the President, the general opinion being favourable to Mr. Tocher's scheme.

A vote of thanks was passed to Mr. Sargeant for introducing the subject.

CAMBRIDGE PHARMACEUTICAL ASSOCIATION.

ORDINARY MEETING.

Friday, December 11, 1903, at Cambridge, Mr. E. Saville Peck in the chair

Medicine Stamp Duty.

Mr. B. Sidney Campkin discussed some aspects of the medicine stamp question, and said that he thought the Pharmaceutical Council had been slow to act with regard to the matter. One could not help feeling, too, that there seemed on the part of some of the chemists a disposition to regard the Board of Inland Revenue somewhat in the light of a natural enemy. This, however, did not appear to be warranted. In his opinion the Pharmaceutical Council would be well advised to consult the chemists throughout the country through their Divisional Secretaries, with a view to finding out how the interests of the chemists and the public could best be served. It was possible that stores, companies, and shops which distributed medicines would evolve—if they had not already done so—a means of circumventing the proposed restrictions, and probably the advantage that so many chemists expected would be somewhat elusive.

A discussion was to have followed Mr. Campkin's remarks, but Mr. C. S. Addison moved that this should be adjourned until the end of March. He thought the Board of Inland Revenue had taken Horace's advice—viz., "Mix a little folly with your wisdom."

Mr. H. F. Cook seconded the proposition, which was agreed to.

SOCIETY OF CHEMICAL INDUSTRY.

(YORKSHIRE SECTION.)

ORDINARY MEETING.

Monday, December 14, 1903, at the Queen's Hotel, Leeds, Mr. Jas. E. Bedford, President, in the chair.

Professor H. R. Procter read a paper on the

Volumetric Determination of Hardness in Water

from the determination of the calcium and magnesium salts and sulphates. Professor Procter showed how Pfeiffer and Wartha's methods could be applied with great advantage in the general laboratory, the use of alizarine blue paste in boiling solution being recommended for the acidometric titration of the alkaline salts present. For determining the sulphates volumetrically, he showed that benzidine chloride could be advantageously employed. Insoluble benzidine sulphate is thrown down, and the loss of benzidine hydrochloride can be easily found by titration with standard alkali in the presence of phenol-phthalein. The soap methods were considered to be very unsatisfactory, and Hehner's method was well spoken of.

In the course of the discussion which followed, it was affirmed that caustic soda in the presence of waste tannin substances, such as catechu, quebracho, and myrabolams, helped to keep the boilers free from scale.

Mr. John Cobb then gave a paper upon the subject of

Coal Ash.

He pointed out certain facts with regard to the importance of determining the amount and nature of the ash given by coal. The ash is not only objectionable as being non-combustible, but when certain mineral substances are present it may fuse, and entangle large amounts of carbon, and thus lead to a serious loss of fuel. Mr. Cobb makes his ash into pyramids about three inches long from the finely ground ash, and tests these in a furnace which is fitted with a pyrometer, and observes the temperature at which the pyramids bend over, so that their tops touch the bases on which they rest. A coal with 5 per cent. of infusible ash may give much better results than another with a smaller percentage of fusible ash. The methods for determining phosphorus and other constituents in coal ash were also considered.

IRISH CHEMISTS' ASSISTANTS' AND APPRENTICES' ASSOCIATION.

ORDINARY MEETING.

On Monday, December 14, 1903, at 73, Harcourt Street, Dublin, Mr. Edgar B. Aplin, President, in the chair.

Mr. Patrick Kelly, member of the Council of the Pharmaceutical Society of Ireland, gave an address on "Pharmacy—Past, Present, and Future." After giving some details of pharmacy among the ancients, Mr. Kelly spoke of present-day pharmaceutical education, and of the need for legislation to protect the qualified pharmacist against the encroachments of limited companies. He dwelt at some length on Mr. Chamberlain's fiscal policy as applied to the drug trade. A cordial vote of thanks was passed to Mr. Kelly for his address.

BRIGHTON ASSOCIATION OF PHARMACY.

ORDINARY MEETING.

Thursday, December 10, 1903, at 58, King's Road, Brighton, Mr. W. H. Gibson in the chair.

The Chairman informed the meeting of the receipt of a telegram from the Editor of the *Pharmaceutical Journal* to the effect that the Inland Revenue officials had extended "the time" further to March 31, 1904. This was received with applause and satisfaction.

The Amended Rules.

The rules of the Association were then discussed. These were framed in 1862, amended in 1872, and addition to the objects of the Association and a decrease of subscription made in 1893. Now the proposed amended rules were brought up by the Committee. They were a further extension of objects and aims of the Society. The point as to whether the Committee should elect the officers of the Association, or whether they should be elected by the members at the annual general meeting, was freely discussed, and eventually it was resolved that the officers be elected by the members themselves, and that the annual subscription be 2s. 6d. These amended rules were then proposed by Mr. Yates, seconded by Mr. Blamey, and put to the meeting by the President, and were carried unanimously. The bye-laws were then put, and, after one or two minor alterations, were carried.

Formation of a Buying Club.

The next item on the agenda was the Buying Club and its formation. It was proposed by Mr. Cook and seconded by Mr. Beckwith, that a depôt and deposit scheme be taken up. It was resolved that the club should consist only of those members of this Association who are registered chemists in business, and not trading as a limited liability company.

[The Editor is indebted to the Hon. Secretary of the Brighton Association of Pharmacy for a copy of the rules of the new Buying Club. Fifteen members have already joined, and a depôt has been decided on, to open on January 1. Members are to subscribe 2s. 6d. annually, and pay a deposit of £3. Each member is to subscribe also to the P.A.T.A. The Hon. Secretary of the club is Mr. W. R. Cook, of 52, King's Road, Brighton.]

READING AND DISTRICT CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Thursday, December 10, 1903, at the Table Dainties Restaurant, Reading, the President, Mr. E. Cardwell, in the chair.

Mr. F. Mays read a paper on

Price Protection of Proprietaries.

He began by pointing out that when discussing a trade policy chemists should remember that they are part of a trading community, and that what influences the general body of traders as a whole will influence them individually. The chemist, probably as a result of his special training, is apt to regard himself as a privileged person; but in the case under consideration—the distribution of proprietaries—he is simply a trader, and it is to his advantage to follow closely the methods of successful distributors and apply them to himself. The drug trade furnishes many examples of protection, but the P.A.T.A. claims the support of retail chemists in preference to private and other arrangements, in that it is a visible, central organised medium, accessible to everyone.

An interesting discussion followed, and it was agreed that the proprietors of the articles mentioned should be approached from the Association, and also from individual members, recommending them to join the P.A.T.A., and that the federated associations should be asked to co-operate for the same purpose.

A sub-committee was formed to carry out the details of this scheme.

LISTER INSTITUTE OF PREVENTIVE MEDICINE.

LECTURE ON TOXINS.

Thursday, December 3, 1903, at the Lister Institute of Preventive Medicine, Chelsea Gardens, London.

Dr. Allen Macfadyen gave a lecture on

Intra-Cellular Bacteria Toxins and Their Practical Application

Dr. Macfadyen emphasised the necessity of a suitable method for obtaining the cell-plasma of organisms for experimental purposes, and gave a description of the method employed at the Lister Institute of mechanically grinding the organisms while frozen to a brittle condition by means of liquid air. He proceeded to point out that there were two kinds of bacterial poisons—soluble toxins, which were excreted by the bacteria, and cellular toxins, which were contained within their body-substance. Diphtheria and tetanus poisons were extra-cellular, and were to be met with in the nutrient fluids in which the organisms were cultivated. But typhoid and plague toxins were practically absent from the culture fluids, and in such cases the presumption was that the toxins were intra-cellular. Antitoxic principles of treatment must be based on a knowledge of the nature and properties of these cellular poisons, and a vital question for bacteriologists at present was the relation of intra-cellular toxins to immunity. A 10 per cent. solution of the intra-cellular constituents of the typhoid bacillus produced toxic symptoms when injected into experimental animals. And it was found that the serum of monkeys, into which toxic typhoid cell juices had been injected, possessed anti-bacterial and anti-toxic properties, inasmuch as it protected the experimental animals against the bacilli and also against an intra-cellular toxin obtained from them. It was further found that such a serum possessed curative and preventive properties as regards the typhoid bacillus and an intra-cellular toxin present in the same organism. Hence it appeared that the cellular poison of the typhoid bacillus was to be placed in the category of the genuine toxins, in the bacteriological sense of the word, since its capability of inducing the formation of a specific antitoxin was now demonstrated. It was worthy of note that the typhoid cell juices were rapidly and completely absorbed on subcutaneous injection, without causing the unpleasant local reactions which at times occurred on treating animals with the dead bodies of the bacilli. This had a practical significance in regard to the bacterial vaccines. It was probable that the immunising value of the cholera, typhoid, and plague vaccines rested in the bodies of the respective organisms present, and there could be little doubt that such vaccines as ordinarily prepared contained a good deal of unnecessary ballast. In conclusion, Dr. Macfadyen referred to results that had been obtained from investigation of the intra-cellular constituents of other pathogenic bacteria, such as *Streptococcus pyogenes*, *Staphylococcus pyogenes aureus*, and *Bacillus enteritidis*. The cell juices of the tubercle bacillus, he mentioned, could be obtained with comparative ease and rapidity, and, whereas in the preparation of Koch's new tuberculin about seven days were required to effect the preliminary disintegration of the bacilli, by the freezing method the cell juices could be obtained in as many hours.

NORTH STAFFORDSHIRE CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Thursday, December 10, 1903, at the Roebuck Hotel, Stoke-on-Trent, Mr. T. C. Cornwell, Vice-President, in the chair.

Pharmaceutical Politics.

Mr. Emery opened the proceedings with an address, entitled "A Chat with an M.P. on Matters Pharmaceutical; or, a Plea for Chemists' Rights." A fortnight ago, as Divisional Secretary for Stoke-on-Trent, he had a chat with Mr. Coghill, M.P. for that division. The M.P. received him very kindly, and took a great interest in the chemists' case as presented to him. The speaker had previously had many communications from Mr. Coghill, offering his support to whatever of a practical nature was brought forward in the interests of pharmacy. At the interview he pointed out to Mr. Coghill that as the State imposed on chemists certain restrictions and certain laws, he thought the State should give them the same protection that they did to lawyers and doctors. Mr. Coghill replied that he thought chemists had a right to Government protection. The speaker then explained to Mr. Coghill the present-day system of company trading, where there was frequently not one qualified chemist on the board of directors, and Mr. Coghill's reply was "You astound me." But he did not see how civil service stores were to be put down. Mr. Coghill, M.P., had promised to give his support and his championship to any reasonable proposal that they might bring before Parliament. Mr. Emery mentioned certain drugs which, he contended, unqualified shopkeepers ought not to sell.

Mr. T. C. Cornwell expressed the opinion that Mr. Emery's picture of protection of medical men and lawyers was rather overdrawn. What they wanted most was protection of title. He thought the "covering" system was really the action of black sheep.

Mr. Oldham (Vice-President) agreed in the main with Mr. Emery, and thought the mistake the Pharmaceutical Society made was in not insisting on the title being kept solely for chemists.

A vote of thanks to Mr. Coghill for his promise of support was moved by Mr. Emery, seconded by Mr. Allison, and carried.

Mr. Emery having replied, Mr. T. C. Cornwell then gave an interesting report of his attendance as the Association's delegate at the recent conference of North Staffordshire organised masters and assistants at Hanley on the question of shop hours. Mr. Cornwell gave a lucid *resumé* of the business transacted, and was heartily thanked for his report.

On this question of closing, Mr. Averill, J.P., the President, had written to Mr. Cornwell saying he did not much trust voluntary action in the matter, and would rather see it made compulsory that all business premises should be closed not later than 7 p.m., except Saturday, when it might be 9 p.m. He wished the noble lord who opposed the Early Closing Bill in the House of Lords had to stand behind the counter for twelve or fourteen hours each day; he would then change his mind.

SCHOOL OF PHARMACY.

FOOTBALL CLUB'S SMOKING CONCERT.

Tuesday, December 15, 1903, in the Crown Room, Holborn Restaurant, London, Mr. John Humphrey in the chair.

The annual smoking concert of the Pharmaceutical Football and Athletic Club—as the club is now called—passed off very successfully. Among those present were Professor Greenish, Dr. Drabble, Mr. F. C. J. Bird, Mr. E. J. Millard, Mr. E. White, Mr. H. Wilson, Mr. A. H. Solomon, and Mr. H. Hickie. The music was throughout of a very high standard, and was under the efficient direction of Mr. Wilson James, whose singing was much appreciated. Special praise must also be given to Miss Ethel Goldie, who played violin solos with much skill and taste, and to Mr. Barclay Gammon for his clever musical sketches.

The Chairman, in proposing success to the Football Club, expressed the hope that the School of Pharmacy team, by being placed at the head of the Inter-Pharmacy Football League this year, might win outright the challenge cup which they have now held for two successive years. If so, and no one else offered another cup for competition, he himself would be pleased to provide one.

Mr. V. C. Hewlett, Captain of the club, suitably responded, and subsequently Mr. G. M. J. Cole, Hon. Secretary, thanked Mr. Humphrey, on behalf of the present members of the club, for his offer.

Mr. W. J. U. Woolcock proposed the toast of "The Committee" of the concert, to which Mr. A. Wade, the energetic Hon. Secretary, replied.

After the toast of "The Chairman" had been proposed by Professor Greenish, Mr. Humphrey submitted that of "Other Schools of Pharmacy," and Mr. W. B. Nelson responded.

HARROGATE AND DISTRICT PHARMACEUTICAL ASSOCIATION.

SOCIAL MEETING.

Thursday, December 10, 1903, at the Salisbury Hotel, Harrogate, the President, Mr. C. E. J. Eynon, in the chair.

Mr. Dutton gave a clever and amusing ventriloquial and imitative entertainment, and during the evening Messrs.

Atkinson, Weston, and Mitchell contributed songs. Mr. Wood gave a recitation, and Mr. Walker gave a capital reading in Yorkshire dialect. Mr. Hines presided very ably at the piano.

This was the first meeting of its kind, and proved to be of such an enjoyable character, and brought together so many pharmacists, that the success of the Association seems assured.

THE HARTLEPOOLS AND DISTRICT CHEMISTS' ASSOCIATION.

MONTHLY MEETING.

Tuesday, December 15, 1903, at Mallaby's Café, West Hartlepool, Alderman Thos. Clarkson in the chair.

It was agreed that the contract with Messrs. W. and T. Avery, which was decided upon at last meeting, should date from January 1, 1904.

Trading Section.

The principal matter for consideration was the report of a sub-committee in reference to co-operative buying and the formation of a trading section. After considerable discussion had taken place on the report, it was decided to form a trading section, rules and regulations to govern the same being drawn up and decided upon. With respect to the goods to be handled by the trading section, this was left over for discussion at the next monthly meeting.

WESTERN CHEMISTS' ASSOCIATION (OF LONDON).

ORDINARY MEETING.

Wednesday, December 16, 1903, at the Norfolk Hotel, Paddington, Mr. J. W. Bowen, President, in the chair.

The President thanked the members for the honour of being again elected President, and reported on the annual dinner of the Association, which had been held since the last meeting. That dinner had been very successful, but the Committee were disappointed with the music. Next year they hoped to have a better musical programme.

Mr. Philp nominated Dr. Lanyon Owen for honorary membership of the Association.

The Late Mr. Mathews.

The President referred in feeling terms to the death of Mr. John H. Mathews, whom he described as a typical pharmacist, and a man of great geniality. Mr. Mathews had done much for the Western Chemists' Association, and the members felt that his death was a personal loss. He moved:—

> That this Association has heard with the greatest regret of the death of Mr. John Hitchcock Mathews, who was one of the founders of the Association, a past-President, and for many years Treasurer, and wishes to convey to his relations its sincere sympathy in the loss it has sustained.

Messrs. Cracknell, Gulliver, Weston, Philp, and Worsley expressed their deep regret at Mr. Mathews' death, and the motion was passed in silence, by every member rising to his feet.

Other Matters.

Some remarks were made with reference to medicine stamp duty and the "Tabloid" case, after which Mr. Worsley showed an incompatible mixture, containing quinine sulphate, dilute sulphuric acid, and potassium iodide. Several members expressed opinions as to the best method of dispensing such a prescription.

AMERICAN PHARMACEUTICAL NOTES.

(By Our Special Correspondent.)

Price-Protection.

Something quite remarkable has transpired of late on this side of the ocean. The "patent" medicine proprietors have at last taken the cut-rate situation in their own hands, and it would seem that they are determined to bring relief at whatever cost. At the Washington Convention of the National Association of Retail Druggists, held two or three months ago, the proprietors were urged—nay, almost commanded—to adopt the direct-contract and serial-numbering plan which had been established during the year by the Miles Medical Company. The proprietors baulked. They did not want this plan. It was too costly; it involved too much machinery; it would not work any way. But they declared that, while they could not accept this plan, they would take hold of the old tripartite plan, and agree to make it a complete and thorough success. They knew that they had never given the plan hearty support, they said; but they were now determined to jump into the breach and fulfil their task nobly. As a consequence of this promise—the "Washington promise," as some of the drug journals call it—the proprietors got together recently in New York City, and devised ways and means for strengthening the tripartite plan. The National Association of Retail Druggists will have very little or nothing to do with the task. As we say in America, it is "up to" the proprietors. If they succeed, all credit and honour to them; if they fail, the fault will lie upon their own heads. Their method is to work along conservative lines. Minimum price schedules will be established in each town and city, and will be based upon the best agreement that can be reached with the aggressive cutters themselves. This is merely a stroke of diplomacy; it is felt that the larger dealers are the ones who cause the most trouble, and their support must, therefore, be secured at the outset. Once the schedule is established, the proprietors declare that it must be lived up to honestly. If prices are cut, the cutter will straightway find it impossible to secure goods from the jobber or the proprietor—the other two parties to the tripartite agreement. There will be agents about to see that the penalty is swift and sure. All of this really means a new era in economic pharmacy in America. The retailers have been organising for the last thirty years. One association after another has risen from the ashes of its predecessor. Previously, however, force enough has never been exerted to make the proprietors see that it was worth their while to take the situation in hand and honestly and earnestly strive to bring relief. Their present attitude is, therefore, the climax of long years of organised effort. Of course, it remains to be seen whether they will accomplish their purposes; but that they are earnest and determined is not doubted.

The Late Mr. Warren.

The death of William M. Warren, general manager of Parke, Davis and Co., continues to elicit eulogistic comment in the pharmaceutical press and elsewhere. Mr. Warren was one of the new class of leaders born of modern industrial conditions. He was one of the "captains of industry" which America has produced during the last fifty years. If he achieved less worldly fame than Carnegie, or Swift, or Hill, it was because the drug trade does not offer the opportunities which are presented in the iron trade, in the meat trade, or in the railroad world. In the very nature of things, it is not possible to build up as great industrial organisations in the one field as in the other three. Within this limitation, however, Mr. Warren achieved the very highest position of leadership. He guided the destinies of the largest drug house, not only in America, but in the world. Over 2,500 employees were under his supervision, and they were scattered all over the globe. During his administration of seven years branch houses were established in Russia, in Japan, in Australia, in Montreal, and in a score of American cities. The branches in London and India had been established before his time. It will be readily perceived that Mr. Warren's death removes the leading figure in industrial pharmacy, and the loss is one which the American drug trade can ill afford. His greatness was proved by the fact that in seven short years he more than quadrupled the business of his house.

Patent Law.

The patent law question has been pretty thoroughly discussed over here during recent weeks. The letter of Patent Commissioner Allen has been received with great and general indignation. It will be remembered that Mr. Allen threw a dynamite bomb into the ranks of the retailers by the statement that the patent laws of the country, in their reference to medicines as well as to all other products of human invention, were absolutely impregnable. They had fostered medical science in the industrial arts. They were in harmony with the American policy of giving an inventor the sole right to his product for a limited time, and then throwing it open to the public without any restriction whatsoever. All of this was like slinging a wet cloth over the efforts which American druggists have been making for twenty years to have the patent laws so revised that it would not be possible for the producers of a German synthetic to come over here and charge consumers five times as much for their goods as they are able to secure in their own country. If the Commissioner is right, there is not much use in making any further effort; but until they are convinced that he is right American druggists are bound to do a lot of protesting. This they are indulging themselves in at present to their hearts' content. The drug journals are full of their indignation, and a good deal of oratory is being set free at association meetings.

Cocaine Legislation.

It would seem to American pharmacists that their British cousins are, like themselves, beginning to realise the need of correcting the cocaine evil by surrounding the sale of the narcotic with severe restrictions. The subject has apparently been discussed considerably of late, not alone in the trade press of England, but in the medical journals and the newspapers. It may, therefore, interest British chemists to know that American pharmacists have recently grappled with the problem in dead earnest. At the last meeting of the American Pharmaceutical Association, held on Mackinac Island, Mich., approval was given to the draft of a model or specimen law drafted by the well-known expert on pharmaceutical jurisprudence, Professor James H. Beal, of Scio, Ohio. This measure was written after a thorough study of existing State laws, and probably represents the best judgment and wisdom of the hour. It has been pretty generally printed and discussed in the pharmaceutical press of the country. Just now it is of interest to know that Professor Beal's measure has been introduced in the National Congress at Washington. British readers, of course, understand that Congressional measures in this country apply directly to the district of Columbia only, and indirectly to interstate commerce. They cannot affect the internal affairs of any State. The States are jurisdictions unto themselves. However, State legislation is very apt to follow the lead of Congressional enactments, and it is, therefore, very desirable to have Congress first pass a law which, it is hoped, will ultimately be enacted in the various States of the union, in order that something like uniformity may be secured. While speaking of the cocaine evil, reference may be made to the fact that the Illinois Board of Pharmacy has been making a determined effort to enforce an anti-narcotic law enacted at the last session of the State Legislature. In Chicago, as in many other large American cities, there are many black sheep among the druggists who pander to the trade of cocaine *habitués*. The Board of Pharmacy has been going after these fellows with a sharp stick, and the results have been quite sensational. One of the victims has sought to defend himself by accusing the President of the Board, Wilhelm Bodemann, of an effort to secure "hush money" from his victims. Mr. Bodemann has been acquitted of the charge in court, but he continues to be slandered by those whom he is bringing to justice. He declares that he is determined to continue the good work, and he has been heartily supported by various associations, who have passed resolutions of sympathy and confidence.

Government Pharmacy.

British chemists doubtless know that a committee of the American Pharmaceutical Association has been working for years to improve the status of pharmacists employed in the army, navy, and marine hospital service of the Government. The work has not been without its discouraging features, and yet considerable progress has been made from time to time. Three or four years ago, for instance, a law was secured increasing the rank and pay of twenty-five apothecaries in the navy. They were given the title of "pharmacists," the rank of warrant officers, and an annual salary ranging from 1,200 dols. to 1,800 dols. or 2,000 dols. a-year. It is now proposed by Surgeon-General Rixey, of the navy, to increase the number of these "pharmacists" from twenty-five to fifty. It seems likely that the Surgeon-General's recommendation will carry.

NEW REMEDIES.

The Notes in this column embody recent suggestions in therapeutics, for the information of dispensers; they deal with novel applications of drugs and preparations in common use, in addition to new remedies strictly so-called.

Bismuth Oxyiodo-agaricinate.—A German patent has been granted to J. D. Riedel for the preparation of an iodo-compound of bismuth and agaricinic acid. It is intended, like dermatol, to be used as an astringent antiseptic, and also for internal administration in the treatment of the various gastric and intestinal complaints which complicate tuberculosis, since it acts at the same time as an anhydrotic, antiseptic, and astringent. It is a bright grey, amorphous, insoluble powder.—*Pharm. Zeit.*, **48**, 152.

Bromoquinal.—This is quinine dibromosalicylate. It is given in doses of 9 to 11½ grains per diem in fevers and generally as a substitute for quinine hydrochloride, than which it is better tolerated. In addition to its febrifuge and antiperiodic action it has a slight hypnotic value. It occurs in the form of yellowish crystals melting at 197-198° C.—*Nouv. Remèdes*, **19**, 225.

Camphor for Ulcers of the Leg.—Schulze states that camphor gives the best results in the treatment of ulcer of the leg. He prescribes it thus:—Triturated camphor, 30 grains; zinc oxide, 7½ drachms; lard to 6 oz. Or the following paste:—Triturated camphor, ½ oz.; zinc oxide, 3 oz.; olive oil, 3 oz.—Mix.—*Therap. Gaz.* [3], **19**, 267.

LEGAL INTELLIGENCE.

High Court of Justice—Chancery Division.

The "Tabloid" Case.

Wellcome v. Thompson and Capper.

On Monday, December 14, 1903, Mr. Justice Byrne gave his considered judgment in the action brought by Mr. H. S. Wellcome, of Messrs. Burroughs Wellcome and Co., London, against Messrs. Thompson and Capper, of Manchester, Liverpool, and elsewhere. The evidence and arguments of counsel were reported in the *Pharmaceutical Journal* (*supra*, pp. 819, 860). On the present occasion a large number of well-known pharmacists attended to hear judgment delivered.

Judgment.

Mr. Justice Byrne said: I have to deal with an action to restrain passing off goods not of the manufacture of the plaintiffs as or for their goods, and particularly from selling, or offering for sale, any such goods under the name "tabloid" or "tabloids," and from infringing the registered trade marks, and with a motion on the part of the defendants to expunge the trade marks in question from the Register. It will be convenient to deal first with the motion. In and previously to the month of March, 1884, the plaintiff firm were manufacturing and selling compressed drugs in a solid form and of a lenticular or bi-convex shape. On March 14, 1884, they registered in Class 3 in respect of substances not included in Class 1 used in medicine and pharmacy the word "tabloid," and on January 27, 1885, they registered in the same class the representation of the top of a box with the word "tabloids" upon it. It was explained that this latter registration was in order to be able to register in Germany, where such registration would not be granted except in connection with a device and previous registration in England. These registrations have been renewed and are in force. The plaintiffs have continuously made and sold compressed drugs ever since the date of the original registration of the word "tabloid." These drugs have always been made and sold of the original shape and size, but they have also been sold of various other sizes and of differing shapes, chiefly, however, of a form more or less bi-convex. The list of drugs and compounds of drugs so made and sold has been extended from time to time, but the plaintiffs have always sold their solid compressed drugs in connection with the word "tabloid" or "tabloids." The registration was under the Act of 1883, and having regard to the terms of Section 64 Sub-section 1c the question is whether or not the word "tabloid" was a distinctive fancy word not in common use at the date of registration—namely, March 14, 1884. It is important to keep the date in mind in considering the matter and this was forcibly brought home to me in the present case by the fact that when the word "tabloid" was first mentioned I quite thought it was a common dictionary word in the language long before 1884, but I am satisfied that this was really due to my acquaintance with the word as used in connection with the compressed drugs of the particular shape I have described which have become so well known since the year 1884. The words "table" and "tablet" were, of course, well known, and the latter in reference to solid drugs at least as early as the time of Lord Bacon. I find in the 1848 quarto edition of Johnson's 'Dictionary' the definition of tablet is:—First, "A small level surface"; secondly, "A medicine in a square form." And then there is a quotation from Bacon: "It hath been mainly used to wear tablets of arsenic as preservatives against the plague as they draw the venom to them from the spirits." In the 'Imperial Dictionary' of 1868 I find this definition (No. 4) of "tablet": "A medicine in a square form. Tablets of arsenic were formerly worn as a preservative against the plague. A solid kind of electuary or confection made of dry ingredients, usually with sugar, and formed into little flat squares, called also lozenge and troche, also applied to anything made up in a flat square shape, as a tablet of soap." The word "tablet" had also been used to denote compressed drugs made up in the bi-convex shape in question by the plaintiff firm in connection with Wyeth's tablets and by some other persons. The plaintiff firm had registered the word "tablet" for the same class, intending to use it as their trade mark, but, finding that it could not be sustained, Mr. Wellcome set about finding a new word, and invented the word "tabloid." This word was certainly not in common use, for it was unknown before, and was used by his firm for the first time. The case of the trade mark "Bovril" before the Court of Appeal (in 1896, 2 Chancery Division, page 600) relieves me from a close examination of earlier cases, and gives me a guide in endeavouring to determine whether or not "tabloid" was a fancy word. The earlier leading cases of Van Duzer's trade mark and Leaf's trade mark (34 Chancery Division, page 623) were cases in which, as pointed out by Lord Lindley in the Bovril case, a coined word was not under consideration at all, but ordinary English words. "Where," says Lord Lindley, "you have got a fanciful use of a known word you must have a word which is obviously non-descriptive." At page 606 he says: "But I agree that a word which describes the article will not do. To my mind it is not descriptive, notwithstanding Mr. Bowers's very ingenious argument. He tries to make it out to be a descriptive word, not by taking the word, but a little bit of it, and he says that because 'Bov' may have some relation and does have some relation to 'Ox,' therefore 'Bovril' describes what? I do not see that it describes anything at all." I think I also get this from the Bovril case, that it is not necessary that the word should be absolutely unsuggestive. The word "Bovril" was suggestive of "Ox," but as a whole was held not to be descriptive. The argument in the present case for the applicants was: There is a word to be dealt with compounded of "table" or "tablet," with a common suffix "oid." To the last Mr. Walter, with his accustomed skill, would not pin himself to one or the other. There were, he says, the words "tabellae," "table," "tablet" in common use, and "tabloid" must be taken from part of one or other of them, and the rest of the word is made up by adding a common suffix "oid," meaning "in the form of" or "like" or "allied to," used in a great many English words, and especially in connection with scientific nomenclature, and though part of the root or suggesting word is left out the word "tabloid" means something like or allied to things denoted by one or other of the old words. On the other hand, it was forcibly urged that the only attribute common to the things denoted by the words "table" and "tablet" is the suggestion of flatness on one side or other, or on both sides of the object without any notion of convexity. Suppose "tablet" be the word supposed to have the common suffix appended it is to be noticed that the new word is not "tabletoid," but "tabloid," a possible but not the most obvious formation; while if "table" be the word, though "tabloid" would probably be a natural way of adding the suffix by analogy to other words constructed in a similar form, the word so constructed would mean allied, not to a "tablet," but to a "table," but though solid drugs in certain forms were known as "tabellae" or "tabulae," there is nothing that I can find to denote convexity or compression in the word. I think the case is near the line, but, treating it as a matter of fact in the particular case, I come to the conclusion that in March, 1884, the word was not "really intelligibly describing the thing sold," which is the way in which Lord Lindley, at page 607 of the report of the Bovril case, puts the form of direction to the jury. I agree that there is a suggestion or atmosphere of description about the word as then used, but I do not think that it can be said to have been other than a "fancy word" as applied to goods in the class in which it was registered. The motion must therefore be dismissed. I now come to the other part of the case, and it is clearly proved that since the registration of the words "tabloid" and "tabloids" the plaintiffs have continuously and to an enormous extent advertised, sold, and denoted their goods in connection with the registered words. They deal only wholesale; that portion of the public to which they appeal directly is mainly composed of doctors, chemists, nurses, and those concerned in the ordering, preparation, and administration of drugs; and it is to these that their advertisements, trade lists, and trade documents are directed. To every medical practitioner, to every chemist and qualified chemist's assistant, and to every known nurse in the Empire diaries are and have for many years been sent annually, in which Messrs. Burroughs and Wellcome's goods are referred to and denoted as "tabloid" or "tabolids." I had the evidence of a very representative body of medical men and chemists, which convinces me that to these, who constitute that portion of the public who are primarily concerned in the matter, the words "tabloid" and "tabloids" mean and denote, and have always meant and denoted, the goods of the plaintiff firm. All that could be done by owners of a trade name to protect it has been done. The plaintiff firm has been vigilant even to the extent of persuading compilers of modern dictionaries to correct, and to undertake to correct, their definitions of the word "tabloid." There is one peculiarity in the case I must mention. The word "tabloid" has become so well known and appreciated in consequence of the use of it by the plaintiffs in connection with their compressed drugs that I think it has acquired a secondary sense, in which it has been used and may legitimately be used so long as it does not interfere with the plaintiffs' trade rights. I think the word has been so applied generally with reference to the notion of a compressed form of dose of anything, from literary education to household dwellings, and sometimes also perhaps as denoting a bi-convex form of drug, and various works, including numbers of "Punch," have been referred to showing such use of the word. Mr. Walter ingeniously suggested that they have sought to rob the English language by preventing its natural development in endeavouring to appropriate such a word as "tabloid," which he puts as being a natural development of the word "table" or "tablet"; but I think it is more correct to say that the plaintiffs have made a gift, such as it is, to the language, while reserving a special use of it to themselves. The trade-lists employed in the drug trade are unanimous in their testimony, as well negative as positive, to the true meaning of the word as applied to compressed drugs. A large number have been produced, not one of which uses the word in reference to the goods of anyone except the plaintiffs, and all of which refer to the plaintiffs' goods in connection with the words "tabloid" or "tabloids." I am satisfied, as a result of the evidence of the medical men and chemists who have given their testimony, that, speaking generally (though there are exceptions), to doctors who prescribe and use the word "tabloids" the word means and intends the goods of the plaintiffs; to the chemists and others concerned in the drug trade who dispense and sell the drugs the word has the same meaning. Sometimes doctors add to the word "tabloids" the name of the firm or the letters "B. and W.," but this is by way of extra caution to ensure against the substitution of drugs of a less reliable or lower standard than that of those prepared by the plaintiffs. I quite agree that there is a considerable section of the public knowing and using the drugs who have not noticed or observed the distinction between "tablets," under which name a very large number of compressed drugs of bi-convex shape are and have for a long time past been sold, and "tabloids" so as to identify the latter with the manufacture of the plaintiffs. When given in pursuance of a prescription the "tabloids" are often, perhaps generally, so put up as not to disclose the name of the maker. This, I suppose, is to protect the chemist and to entitle him to charge as for medicine made up to prescription. Besides this, although the plaintiffs supply their goods to chemists in their own small bottles and tin boxes to be retailed, they sometimes supply them in bulk, and then the chemists may, and sometimes do, put them into small bottles and sell them in connection with their own name, with labels calling them "tablets," not "tabloids," and supplying them in answer to a request for either "tablets" or "tabloids." Though this is not complained of, it must have some effect in preventing the retail customer from having his attention so pointedly called to the fact that the words "tabloid" and "tabloids" denote the goods of a particular firm as would be the case if the "tabloids" were always retailed under that denomination in connection with the plaintiffs' firm name or initials. Nevertheless, though I have evidence of mistakes in ordering goods as "tabloids" when the goods of other makers are really wanted, I consider that the evidence does show, again speaking generally, that members of the public, when they ask for "tabloids," mean and expect to get the goods of the plaintiffs. Upon this part of the case I think that the plaintiffs have discharged the obligation referred to by Lord Herschell in "The Two D" case (Leahy, Kelly and Leahy *v.* Glover, 10 Reports of Patents Cases, at page 155), when he says that "the foundation of a passing-off case is that the party alleging it should prove in the first instance that any name which he claims as his trade name has been so extensively used in connection with his manufacture or with the goods which he sells, that his goods have come to be known in the market by that name, that anyone using that name would intend to refer to his goods, and that anyone to whom the name was used would understand that his goods were referred to." The defendants are manufacturing and retail chemists carrying on a large business. They have businesses at several different places, including two shops in Deansgate and Piccadilly, Manchester. They have sold in response to orders for "tabloids" goods not of the manufacture of the plaintiffs' firm. Until about the middle of last year the great bulk of the compressed drugs sold by the defendants at their Manchester shops were of the plaintiffs' manufacture. The defendants and all their assistants knew that "tabloids" denoted the plaintiffs' goods. Since the date in question the defendants have stocked compressed drugs of other makers, and they have sold in bottles labelled "tablets" in connection with their own name goods of the plaintiffs as well as goods of other manufacture. The bottles and labels are not distinguishable, and they are, as a rule, kept in one glass case, though it is said that they are or ought to be in different sides of it. It has been proved that, on September 10, 1902, the defendants supplied to Winifred Davies, in fulfilment of a prescription, "Tabloid potassii chloratis, B. W. and Co.," things which were not the plaintiffs'. On September 12, 1902, Mr. Thomas Smith was supplied with "cascara sagrada" in similar shape and form to the plaintiffs' tabloids, in response to a request for "cascara sagrada tabloids," which were described on a list shown to and read by the assistant as "cascara sagrada tabloids, B. and W." On August 13, 1902, Mr. W. H. Sykes was served with goods not the plaintiffs', they having been represented to him as the plaintiffs' goods in reply to an express inquiry whether they were Burroughs and Wellcome's goods. I have specially mentioned these three cases, because there was a passing-off where the goods were not denoted as "tabloid" or "tabloids" only, but in such a way as to make it absolutely certain that the plaintiffs' goods were referred to by the use of their name or initials. There were nine other where the goods required were referred to as "tabloid" or "tabloids." In all, twelve cases were proved, seven taking place at the Piccadilly shop and five at the Deansgate shop. One was in August, 1902, five in September, one in October in the same year, and five in January, 1903. Nine were accompanied by the production of writing showing what was wanted. The witnesses gave their evidence well, and I believe them. Some point was made that they were, with, I think, two exceptions, clerks in the office of a firm of Manchester solicitors who were instructed by the plaintiffs' solicitors, and some point was also made of the fact that no notice was given of the occasions until after the issue of the writ in the action. The orders were all what are called trap orders, and the Court is always careful to see that traps, when set, are fairly set, and in some cases to refuse to attach weight to evidence of casual transactions where the matter depends upon the effect of some exchange of remarks made weeks or months before the trial, and where notice has not been given within reasonable time after the event of the intention to rely upon what is alleged to have taken place. In each case the circumstances must be considered, and in the present case I think the traps were fair, and that the instances given in the particulars have been proved. I think that the plaintiffs are entitled to an injunction independently of the question of registered trade mark. There is one point on the form of the order. There are several marks referred to. I think I only heard argument with respect to the marks for this particular class. Is not that so? There were some general observations made about the others, but I have not even got the details of them—there are several.

Mr. Levett: In the statement of claim it is confined to four, but the notice of motion went to several more.

Mr. Justice Byrne: I do not know that I have heard any argument. If there is any special argument founded on those——

Mr. Walter: No, I think not.

Mr. Justice Byrne: I think both parties treated it as though it was on this.

Mr. Levett: I think so. It is the same word in different classes.

Mr. Justice Byrne: As far as the motion is concerned, that must be dismissed with costs.

Mr. Levett: Will your Lordship give me a certificate? Your Lordship may remember now, under Section 77 (a), when a Trade Mark has been in dispute and proved, the Court gives a certificate.

Mr. Justice Byrne: Will you just read me the section?

Mr. Levett: Section 77 (a) is this: "In an action for infringement of a registered trade mark, the Court or a judge may certify that the right to the exclusive use of the trade mark came in question, and, if the Court or a judge so certifies, then in any subsequent action for infringement, the plaintiff in that action, on obtaining a final order or judgment in his favour, shall have his full costs, charges, and expenses as between solicitor and client, unless the Court or judge trying the subsequent action certifies that he ought not to have the same." The very point came before Mr. Justice Buckley in J. C. and J. Field and Co., Limited's trade mark, 1900, 1 Chancery, 651: "The proprietors of a trade mark, which had been registered for more than five years, brought an action for infringement, and the defendants moved to rectify the Register by removing the plaintiffs' mark therefrom. The action and motion were tried together and on the same evidence; an injunction was granted, and the motion refused. Held that, although after the expiration of five years from the date of registration the validity of the trade mark could only be impeached on motion under Section 90 of the Patents, Designs, and Trade Marks Acts, 1883, the right to the exclusive use of the Trade Mark had come in question in the action within the meaning of Section 77 (a), and that the plaintiffs were entitled to a certificate to that effect."

Mr. Justice Byrne: That seems to be on all fours, Mr. Walter.

Mr. Walter: It does not affect me. It affects other people.

Mr. Justice Byrne: Yes, I think you are entitled to that. Now as to the form of the injunction.

Mr. Levett: If your Lordship has the statement of claim the first paragraph is the usual passing-off injunction: "An injunction to restrain the defendants, their servants and agents."

Mr. Justice Byrne: That is not the usual form, Mr. Levett. I think it will be, will it not, "From selling or offering or exposing or advertising for sale or procuring to be sold any preparation not of the plaintiffs' manufacture under the name of 'tabloid' or 'tabloids' or 'tabloid B. W. and Co.' or 'Burroughs Wellcome and Co.'s tabloids' or under any other name which by reason of colourable imitation thereof or otherwise is calculated to represent or lead to the belief that such preparation is a preparation of the plaintiffs"? "Or otherwise," I think, carries all. You establish your right to your trade mark by the disposal of the motion.

Mr. Levett: I suppose 40s. damages will be the best way to deal with that?

Mr. Justice Byrne: You can take it 40s. damages.

Mr. Levett: I am told it is sometimes usual in a large case like this for the Court to say that it is a proper case for three counsel to be employed.

Mr. Justice Byrne: All I can say is, but I do not want to say it as negativing a case for three counsel, that this has been conducted by a fewer number than three with the utmost skill and ability on one side.

Mr. Levett: I quite agree.

Mr. Kerly: My friend, Mr. Parker, has asked me to ask your Lordship for the Comptroller's costs.

Mr. Justice Byrne: Yes, costs of the motion.

Elliman's Embrocation.

On Tuesday, December 15, 1903, Mr. Justice Farwell had before him the action of Elliman *v.* Sequah, in which, upon the motion of the plaintiff, who is proprietor and manufacturer of "Elliman's Embrocation," his Lordship, a few weeks ago, granted an injunction restraining the defendant and his wife (who were then travelling in Cumberland and selling remedies for various ailments) from infringing the plaintiff's rights in regard to his celebrated embrocation.

Mr. Austin Cartmell, who appeared for the plaintiff, now moved, in default of appearance by the defendants, for a continuation of the interim injunction restraining the defendants from doing the acts complained of, together with an inquiry as to damages and costs to date. Mr. Cartmell added that the parties had been sued as Father Sequah and Madame Sequah, but their real names were Rhoda Crichton and Sarah Crichton.

His Lordship said Mr. Cartmell must take his own course as to that, but he granted the order asked for.

Sale of Food and Drugs Acts.

Sweet Spirit of Nitre.

On Thursday, December 10, 1903, at Sheffield Police Court, Martha W. Lee, 154, Fox Street, Sheffield, was summoned for selling a quantity of sweet spirit of nitre, yielding only 1/16th per cent. of nitrous oxide.

A fine of £1, including costs, was imposed.

On Friday, December 11, 1903, at East Dereham, H. W. Gunton, grocer, was charged with selling sweet spirit of nitre which was deficient in active ingredient to the extent of 97 per cent.

Defendant said that the spirit had been sold to him without a guarantee. But it had lost strength by evaporation, and, as it was practically impossible to keep the drug of the standard strength he would undertake not to sell it in future.

The Bench said people selling drugs ought to know their nature and keep them up to standard; but, under all the circumstances, they would dismiss the case.

Magnesia.

On Thursday, December 10, 1903, at Brentford Petty Sessions, George Wilson, grocer and general salesman, East Acton, was summoned for having sold magnesia not of the nature and substance demanded.

Inspector Tylor said he had kept observation on small shops where cheap drugs were sold in small quantities. He visited the defendant's shop, and bought a packet of magnesia, which bore the following label:—"Superior magnesia. Warranted free from adulteration. London." It was analysed, and found to consist of magnesium carbonate. The sample had undergone no change to interfere with the analysis. Defendant had not offered to give the county the least assistance in tracing the wholesale firm, and had continued selling the compound.

Mr. E. Bevan, analyst to the county of Middlesex, corroborated his certificate, and said that he took his standard from the British Pharmacopœia. It was wrong to describe the sample as magnesia. It was inferior in quality, and was cheaper than magnesia.

The Chairman said that he had received a letter from a Mr. Rodwell stating that he supplied the sample six years ago. Since then there had been a change in the system of compounding and labelling, which had made the original labels inoperative.

The Court imposed a nominal fine of 1s. and costs.

Olive Oil.

On Tuesday, December 15, 1903, at the Kensington Petty Sessions, London, before Mr. H. B. Halswell, and other magistrates, Mr. Bartlett Judd (trading as Judd and Co.), 155, Earl's Court Road, Kensington, W., was summoned at the instance of the local borough council for selling to the prejudice of the purchaser "olive oil" alleged not to be of the nature, etc., demanded, by reason of it containing—according to the certificate of the public analyst—at least 97 per cent. of oil other than olive oil, and having the character of arachis oil.

After formal evidence of purchase,

The Defendant stated that the oil in question was served by a lad who was temporarily assisting in the shop. It appeared that the lad was not quite sure what oil was required.

The Bench imposed a fine of £5, with 10s. 6d. costs.

On the same day, at the same Court, Mr. Thomas Tipper, 194, Fulham Road, S.W., was summoned for a similar offence. The oil contained, according to the public analyst's certificate, at least 95 per cent. of oil other than olive oil, and having the character of arachis oil.

Mr. W. Chambers Leete, the Kensington Town Clerk, appeared in support of the summons.

The Defendant stated that shortly before the purchase in question he cut his wrist, and had to leave the shop in charge of his son, who appeared to have sold the wrong oil by mistake. Olive oil at his shop was sold only in sealed bottles.

In answer to the Bench, Defendant admitted that his son was not a "skilled hand."

The Chairman: That amounts practically to an admission of the offence.

Mr. Leete remarked that it was not at all unusual for olive oil to be supplied by chemists or grocers in bottles handed in by the customers.

The defendant was fined £5, with 10s. 6d. costs.

Medicine Stamp Duty Acts.

Neuralgia Mixture.

On Tuesday, December 15, 1903, at Cardiff Police Court, Arthur Stainton Price, chemist, Cowbridge Road, Cardiff, trading as S. Price and Company, was summoned for selling a bottle of neuralgia mixture that was unstamped.

Defendant said the offence was committed by the manager of the Cowbridge Road shop against his express orders. He had given the manager stamps, and told him he must not sell any of the mixture unstamped. The manager, in whose accounts discrepancies had been found, had gone away, and defendant did not know where to find him.

The prosecution contended that even if the mixture was sold unstamped against defendant's orders defendant was nevertheless liable.

The Stipendiary said it was a case for a nominal penalty, and fined defendant 5s. and costs.

POISONING CASES AND INQUESTS.

The number of deaths by poisoning reported during the seven days ended Wednesday, December 16, 1903, was five only:—

Poison.	Accident.	Suicide.
Chloroform	1	—
Coal Gas	—	1
Hydrochloric Acid	—	1
Laudanum	1	—
Morphine	—	1
Total	2	3

Chloroform.—A man at Birmingham died under the influence of chloroform.

Coal Gas.—A man at Stoke Newington committed suicide by inhaling coal gas.

Hydrochloric Acid.—A woman at Liverpool committed suicide by taking spirit of salt. The coroner, at the inquest, commented on the total absence of restrictions on the sale of the acid.

Laudanum.—A woman at Glasgow died from an overdose of laudanum.

Morphine.—A surgeon at Reading committed suicide by taking morphine.

A Doctor's Medicine.—At an inquest at Crook, near Darlington, on the body of a man who had died from heart disease, shortly after taking the contents of a bottle containing poison, it was stated that the bottle had been supplied by a medical man for outward application, but there was nothing to indicate that it contained poison.

A Chemist's Prescription.—At an inquest in Belfast, a chemist who had "prescribed" castor oil for a sick child was censured by the jury, after medical evidence had been given to the effect that castor oil was detrimental to the child's health and probably set up convulsions.

Alleged Criminal Poisoning.—A woman at Armagh was charged with administering tartar emetic to her brother-in-law. The woman was committed for trial.

Attempted Suicide.—Four cases of attempted suicide with laudanum are reported.

"Downright Quackery."—An inquest was held at Lewisham Coroner's Court on Saturday, December 12, before Dr. H. R. Oswald, concerning the death, on December 10, of Emma Spencer (55), of 59, Fernbrook Road, Lewisham.—The evidence showed that the deceased had suffered from deafness, and had been treating herself for that affliction by means of an instrument for the injection of medicated air into the nostrils.—Dr. Bolton, who had conducted a post-mortem examination, stated that in his opinion death was due to perforation of the stomach and heart rupture, caused by excessive vomiting, the result of swallowing some irritant poison. Three bottles supplied with the instrument used by the deceased contained witch-hazel, iodised phenol (not labelled "poison"), and oil of wintergreen. He thought deceased must have misunderstood the directions, and through mismanagement taken the poison. He did not think that the instrument was a proper one to sell to the public, inasmuch as it was necessary to deal with the fluids mentioned.—Mr. H. Payne, representing the firm of "Dr." J. H. Moore and Co., 16, Hart Street, Bloomsbury, stated that the head of the firm was a physician practising in the U.S.A. He remembered supplying the instrument and fluids in question. He was employed by Dr. Moore to sell air medicators.—In reply to the Coroner, witness said he was not qualified to sell poisons, or to practise medicine.—The inquiry was then adjourned till Thursday morning, December 17, when evidence was given to show that the deceased had used the instrument in accordance with the directions. Dr. F. S. Toogood stated that he had examined the preserved stomach and smaller intestines of the deceased, and had been unable to find any evidence of the action of carbolic acid. He was of opinion that the perforation of the stomach was caused by the operator's knife and was not present before death. The Coroner reviewed the evidence, and said there could be no doubt that death was due to rupture of the heart brought about by excessive vomiting, but there was no evidence of poisoning. This "Dr." Moore held himself out as a medical man—his name was on a doorplate as "Dr." Moore, and whether the deceased met her death by means of that poison or not did not make the sale of the poison any the less an infringement of the law. The whole business was downright quackery—no inquiries were made as to what the cause of the deafness might be, but persons were supplied with the instrument and drugs as a panacea for all kinds of deafness. He hoped this case would be a warning to Mr. Payne and to "Dr." Moore to be very careful how they dealt with such drugs. Mr. Ralph Banks (barrister) said steps would be taken to prevent the sale of poisons in future. The jury returned a verdict that death was due to natural causes; but, said the foreman, "the jury condemn the sale for use of instruments and drugs, unless under proper medical supervision of qualified persons who are responsible to the laws of this country."

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

Royal Photographic Society.—A Technical Meeting will be held on Tuesday, December 22, at 66, Russell Square, at 8 p.m. A paper on "Combined Development and Fixing" will be read by Mr. T. Thorne Baker, F.C.S.

Arsenic in Beer.—The action of Bostock *v.* Nicholson, on account of the sale of sulphuric acid alleged to be contaminated with arsenic, was mentioned on Monday in the High Court of Justice, the plaintiffs asking that the case should be postponed until March. The request was not acceded to.

A Radium Lecture.—An interesting lecture on radium, with demonstrations, was given on Tuesday by Dr. E. B. Hazleton at a meeting of the Sheffield Microscopical Society. Besides its unknown possibilities as a cure for cancer, it was said that radium appeared suitable for the treatment of pulmonary tuberculosis, as the emanations might be inhaled to do their work at the seat of the disease.

The Wholesale Drug Trade in Glasgow.—Our Glasgow correspondent writes:—"Wholesale drug business evidently requires some looking after in Glasgow, as I hear one of the local houses anticipates putting a second town traveller on. The ground seems too much for one to get over in the week. There is not much need for a want book at present, but soon we shall be able to dispense with any such antiquated superfluity."

Revision of Postal Regulations.—On and after January 1 the postage to be prepaid on parcels to and from India, Burmah, Aden, Berbera, Perim, Zalia, and certain places on or near the Persian Gulf will be:—Not over 3lb., by sea direct, 1s., *viâ* France and Italy, 2s.; not over 7lb., 2s. by sea direct, and 3s. *viâ* France and Italy; not over 11lb., 3s. by sea direct, and 4s. *viâ* France and Italy. Several new regulations with regard to the inland halfpenny post will also come into effect with the New Year.

The Food of the Gods.—In the Christmas number of *Pearson's Magazine* the first instalment appears of a story by Mr. H. G. Wells, entitled "The Food of the Gods." The characters who are first introduced to the reader are Professor Redwood and "Bensington," the latter of whom is described as a very bald old gentleman who had won fame by his researches on the more toxic alkaloids. The narrator of the tale met the Professor at an educational conference in Bloomsbury. The "scientific" theories propounded by the professors are commended to the consideration of pharmacists.

Bradford Chamber of Trades.—Rather a conspicuous part was taken by chemists on the occasion of the first dinner of the Bradford Chamber of Trades, which was held at the Great Northern Victoria Hotel, on Tuesday evening, and was a very notable success. Amongst those at the top table were Mr. A. H. Waddington, a Vice-President, Mr. B. Rogerson, the Honorary Secretary, and Mr. R. C. Walshaw, President of the Huddersfield Chemists' Association, while Mr. R. W. Silson was also present. The Chamber of Trades was honoured by the presence of Mr. J. L. Wanklyn, M.P., and the Mayor of Bradford.

A New Journal for Practical Pharmacy.—The Council of the German Apothekerverein has decided to embark in 1904 on a new enterprise in pharmaceutical journalistic literature that will be warmly welcomed by all practical pharmacists. The new publication is to be issued quarterly, and to be called *The Quarterly Journal of Practical Pharmacy*, and H. Salzmann and W. Wobbe are to be the editors. Its object is to keep the pharmacist abreast of the times and everything relating to the practice of pharmacy. It will concisely but exhaustively deal with all novelties in chemistry, pharmacognosy, and therapeutics, and will contain in addition notices of new apparatus, machines, books, etc.

Frauds by a Chemist's Assistant.—At Birmingham Assizes, on the 11th inst., Charles Dobbs (20), a chemist's assistant, pleaded guilty to having forged orders for medicines, appliances, etc., with intent to defraud. A detective-inspector informed the Court that the accused had dealt with two cheques contained in letters stolen from an accountant's letter-box in 1901. He absconded then, but returned recently, and there had since been constant complaints of forgeries similar to those with which he was now charged. In fact, when arrested, he had in his possession several forged orders ready for uttering. The accused had also obtained money by begging letters sent to eminent actors, Sir Henry Irving amongst them. Mr. Justice Bigham described Dobbs as a "thoroughly bad character," and passed sentence of twelve months' hard labour.

The Nobel Prizes.—The winners of the four Noble prizes awarded by Swedish institutions are—for physics, Professor Henri Becquerel, of Paris, divided with M. and Mme. Curie, of Paris; for chemistry, Professor Arrhenius, of Stockholm; for medicine, Professor Finsen, of Copenhagen; for literature, M. Björnstjerne Björnsen, of Christiania. The formal distribution of the prizes took place on the 10th inst. at Stockholm, in the presence of the King and several members of the Royal Family. MM. Becquerel, Arrhenius, and Björnsen received their prizes, with the diploma and Nobel gold medal, from the hands of the King. The absent prize-winners, Professor Finsen and M. and Mme. Curie, were represented by the Danish and French Ministers. At a meeting of the Phototherapeutic Institute in celebration of Professor Finsen's success, it was announced that Professor Finsen had decided to give 50,000 kroner (£2,753) from the amount awarded to him to the institute.

Edinburgh Pharmacy Athletic Club.—The twelfth annual smoking concert of this club was brought off most successfully on Monday, December 14, in the Imperial Hotel, Mr. Peter Boa in the chair. The whole proceedings were thoroughly enjoyed by all present, the members of the trade showing themselves in large numbers. The concert was opened with a song by Mr. J. P. Gibb, President of the Club. Afterwards there followed a long and varied programme of vocal and instrumental music, interspersed with comedians and an exhibition of Indian club swinging by Mr. Victor Joseph, of Edinburgh. The Cynthia Quartet also favoured the company (without accompaniment). Mr. J. P. Sandison was at the piano. The toast of "The Club," proposed by the Chairman, was received with great enthusiasm. A hearty vote of thanks to the Chairman for presiding brought proceedings to a close a little after twelve, when the singing of "Auld Lang Syne" and "God Save the King" terminated a most enjoyable evening

Scotch Educational Department—Leaving Certificates.—At a recent meeting of the directors of the Inverness Royal Academy, the Secretary was directed to write to the Department to permit the examination paper set in Gaelic to count as one of the class subjects for leaving certificates. The following is the reply received from the Scotch Education Office:—"I have the honour to acknowledge the receipt of your letter of the 5th inst. I am directed to state that while cordially recognising the spirit shown in the formation and maintenance of such a class, my lords feel that there are grave difficulties involved in bringing within the scope of the Leaving Certificate Examination a subject which is not an ordinary class subject, and the study of which forms no part of the regular work of the school. I am to suggest for your consideration whether it might not be desirable to apply for recognition of this work under the conditions of the Continuation Class Code. In the event of such recognition being applied for and granted, the candidate's knowledge of the subject might be testified to, through certificates bearing the imprimatur of this department." Although the Department will not recognise Gaelic as a class-subject, enthusiastic scholars of this language will not rest on their oars, for they have enlisted the sympathy of the Scottish Educational Institute, who are again to approach the Department.

A Social Evening in the City.—On Saturday, December 12, the staff of Messrs. C. J. Hewlett and Son held their sixth social evening at the Three Nuns Hotel, Aldgate, E.C. The company numbered nearly 100, and sat down at 6.30 to an excellent dinner, under the chairmanship of Mr. E. J. Millard, F.C.S. The loyal toasts having been honoured, the Chairman proposed the health of Mr. John C. Hewlett, and described the happy event which had taken place that day at Beckenham—the marriage of Miss Hewlett to Mr. Newton. He mentioned that prominently displayed amongst the numerous presents was the silver cake basket presented by the staff. Continuing, the Chairman referred to the steady progress that had been made in business during the year, and expressed his pleasure at seeing so many of the firm's representatives present. A smoking concert followed, and the songs by Mr. J. A. Eveness and Mr. J. Davies were warmly applauded, whilst the comic songs of Messrs. Will Webb, E. Thompson, and Will Cragg earned encores. A special feature was the clever rapid sketches of statesmen and others by Mr. W. Rowley. The songs were accompanied by Mr. F. W. Hull. Before the close Mr. E. W. Palin, the firm's Indian representative, proposed the health of the Chairman, referring to the fact that twenty-two years ago he was a clerk in the employ of the firm, and how pleased he was to find quite a number present that evening who were with him then. The Chairman having briefly replied, a vote of thanks to those who had assisted to make the evening so enjoyable a success was passed, and the proceedings terminated.

The Sale of Cocaine in India.—The abuse of cocaine among the natives of India has led the authorities of Bombay to take very stringent measures to prevent its illegitimate sale, and in August last the sale was restricted to a number of licence-holders specially selected by the Alkari department. Native vendors have been prosecuted in large numbers, and importers of cocaine who were unable to obtain licences have found themselves with large quantities of cocaine, which they have been unable to clear in the ordinary way of business. In their anxiety to restrict the sale of the drug. the authorities have recently issued the following notice to the holders of licences:—"To licence-holders, and upon medical prescriptions only, signed by qualified medical men, the following maximum quantity of cocaine may be supplied:—(1) Where it is in a dry state, 6 grains; (2) where it is in solution, 2 drachms. The original licence must be seen before supplying cocaine." What will be the outcome of this notice remains to be seen, but the chemist—until the notice has been considerably altered, will find himself in a peculiar position with regard to the dispensing of his prescriptions which contain cocaine. The only conclusion that can be drawn from the notice is that the authorities who are undertaking the restriction of the drug do not understand the nature of the difficulties with which they have to contend. An easy way out of the difficulty would be to appoint a committee of medical men, or qualified chemists, to arrange the preliminaries.

The Annual Dinner of the Hanover C.C.—The first annual dinner and smoking concert of the Hanover Cricket Club (Evans Sons Lescher and Webb, Limited) was held on Saturday evening, December 12, at the Lisbon Restaurant, Liverpool. Between fifty and sixty members and friends were present, under the chairmanship of W. P. Evans, Esq., who was supported by Messrs. J. H. E. Evans, K. W. E. Evans, G. M. McLoughlin, J. Tirebuck, J. C. Turner, and N. W. Rutter. After the loyal toast had been honoured, the Chairman, in proposing the Hanover Cricket Club, said, when he was asked to become the President, he was very pleased to accept the position, for it reminded him of other days. The club seemed to have started with small numbers, but he trusted there would be a good increase next year. He had promised to give a bat to the member at the top of the averages, and the prize for batting had been won by Mr. Harper, while the bowling prize went to Mr. Marsh. He hoped they would be able to get up a few more musical evenings during the coming winter, and he would say that the directors of the company would do their best to help the club. Mr. Garrow said it gave him very great pleasure to respond to the toast, and he was sure all the members would join with him in thanking the Chairman for being present that evening. In the unavoidable absence of Mr. J. Shacklady, who was away on business, Mr. J. C. Turner briefly proposed "The Allied Firms," and Mr. J. H. E. Evans, in responding, thought a great deal might come out of the club, as it helped on good feeling, and was in the interests of all. Mr. K. W. E. Evans said it gave him very great pleasure to support the response. In reference to the proposed football club, he would be very pleased to give all the assistance he could, either by playing whenever possible, or by arranging matches. Mr. G. M. McLoughlin, in a brief and suitable speech, then proposed "Our President," and Mr. W. P. Evans, in returning thanks, said he was much gratified by the kind way in which they had received him. Other toasts included "The Secretaries," and "The Visitors." Among those who helped to make the evening enjoyable were Messrs. Garnett, Hughes, Robbins, Isaac, Peyton, Rawlands, and Ellis, who all sang various songs. Mr. Rowse gave selections on the English concertina, Mr. Birchall a reading, whilst Mr. Kennison proved an efficient accompanist.

Cancer Investigation.—A joint paper by Professor Farmer, Mr. Moore, and Mr. Walker was read before the Royal Society on the 10th inst., in which the results of an investigation into the structure of the cells in malignant growths occurring in man were communicated. These investigations have revealed a striking resemblance between the formation of sexual reproductive tissue and that of cancerous growths. The authors have rejected the hypotheses as to a parasitic origin of the disease, and also the views advocated by Cohnheim, according to which the growths are due to awakening activity in nests of "embryonic tissue" abnormally persisting in the organism after the embryonic stages have been passed. The changes in cells that are about to produce reproductive or germ cells are highly characteristic, differing very materially from the changes observed in cells destined to produce the ordinary tissues of the body. When a cell forming part of one of the ordinary tissues of the body is about to divide, its nucleus passes through a series of changes, of which one of the most remarkable is the appearance of chromosomes. The number of these chromosomes is constant in each species of animal and plant, and does not vary during subsequent divisions, so long as only ordinary body tissue is produced. In reproductive (not "embryonic") tissues, however, the cells, at a certain stage, undergo a special and very characteristic form of division, in which the chromosomes present a different appearance, and reappear in only half the number proper to the species to which the particular organism belongs. The descendants of these cells retain the reduced number of chromosomes in subsequent divisions until they finally produce those germ cells to which they normally give rise. When two of these germ cells fuse, the resulting cell again gives rise to a new individual, the cells of which possess the normal number of chromosomes. The authors have identified, near the growing edges of malignant growths, cells which are quite similar to those occurring normally in reproductive tissue, and they regard the conversion of previously normal cells into tissue which has assumed the essential features of reproductive or germinal tissue as being the immediate cause of the malignancy of the new growth. The tissue is described as germinal, and not embryonic, for in the latter the nuclei do not possess a reduced number of chromosomes. Cells which thus originate (as germ cells) exhibit in the normal life history of an organism the independence of growth and parasitic mode of nutrition which distinguishes malignant growths. The changes indicated have not been observed in benign tumours or ordinary inflammatory tissues; hence it would seem that they may be used as diagnostic signs, differentiating malignant from benign tumours. The causes that produce a germinal tissue from the normal cells of the body must doubtless be sought among physiological stimuli. Some of these are known to derange normal functions and to produce changes of form and structure.

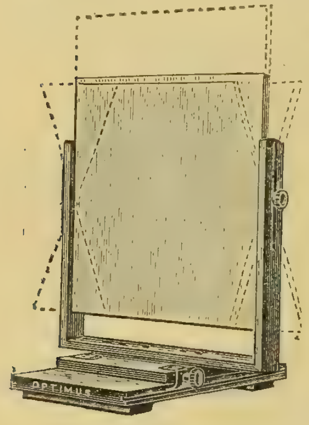
TRADE NOTES.

The Attention of the Daughters and Wives of registered chemists is drawn to an interesting competition instituted by Messrs. Wright, Layman, and Umney. Quite a number of replies have, we understand, already been sent in, and some of the contributions are very clever and ingenious. Competitors should send in the results of their work to Department "P," Wright, Laymen, and Umney, 48, Southwark Street, London, S.E., and must arrive not later than December 23. Full particulars of the competition will be found in the advertisement pages of the Journal.

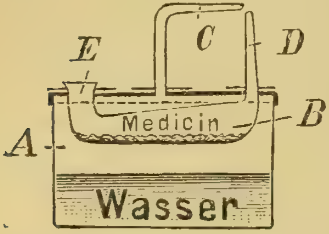
The Optimus Perfect Enlarger is an instrument placed on the market by the firm of Messrs. Perken, Son and Co., Limited. The stage where negative is inserted is open at the top, so enabling portions of large negatives to be included. The carriers supplied with the apparatus are square in their outside dimensions, and thus the negative can be placed in the apparatus either vertically or horizontally. The light chamber, which is suitable for any form of illuminant is adjusted to and from the condenser by means of a rack and pinion (a wide range of adjustment being provided), and thus reducing as well as enlarging is within the capabilities of the instrument. Each apparatus is supplied with fine focussing adjustment.

P.A.T.A. Additions.—Messrs. Savory and Moore, 143, New Bond Street, London, W., have added to the list of protected articles Savory and Moore's Food, the minimum price of the shilling size of which is now 9d.; the firm's peptonised preparations and pancreatic emulsion amongst others are also on the list. The British Iron Milk Syndicate, 115, Strand, E.C., add Dolle's Iron Milk. Thomas Christy and Co., 4, Old Swan Lane, E.C., have placed their Zepto Tartar Remover on the list. Other firms who have protected the prices of various preparations include J. and J. Canavan, The Harvey Turner Company, Jewsbury and Brown, Lewis and Cooper, Raimes and Co., Cheltine Foods, Limited, Warrick Brothers, and the proprietors of Maddock's Old English Lavender Water.

The Optimus Swinging Easel, manufactured by Messrs. Perken, Son, and Co., Limited, 99, Hatton Garden, London, E.C., is specially devised for the correction of the vertical lines in defective negatives. The defects are very common in snap-shot negatives where the camera has been tilted. The easels are made of well-seasoned polished pine. There is a rack and pinion to focus sharply whilst closely viewing the enlarged picture on the papered surface of the easel. Heightening and lowering adjustments are provided, and in fact everything has been arranged to conduce to perfect results combined with easy manipulation.



Apparatus for Vaporising Liquids.—The accompanying block illustrates an apparatus manufactured by Otto Gentsch, Magdeburg, for the purpose of transforming liquids into vapour for the purposes of medical application. The apparatus consists of a boiler A, a glass reservoir B, two narrow tubes C and D, and a short tube E. The points of C and D are situated in such a manner, that (1) the steam produced in A issuing through C and passing at the muzzle of D effects a partial vacuum in B, and carries along with it through its sucking power, so to speak, the medicinal vapour therein generated; the air of the sick room thus becomes impregnated. A stream of fresh air continually passes through B (entering through E and issuing through D), and gets into a very close contact with the medicament.



SCHOOL AND COLLEGE NEWS.

London College of Pharmacy.—The annual dinner and distribution of prizes will be held at the Venetian Chamber, Holborn Restaurant, on January 15, 1904. Invitations will be sent to all students, past and present. Should any student not receive his invitation by Christmas, he is requested to send a notice to the Secretary, with his present address.

COMPANY INTELLIGENCE.

Hygienic Soap Granulator Company, Limited.—Capital £30,000 in £1 shares. Object, to adopt an agreement with R. W. Cavenaugh and J. McLeod, and to carry on the business of soap manufacturers and vendors, chemists, etc. Registered office, 171, Queen Victoria Street, E.C.

Middleton and Co., Limited (Chemists, Middlesbrough).—£1,000 debentures, created November 9, and dated November 17, 1903, charged on the company's undertaking and property, present and future, including uncalled capital (if any), have been registered. No trustees. Holders, Barclay and Co. Limited.

Benson Harries, Limited.—Registered with a capital of £500 in 10s. shares (500 preference), to acquire the business of a manufacturing, wholesale, and retail chemist, carried on at 84, Commercial Road, Newport, Mon., and to carry on the same and the business of dentists, opticians, druggists, drysalters, etc.

Alfred Sadler and Co., Limited.—Capital, £15,000 in £1 shares (7,000 five per cent. cumulative preference). Object, to acquire the freehold premises, Nos. 1, 2, and 3, Church Street, Tamworth, Staffordshire, and the business carried on there as Alfred Sadler and Co., and to carry on the business of grocers, chemists, druggists, etc.

Camwal, Limited.—A general meeting of the shareholders of this company was held at Anderton's Hotel, Fleet Street, London, E.C., on December 15. The report, which recommended the carrying forward of more than £800 in excess of last year's balance, the payment in full on the preference shares, but no dividend on the ordinary shares was, after kindly criticism by Mr. Theophilus Nicholls and others, adopted. Messrs. Montague Davenport, J.P., C.A., and F. A. Gould were reappointed directors, and the auditors were re-elected.

The Capsuloid Company, Limited.—The general meeting of the shareholders of the Capsuloid Company, Limited, was held at the company's offices, 31, Snow Hill, London, when a dividend of 7 per cent. was declared on the ordinary shares. This company was formed a year ago to purchase the business of the Capsuloid Company, which had been in existence for seven or eight years, and which was doing business both in England and on the Continent. During the past year the business has been extended and enlarged. The Company has placed another proprietary medicine on the market called "Tablones," which has met with considerable favour. It is the Company's intention to advertise "Tablones" extensively.

W. T. Owbridge, Limited.—Capital £35,000 in £10 shares Objects: To acquire as a going concern the business of a manufacturing chemist, etc., formerly carried on by the late W. T. Owbridge, at the Laboratory, Osborne Street, Hull, and elsewhere, in particular to acquire the recipes for and right to manufacture and deal in certain medicinal preparations known as "Owbridge's Lung Tonic," "Owbridge's Embrocation," "Owbridge's Atoms of Health," "Owbridge's Pills," "Owbridge's Pile Salve," "Owbridge's Dog Powders," "Owbridge's Dicti Water," and "Owbridge's Brown Salve," to adopt an agreement with Emma Owbridge, E. F. Ingleby and F. W. Owbridge to manufacture and sell the above-mentioned medicines, and to carry on the business of chemists, druggists, chemical manufacturers, and dealers, etc. Registered office, The Laboratory, Osborne Street, Hull.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. Robert Ellis, pharmaceutical chemist, Aberystwith, delivered a lecture recently in that town on "Air : Pure and Impure."

Mr. H. J. Howlett, chemist and druggist, has purchased the business carried on at Station Road, Harpenden, by Mr. H. W. Pound.

Messrs. David Thom, Domeier and Co., Limited, late of 13, St. Mary-at-Hill, have removed to 20 and 21, Harp Lane, Great Tower Street, London, E.C.

Mr. J. R. Peacock, Stirling Road, Glasgow, has acquired the business of Mr. D. S. C. Reid, 156, New City Road, Mr. Reid having qualified as a medical practitioner.

Mr. W. A. Russell, chemist, lately with Messrs. Simpson and Co., New City Road, Glasgow, has taken over the business of his brother, Mr. J. A. Russell, at 212, New City Road.

Miss M. Macnie, 67, George Street, Glasgow, has acquired the business of the late Mr. G. Muir, at 166, Cumberland Street, S. S., and with the assistance of qualified lady assistants will carry on both businesses.

Mr. D. F. Ritchie, M.P.S., pharmaceutical chemist, of 69, High Street, Newport, I.W., has just opened a new pharmacy in that town. Mr. Ritchie was formerly laboratory manager to Davies, Gibbins, and Co., Derby.

Mr. Robert Tocher, Ph.C., F.S.M.C., Member of the Optical Society, London, has been unanimously elected President of the Glasgow Optical Society for the ensuing year. Mr. Tocher's personal connection with pharmacy has already had considerable influence on local chemists interested in optics to become members of this society.

Mr. Thomas Cooper, chemist and druggist, Macclesfield, at a meeting of the Macclesfield and District Tradesmen's Association last week, proposed that a protest against the cash-on-delivery postal system be sent to the Postmaster-General. The proposal was adopted.

J. J. Tremeer, the oldest chemist and druggist in Barnstaple, has disposed of his business to Mr. W. J. Shepperd, from New Bond Street, London. Mr. Tremeer is a justice of the peace for the borough, and is practically a Barumite, having served his apprenticeship to the late Alderman Norrington, of High Street, Barnstaple.

Lieutenant-Colonel Clifford Probyn, J.P., L.C.C., was presented at a meeting of the Westminster City Council with an illuminated address in recognition of his services as Mayor of the city in 1901-2. There was also unveiled a portrait in oils of Colonel Probyn, which had been subscribed for by the Council and the citizens of Westminster. A handsome diamond pendant was presented to Mrs. Probyn.

Mr. C. F. Carr, of Sheffield, is leaving the city at the end of the year to enter into partnership with Mr. R. FitzHugh, J.P., of 21, Long Row, Nottingham. Mr. Carr, who was born at Normanton, in Yorkshire, went to Sheffield between eight and nine years ago, and has been with Mr. G. T. W. Newsholme ever since. He joined the Sheffield Pharmaceutical and Chemical Society soon after his arrival in the city, and has taken a prominent part in its affairs. For the past three years he has been one of the Vice-Presidents. The business with which he will henceforth be associated is very old-established, and one of the leading pharmacies of Nottingham. Mr. Carr has many friends of the craft in Sheffield, and leaves with their united wishes for his success.

Mr. C. A. Johnstone, who has now been connected with the firm of Messrs. James Woolley, Sons and Co., Limited, Manchester, for fifty years, was presented by the directors and staff of that firm, on Saturday, the 12th inst., with a silver casket and illuminated address, in celebration of the "jubilee." The presentation was made at the annual staff dinner and smoking concert of the firm. Mr. W. Lane, Mr. Geo. S. Woolley, Sir James Hoy, and other speakers paid a hearty tribute to Mr. Johnstone's personal character, and to the great services which he had rendered during the past fifty years. Mr. Woolley, who made the presentation, stated that the President of the Pharmaceutical Society, Mr. Atkins, was only prevented from attending that evening by a prior engagement. Mr. Johnstone feelingly replied. Other toasts followed, the proceedings throughout being of the most enthusiastic character. The address presented to Mr. Johnstone ran as follows :—"We, your co-directors and members of the staff of Messrs. Jas. Woolley, Sons and Co., Limited, desire to offer to you, and to place on record our hearty congratulations on your fifty years' connection with the firm—first, as assistant and representative; secondly, as partner; and, lastly, since the incorporation, as a director, and have witnessed the growth of the firm from comparatively small dimensions to its present magnitude and importance. We unite in recognising your uprightness of character, your unswerving devotion to duty, and your unceasing effort to promote the properity and welfare of the house. We wish also to acknowledge the unvarying courtesy, sympathy, and kindness you have always shown to those either closely or distantly associated with you in the daily routine of business. We assure you that it is the sincere wish of every one of us that you may long retain health and strength to continue a career of usefulness, and to enjoy the well-earned fruits of your long labours; and we beg you to accept this testimonial as a tribute of our esteem and regard, and that you will hand it down to your children, so that they may look back with pride, and recall your honourable connection with the establishment of Jas. Woolley, Sons and Co., Limited."

Ideal Cosmetic Powder.

Zinc oxide, 50 ; calcium carbonate, 300 ; steatite, 50 ; rice or wheat starch, 50 ; triple extract of white rose, 3 ; triple extract of jasmin, 3 ; triple extract of orange flowers, 3 ; triple extract of cassie, 3; tincture of myrrh, 1. Mix.—*Nat. Drugg.*, **33**, 253.

MARKET REPORT.

The quotations given below are the lowest prompt cash prices for bulk quantities, to which other charges have to be added. It is important that this should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

General Markets.

London, Thursday, December 17, 1903.

Business in Drugs and Chemicals cannot be expected to brighten before next year. At present things are exceedingly quiet. At the Spice sales on Wednesday an easier feeling (with few exceptions) prevailed pretty well all round. The prices of Peppermint Oil seem to be stiffening. Menthol is in much the same condition as it was last week. Quinine is extremely quiet, and quotations are only nominal. Crude Camphor is practically unobtainable at present, and in consequence it would not come as a surprise if refiners raised the price. Cod-liver Oil is lower, and little business is passing. The price of Caffeine has been reduced. Cannabis Indica is dearer, and stocks are low. Castoreum sold well at the sales on Wednesday.

ACID CITRIC—Is quoted at 1s. to 1s. 0½d. per lb.

ACID TARTARIC—Is firm. English, on the spot, 1s. 1d.

ALUM.—Lump, £5 12s. 6d. ; and ground, £6 2s. 6d.

ARROWROOT.—Lower prices were accepted at the sales on Wednesday. Over 300 barrels of St. Vincent sold without reserve, common to ordinary manufacturing at 1d. to 1¼d.

BORAX.—Crystals, 13s. 6d. to 14s. 6d. per cwt. ; powder, 15s. 6d. to 16s. 6d.

CAFFEINE—Is lower, and 9s. to 9s. 9d. per lb., according to quantity, are the prices now quoted.

CAMPHOR.—Owing to the raw camphor being practically unobtainable at present, English refiners are unwilling to book large orders. An advance in price of the article before long appears extremely probable.

CANNABIS INDICA—Is dearer at 4s., but stocks are low.

CARBOLIC ACID.—Crystals, 39° to 40°, 5d.

CASTOREUM.—Sold well at the auction on Wednesday.

CINCHONA BARK.—During the first half of the present month the shipments at Java were 591,000 Amsterdam lbs. against 780,000 Amsterdam lbs. last year.

CLOVES.—50 bales Zanzibar were sold without reserve at the spice sales, fair realising 6⅝d. Privately the market is firm, but quiet. The receipts of Zanzibar amounted to only 250 bales during the first half of the month.

COCAINE.—In quantities of 175 ounces the price is 11s. 9d., and for smaller wholesale quantities 12s. 3d. per ounce for the Hydrochloride.

CODEINE—Unchanged at 8s. 11d. per oz. for the pure alkaloid.

COD-LIVER OIL—Is lower at 400s. for fine quality, and 350s. for third quality.

COLCHICUM.—42s. 6d., 45s., and even higher quotations are about.

CREAM OF TARTAR—Firm ; 98 per cent., foreign, powder, 86s. to 87s.

GAMBOGE.—A considerable amount has been sold since last week's auctions at £15, and now £15 7s. 6d. is asked.

GINGER.—About 220 packages Cochin were disposed of at Wednesday's spice sales at about previous prices.

GLYCERIN.—For half-ton lots, 68s. per cwt.

IODIDE OF POTASSIUM.—8s. 9d. per lb. is the convention price.

IODOFORM.—11s. 8d. per lb.

KINO—Is dearer ; one large importer has put up his price to 1s. per lb. ; but there are other lots which can be had at from 6d. upwards.

MENTHOL.—The prices are from 20s. to 21s., according to holder. Quotations at a lower figure are said to have been made.

MERCURIALS—Are unchanged. Calomel, 2s. 8d. ; Corrosive Sublimate, 2s. 4d. ; Red Precipitate, 2s. 11d. ; White Precipitate, 2s. 11½d. ; Mercuric Sulphate, 2s. 4d. per lb.

MORPHINE.—No alteration ; 4s. 6d. to 4s. 8d. per oz. for the Hydrochloride.

NUTMEGS—Were rather easier at the spice sales.

OXALIC ACID.—2⅝d., delivered free, London.

OPIUM.—Considerable business has been done in Persian ; 10s. 3d. was the last price paid, being an advance of 3d. on last week's rates.

PEPPER—Was rather easier at the spice sales on Wednesday.

PEPPERMINT OIL.—The quotations for H.G.H. are 14s. 3d. to 14s. 6d., with a higher parity in New York. The prices asked for the various brands of oil in tins range from 12s. to 13s. 6d. Prices appear to be stiffening all round.

PIMENTO, CINNAMON, AND MACE—Were dull of sale at the spice auctions.

QUININE—Is extremely quiet. The nominal quotation for the sulphate in the second-hand market is 1s. 0⅜d. to 1s. 0½d. The results of the Amsterdam Bark auctions at the time of writing are not to hand.

SAFFRON—Is firm ; the price here is 37s. 6d. to 38s. 6d.

SANDAL WOOD OIL—Is dearer, owing to dearer wood at the November auctions in India.

SASSAFRAS OIL—Is dearer (genuine of high gravity, 2s. 6d.), owing to dearer bark.

SHELLAC.—The market is quiet and about steady.

TURPENTINE.—American, spot, 44s. 3d.

Foreign Markets.

LIQUORICE ROOT.—Most of the country in which liquorice root grows (says Mr. Consul-Stevens, in his report on agriculture in the Trans-caucasus for the year 1903) was more or less flooded during the past season. I do not, however, suppose that the inundations will in any way affect the industry, for considerable difficulty is now being experienced in getting the population, which is kept well employed since the development of the cultivation of cotton in the liquorice-growing country, to collect and bring the root into the factories. Moreover, the liquorice root markets in Europe and in the United States of America are so over-stocked with this article, that it is fully expected that some considerable time will elapse before any resumption of activity in the industry can take place, or before the present stagnant condition of the liquorice root industry will show any signs of animation.

PATENTS AND TRADE MARKS.*

New Patent Applications.

JOINTS OR HINGES FOR SURGICAL PURPOSES (No. 24,076 of 1902).—S. Whitehurst, 68, Albion Street, Brighton. Relates to joints or hinges adapted to surgical appliances, having within the said joint a number of steel balls arranged to run in grooves provided to receive them. The said grooves are arranged in disc form, as in a compass joint. This invention is more particularly designed for use in a knee-joint.

MANUFACTURE OF HYDROCYANIC ACID, AND OF CYANIDE SALTS THEREFROM (No. 72 of 1903).—J. H. Paul, the Albion Chemical Company, Riverside, Charlton, Kent. Calcium ferrocyanide, or the double salt of calcium and potassium ferrocyanide, is heated in conjunction with sulphuric acid of suitable strength, with the result that hydrocyanic acid is yielded. A solution of caustic potash or of caustic soda is treated with the hydrocyanic acid so obtained, a solution of cyanide of potassium or of sodium resulting. This solution is then evaporated and concentrated *in vacuo*, and the above-mentioned cyanides obtained in a solid state.

REFINING OR PURIFYING VISCOSE (No. 21,030 of 1903).—Viscose Syndicate, Limited, 3, New Court, Lincoln's Inn, W.C., and C. F. Cross, 3 and 4, New Court, Lincoln's Inn, W.C. Consists in heating the viscose at or about a temperature of 50° C., and thus bringing it to a stage when the cellulose derivative is insoluble in solutions of bicarbonate of soda, which, when added to the viscose, precipitates the xanthate, which may be further washed with the bicarbonate to remove the impurities, consisting of yellow alkaline bye-products. The precipitation and washing of the xanthate being thus effected by salts of alkaline reaction, the process is rapidly and conveniently carried out without decomposing the sulphur compounds in such a way as to cause separation of sulphur. This treatment has the advantage of economy, the bicarbonate being very cheap, and forming a solution which is saturated with 8 to 9 per cent. of the salt ($NaHCO_3$) and the alkaline salts removed from the crude viscose are also in large proportion convertible into bicarbonates, in which form they are available for use in the purification process above described.

Note.—Opposition to the grant of any of the above-mentioned patent applications must be filed at the Patent Office, on or before January 11, 1904.

IMPROVEMENTS IN SEPARATING ORTHO- AND PARA-TOLUENESULPHAMIDE (No. 848 of 1903).—R. Barge, 1 and 2, Schlosstrasse, Stassfurt, Germany, and L. Givaudan, Rue Gevray, Geneva, Switzerland. Relates to improvements in separating ortho- and para-toluenesulphamide from a mixture thereof by fractionally precipitating, by means of a normal magnesium or ammonium salt, a solution containing a mixture of their alkaline salts. Example:—200 kilos of the mixture of toluenesulphamides containing about 130 kilos of ortho-compound and 70 kilos of para-compound are dissolved in 235 litres of soda lye of 23° Bé. specific gravity, containing 200 Gm. of sodium hydroxide per litre. To this solution 35 kilos of ammonium chloride, dissolved in from 80 to 90 litres of water, are added. The precipitate of ortho-toluenesulphamide is filtered off, its weight being about 110 kilos when dried, while to the filtrate there are added a further 10 kilos of ammonium chloride, precipitating the remaining ortho-toluenesulphamide and part of the para-toluenesulphamide. The precipitate is again treated with ammonium chloride, together with the crude amides. From the mother liquor the remaining para-toluenesulphamide may be precipitated by addition of an ammonium or magnesium salt, or an acid.

MANUFACTURE OF PHENYLGLYCINE-ORTHO-CARBOXYLIC ACID (No. 1,326 of 1903).—O. Imray, Birkbeck Bank Chambers, Southampton Buildings, London. (A communication from Farbwerke vormals Meister, Lucius, and Bruning, of Hoechet a/Main, Germany.) Consists in manufacturing the above acid by heating a mixture of a salt of ortho-chlorobenzoic acid or ortho-bromobenzoic acid, a salt of glycocoll, and an alkali carbonate in the presence of copper or a copper salt in aqueous solution. The yield is almost theoretical.

MANUFACTURE AND PRODUCTION OF METHYLENE CITRIC ACID (No. 1,579 of 1903).—H. E. Newton, 6, Bream's Buildings, Chancery Lane, London. (A communication from the Farbenfabriken vormals F. Bayer and Co., of Elberfeld, Germany.) Consists in heating citric acid with chloromethylic alcohol having the formula $Cl - CH_2 - OH$. Example: To two parts of pulverised citric acid add two parts of dry chloromethylic alcohol. The resulting mixture is heated in an autoclave for about four hours to from 130-140° Centigrade. The cold reaction mass is then dissolved in six parts of boiling water. On cooling the methylene citric acid separates from this solution in the shape of colourless crystals. It is then filtered off and dried. The above example is merely typical, and can be varied within wide limits.

MANUFACTURE OF HYDROSULPHITE SALTS (No. 2,204 of 1903).—J. Y. Johnson, of 47, Lincoln's Inn Fields, London. (A communication from the Badische Anilin and Soda Fabrik, Ludwigshafen o/Rhine, Germany.) Hitherto processes for the manufacture of above salts have been based upon the action of zinc on aqueous solutions of sodium bisulphite or aqueous solutions of sulphur dioxide. The inventors have discovered that by the action of alkali metals (such as potassium or sodium) on sulphur dioxide in the absence of water, or substantially so, but in the presence of other suitable solvents, or diluents, for the sulphur dioxide, such as ordinary commercial ether, or well-cooled alcohol, anhydrous alkali hydrosulphites can be directly obtained, as represented, for instance, by the equation $2Na + 2SO_2 = Na_2S_2O_4$.

Note.—Opposition to the grant of any of the above-mentioned patents must be filed at the Patent Office on or before January 18, 1904.

COSMETIC SUBSTANCES (No. 1,159, of 1903).—E. Langheld, 35, Lindenstrasse, Wandsbeck, Germany. One part of naphthaquinone is dissolved in a sufficient quantity of ether, and the resulting solution mixed with 5 parts of vaseline at the ordinary temperature. The solvent is removed either by blowing off or by distillation at a somewhat higher temperature or *in vacuo*. The residue is a new compound, and may be used as a cosmetic. Instead of the naphthaquinones, β and α, the other naphthaquinones, or the oxy-derivatives, homologues, and isomerides of the naphthaquinones may be employed with the same effective result. Instead of the ether other suitable solvents, which are easily removed—such as methyl alcohol, ethyl alcohol, acetone, chloroforms, petroleum, benzol, and the like—may be used.

Note.—Opposition to the grant of above patent must be filed at the Patent Office on or before January 25, 1904.

New Trade Mark Applications.

"**CIDOLENE**," for disinfectants, by J. Gardner, 25, Forest Road, Dalston, E. 258,057.

"**CLARKSON'S NANBERRY SALVE**," label ("Nanberry" claimed) for a veterinary preparation, by N. Clarkson, Market Place, Richmond, Yorkshire. 258,106.

"**URALINE**" label ("Ural" disclaimed) for a chemical substance taken internally for headache, by R. Dixon, Endcliffe

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* These abridgments of new patent applications and particulars of new applications for trade marks have been specially compiled from official sources, for the *Pharmaceutical Journal*, by Mr. Reginald W. Barker, agent for procuring patents and registering trade marks and designs, 56, Ludgate Hill, London, E.C., from whom any information on the subjects may be obtained. Mr. Barker will also send copies of his 'Trade Mark Notes' and Patent Notes for Inventors' free on application.

Pharmacy, 673, Eccleshall Road, Hunter's Bar, Sheffield. 257,950.

"**CLARK'S MEDICAL LIVER AND KIDNEY SALT**," label, for a liver and kidney salt (for human use), by C. R. Lamb, 8, St. Martin's Court, Newgate Street, Newcastle-on-Tyne. 254,337.

"**SANDOSA**," label for a patent medicine for human use, by R. A. Panchaud, 9, Fenchurch Street, E.C. 255,749.

"**VELVENE**," for chemical substances prepared for use in medicine and pharmacy, by W. E. Robinson, Derby Buildings, Long Row West, Nottingham. 257,032.

"**TATNETTE**," for instruments, apparatus, and contrivances, not medicated, for surgical or curative purposes, etc., by Sykes, Josephine and Co., 280, Regent Street, W. 258,407.

"**PHARMA**," for an infants' food, by J. Taylor, 132, Trongate, Glasgow. 254,702.

"**COLOGNETTES**" ("Cologne" disclaimed), for perfumery etc., by A. Fryers, 111, Station Road, Pendlebury, Lancs. 257,635.

"**DIMPLE**," for perfumed soap, by Lever Brothers, Limited, Port Sunlight, Cheshire. 257,949.

"**CUTIMOL**" ("Cuti" disclaimed), for a toilet preparation for the skin, by A. Rawlins and J. Paul, 26, Grand Parade, Harringay, N. 258,052.

"**VEGLIONE**" Bouquet, for a perfume, by Lecaron and Fils, trading as Gellé Frères, 6, Avenue de l'Opéra, Paris. 258,025.

NOTE.—Opposition to the registration of any of the above-mentioned Trade Marks must be filed at the Patent Office on or before January 9, 1904.

"**QUIVER**," for chemical substances prepared for use in manufactures, photography, and philosophical research and anti-corrosives, by Bahr, Behrend, and Co., 5, Chapel Street, Liverpool. 258,329.

DEVICE of two double flags, for chemical substances prepared for use in manufactures, photography, and philosophical research and anti-corrosives, by Spaull and Schroeder, Lombard House, George Yard, Lombard Street, E.C. 258,556.

"**GRULOS**," for a chemical preparation for veterinary purposes, by B. C. Tipper and Son, 43, Homer Street, Balsall Heath, Birmingham. 256,540.

"**BLYTENE**" ("Blight" and "Blyt" disclaimed), for chemical substances used for horticultural purposes, vermin destroyers, by P. Klameth, Park Nurseries, Bletchley, Buckinghamshire. 257,521.

"**HARLENE**," for chemical substances prepared for use in medicine and pharmacy, by R. G. Edwards, 95 and 96, High Holborn, London. 245,424.

"**GUDERIN**" label, for iron-manganese pepton, being a chemical substance included in Class 3. 257,839.

"**GUDERIN**" (word alone), for iron manganese pepton, aromatic blood-forming materials in liquid form and in the form of pills and powders, all the said goods being chemical substances for medicinal use for man. (257,987.)

"**GUDONOL**," for the same goods as "Guderin" (258,615), all in the name of A. Gude and Co., 82, Prinzen-Allee, Berlin, Germany.

"**WERDYMA**," for patent medicines or specifics for internal and external use (for man), by M. L. Drew, 4, Havelock Terrace, West Marlands, Southampton. 258,026.

"**YOUZIT**" label, with signature (signature only claimed), for embrocation for human use, by J. F. Lindley, Fair View, Grange-over-Sands, Lancs. 258,134.

"**PHENTIN**," for chemical substances prepared for use in medicine and pharmacy, by Co-operative Wholesale Society, Limited, 1, Balloon Street, Manchester. 258,637.

NOTE.—Opposition to the registration of any of the above-mentioned trade marks must be filed at the Patent Office on or before January 16, 1804.

PRACTICAL NOTES AND FORMULÆ.

Nail Polishes.

(1) Putty powder, 30 Gm.; carmine, 0·9 Gm.; rose oil, 6 drops; neroli oil, 5 drops. (2) Putty powder, 30 Gm.; powdered tragacanth, 6 Gm.; glycerin, 1 drop. Rose water sufficient to mass. Solution of carmine sufficient to give a pale rose tint (3) Cinnabar, 3·75 Gm.; emery powder, 30 Gm.; bitter almond oil, 2 drops. After the use of either of the above, polish the nails by means of a leather with a solution of hard paraffin, 3·75 Gm. in chloroform 60 Gm., perfumed with 5 drops of rose oil. By precipitating stannous chloride with soap solution, a mixture of the oleate and stearate of tin may be obtained, which has been employed for many years in America as a nail polish.—*Pharm. Centralh.*, **44**, 626.

Shaving Cream.

Lard, 10, olive or sesame oil, 8, cocoanut oil, 7, are melted together at 35° C., and saponified by the addition of caustic potash solution (4 per cent.), 12·5, and pearlash solution (15 per cent.), 1·5; the alkaline solutions being added in a thin stream and the mixture constantly stirred until saponification is complete and the mass becomes thick. It may then be perfumed with lavender, spike, lemon, and thyme oils.—*Nueste Erfind und Erfahr*, through *Pharm. Centralh.*, **44**, 107.

Gelatin for Silvering Pills.

A solution of gelatin in acetic acid is recommended as the adhesive in silver-coating pills. Gelatin, previously softened in water, 10 parts, is dissolved with heat in acetic acid, 45 parts, and evaporated to the sp. g. 1·15. From 1 to 2 per cent. of alcohol is then added and the mixture allowed to cool. The pills are damped with this, in the proportion of 1 to 3 parts for every 4,000 parts by weight of pills, in the usual way by rotating, then transferred to the silvering vessel. Every 1,000 parts by weight of pills should not take more than 4 to 6 parts of silver leaf.—*Schweiz. Woch. für Chem. und Pharm.*, through *Pharm. Zeit.*, **40**, 331.

Birch-bud Toilet Water.

Alcohol (96 per cent.), 350; water, 70; soft soap, 20; glycerin, 15; essential oil of birch-buds, 5; essence of spring flowers, 10; chlorophyll, *q.s.* to tint. Mix the water with an equal volume of spirit and dissolve the soap in the mixture. Mix the oil and other ingredients with the remainder of the spirit, add the soap solution gradually, agitate well, allow to stand for eight days and filter. For use, dilute with an equal volume of water.—*Pharm. Zeit.*, **48**, 331.

Liquid Baths for Melting-Point Determination.

Heyward Scudder recommends the use of a mixture obtained by boiling together seven parts by weight of sulphuric acid, sp. g. 1·84, and three parts of potassium sulphate. The liquid thus obtained remains clear at ordinary temperatures, and may be heated to 325° C. without boiling. If the proportions employed be six parts of acid and four parts of sulphate, the result is a soft mass at normal temperatures, melting at 60-100° C., and boiling above 365° C. The mixtures are self-clearing, and remain permanently white unless much organic matter gets in. They may then be cleared, if brown, by boiling with a few drops of nitric acid or with a crystal of potassium nitrate. The vapour is so slightly acid that rubber may be used to fasten the capillary to the thermometer, provided the band be kept 1 or 2 Cm. above the surface of the bath. In preparing the bath, after the potassium sulphate has been melted, the two layers should be mixed, or explosive boiling may occur. For temperatures from

360-600° C., Booth has found zinc chloride to give the best results. After use it must be poured out on a tile, since it expands on solidification, and will crack any glass vessel containing it. [These materials would also be useful for baths for fractional distillations between the temperatures indicated. For this purpose, however, we find a bath composed of fusible metal to be more convenient and cleanly.—Ed. *P.J.*]—*Chem. News* **88**, 104.

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

The Ash of Certain Drugs.

I must join issue with my friend Mr. J. C. Umney on his postulate that "it is taken for granted that the records of the ash of drugs are usually made upon whole air-dried substances." If this be admitted, there can be no hope of anything approaching concordance between the results of different workers. What is an "air-dried" drug? Few articles which the analyst has to deal with are so likely to vary in the amount of moisture they may contain as crude drugs. When these contain volatile oil in greatly varying proportions, as well as moisture, it is obvious that this condition of "air-dry" will become still more indefinite. The necessity of first drying the material at 100° C., or even 110° C., to relative constancy, before ashing, appears to me too obvious, if any definite "standard" is to be attained. The fact that crude drugs are often kept for long periods, after they are first prepared, renders it impossible that the amount of contained "moisture" can show anything approaching uniformity. Take, for instance, the "dried" thick roots, such as gentian, taraxacum, or belladonna. When first delivered "dry" from the growers these will contain a notably greater amount of water than after they have been stored for some months in a dry place. Again, in the instance of opium, every pharmacist is familiar with the "air-dry" drug, exteriorly hard enough to break the blade of a knife, but in the interior soft and plastic, so that it may be rolled into pills. In the determination of the ash, it seems that the observation of the ratio of water-soluble to insoluble matter might furnish some useful data, especially in the case of roots, as a means of detecting an undue proportion of adherent earthy impurity.

London, December 9, 1903. J. O. Braithwaite.

I have carefully looked over the issue of the *Pharmaceutical Journal* of December 12, in reference to the subject of the ash of various drugs, as dealt with by Umney and others at the Evening Meeting on December 8. I now wish to point out that the announcement that various authors have in general worked upon air-dried specimens is rather disconcerting, since the atmospheric conditions in various countries of the world are not constant, and it is, therefore, impossible for anyone working in the tropics to bring their work in line with conditions existent in England in August or December. Bearing in mind the existence of air-borne moisture, and also the great and necessary variation in the diameter of various specimens of drugs, it appears to me that those who undertake this work should accept a common basis on which to labour, whereby something definite might be accomplished, upon lines which I now suggest:—

(1) That an average sample be taken of great and small specimens.

(2) That the sample be cut into rough pieces and "sampled," as in assaying.

(3) That the sample selected finally shall be heated to 100° C. for three hours, and allowed to cool in the oven.

(4) That it be then powdered, and a portion selected again by "sampling," which should be ashed.

I am certain that if some such scheme could be adopted much of the variation now existent would lessen or disappear, and the rod which Professor Greenish justly fears would lose its formidable appearance. The scheme I have outlined is within the range of the "man in the shop," of whose limitations academicians are apt at times to lose sight. The objection raised by Mr. E. M. Holmes with regard to the identity of the samples operated upon would disappear also were work conducted under his guidance as an expert botanist, and then divergence from a standard limit (maximum and minimum) would be sufficient to raise suspicion of the analyst as to the value or verity of the sample. Granting the point that ash tests for leaves are of little use comparatively by themselves, they are of some value for barks, roots, and fruits.

Stiles W. G. Rich, Ph.C., F.C.S.

London, December 14, 1903.

The "Tabloid" Case.

No one, I think, will be surprised at the verdict in the "Tabloid" case. But I venture to suggest that something might be done which would go far to prevent misunderstanding in the future. I refer to orders indistinctly given and falling on dull ears. Written orders would, of course, remedy this, and if a suggestion to that effect were added to the little pink circular which accompanies the tabloids, it might prove a real advantage. Perhaps the Secretary of the Pharmaceutical Society might approach Messrs. Burroughs Wellcome and Co. in the interest of chemists generally.

December 16, 1903. "Pharmacien" (264/40).

The Medicine Stamp Difficulty.

The able letter by Mr. Paterson—which I had hoped to see someone else refer to in last week's *P.J.*—recalls to mind the old adage "Every man for himself and the Devil take the hindmost." Dickens knew what a vicious doctrine he was exposing when he gave to the reading public the immortal utterances of Codlin and Short. But, seriously, can the Codlin of Cannon Street succeed in persuading intelligent chemists that all of its actions and utterances have been the actions and utterances of a friend? It will be conceded, I think, that with regard to the "third exemption," the interests of the chemist and druggist are directly opposed to those of the grocer, limited company, huckster, candlestick maker, and the rest. But I find, on turning over the pages of the trade organ in question, that the editor of that paper has been at some considerable pains to give information and assistance to the chemists' trade competitors. "A word of caution," for instance, is given to such of the unqualified as sell quinine and iron tonic:—"Those who are not registered chemists should especially note the Board's suggestion, and either erase the words (previously specified) from the labels or stamp the bottles." Earlier I find the following curiously broad-minded utterance:—"The small shopkeeper and the grocer are closely allied to qualified chemists, as many of the latter, retail and wholesale, are doing good trade in supplying the humbler retailers with low-priced domestic remedies ready for retailing . . . . For the benefit of those who are not familiar with this business, we may quote some titles from one selection of labels." And again, small shopkeepers "are allowed to sell medicines of any kind, not being scheduled poisons or spirituous preparations, if they are not held out by the names or otherwise as remedies," etc. Again, on July 4 (p. 19), this precious friend of chemists devoted an article to showing what a limited company could or could not do with regard to stamped medicines. The trade organ to which I refer seems, in fact, to have been keenly desirous throughout that those outside the hedge which surrounds the qualified man should not be able to complain of any lack of instruction or assistance in the matter. Other examples could be given, but enough has been quoted to prove my point. It is to be hoped that the grocers, limited companies, and general dealers will show their gratitude in a practical form—whether by subscriptions or advertisements—for such broad-minded and disinterested help. It is not every chemist's paper which takes so much trouble to explain to the unqualified just how near to the chemist's preserves they are at liberty to bag the game, and it is greatly to be regretted that any such paper should appear as the organ of the unqualified.

December 14, 1903. "A London Chemist" (261/25).

Pharmaceutical Unity.

In reply to the "advertisement" in last week's Journal, "Wanted a man with a scheme" (see page 883), I beg to offer myself for the post. Here is the idea :—The only real effective method to obtain the desired effect—namely, "the unity of support to the Society"—is a compulsory membership, after the lines of the Incorporated Law Society. All efforts of persuasion, however plausible or winning, will never touch or awaken to a sense of duty the hearts of those non-members who are so short-sighted as not to perceive or realise the benefits of unionism. No, persuasion has been tried and failed; let us have a change. Now is the time ripe for action, and to make a bid for success, and the battle cries are old friends: "One man, one pharmacy"; "one pharmacy, one annual subscription"; "no annual subscription, then no pharmacy." Add a clause to this effect into the new Pharmacy Bill: "That all retail chemists be compelled to pay an annual subscription, and receive in exchange a permit or licence to keep open shop." And until that is done there never will be such a thing as a united body of chemists. Unity is strength; strength means success; and the first and absolute condition of success is unity and organisation. You cannot get away from that. You have got the organisation, but you have not got the unity of all chemists in business. Then, again, another plea for the Society is this: "Make the Society a real, live, useful institution." That is to say, extend its sphere of operations to the commercial side of our calling, and, instead of being a purely professional, scientific, and examining body, let it be a chemists' trade association as well. Let it absorb the Federation of Local Pharmaceutical Associations, the Proprietary Articles' Trade Association, the Chemists' Defence Association, and any other useful trade association. Amalgamate the several subscriptions into one annual payment, raising that payment to £2 2s. or more, with all the advantages of the amalgamated associations, and let the local associations become a branch of the parent at headquarters. Let the executive committee appoint committees of scientific, trade, law, and, if necessary, social interests, to undertake the different sides of our calling and their welfare. These, then, are my suggestions to advertiser, and, taken in conformity with Mr. Tocher's territorial representation, is bound to work, and, what is more, succeed. The remedy is somewhat drastic, and bound to disagree with the digestive organs of some of the body; but, if taken up in the right spirit, is sure to have a beneficial effect in the long run. As to remuneration, I'll leave that to you. The least it is worth is a life membership of the Society.

Brighton, December 14, 1903. C. A. Blamey, M.P.S.

As a student preparing for the Minor I am in a position to endorse many of Mr. Walker's remarks on the subject of Minor men and why they neglect to become members of the Society. But is there not another way of looking at this question? Even if a man is fortunate enough to obtain his certificate at his first attempt, his expenses have been heavy, and if he has had one or more failures these have been considerably increased, and when he does pass his first idea is to cut off all expenses that can be so treated. Naturally, in this frame of mind, he does not think of joining the Society, nor does he alter his mind as time goes on. Now I venture to say that in the majority of cases such as I have described, if that man had, by virtue of passing the Minor, become a member for say, a year, when appealed to at the end of that period to retain his privileges of membership, he would gladly do so, and continue a member of the Society. If some such policy were adopted by the Society I think that the membership would be considerably augmented, as very few would care to let their membership lapse after the expiration of the "time of grace." When a fish is hooked he wants to be played and landed; he may never bite again.

December 11, 1903. "Egdirdla" (263/6).

The Benevolent Fund.

It seems to be an acknowledged fact that the funds of the above are at a lowish ebb. "Country Cousin," in your last issue, suggests an appeal to our lady friends—I presume, in the form of holding bazaars. My suggestion is, "Get the rule altered whereby all chemists and their widows are eligible, and make it like other benevolent societies—only for those members who have been subscribers and their widows. What will be the position in thirty or forty years unless something is done? I say, place the Fund in a businesslike position. Alter the rule, and then, and then only, will those 8,000 or 10,000 chemists come into the fold, or perhaps the majority of them, at 2s. 6d., or an average subscription of say, 5s. Then an income is assured, and, instead of three annuitants, we could elect all comers in a destitute condition. I was pleased to see a past subscriber head the poll. I may say I always plump for those candidates who have been contributors to the Fund. When the rule is altered I shall be pleased to double my present subscription. Trusting some abler pens will take this matter up and do their best to prevent the Fund dying altogether,

London, December 14, 1903. Edward J. Holifield.

"Pro Bono Fraternitatis."

Doubtless it will be admitted that during recent years of increasing competition the professio-commercial avocation of our fraternity, with its limited resources, has had to bear its maximum share of stress and strain; small wonder, then, that many weak and unfortunate members, from no fault of their own, have gone to the wall. That the struggles and misfortunes of life have been too great for them is painfully manifest from perusal of the cases submitted from time to time by the Secretary of the Benevolent Fund, the financial condition of which has only admitted of the election of three annuitants this time. While all the cases are urgent, the appeals of the widows or wives and children of the fallen call especially, I think, for our commiseration, and at this season of peace and goodwill I earnestly appeal to everyone associated with pharmacy to consider the poor and needy. We are fortunate in this connection in having the machinery of the Benevolent Fund of the Pharmaceutical Society in efficient and gratuitous operation, whereby the full benefit of all subscriptions is freely extended to all in need, whether members of the Society or not, hence the inducement and the need for greatly increased funds. Now if all who can would subscribe 2s. 6d. or 5s. (though the Secretary, Mr. Bremridge, 17, Bloomsbury Square, London, will be thankful for larger sums), all urgent cases could be met, and I feel sure that the grateful benedictions of those whom we may have helped will add to the enjoyment of our own Christmas cheer.

Birkdale, December 10, 1903. R. H. Nuttall.

The Temperature of Ignition of Sulphur.

At page 877 of the *Pharmaceutical Journal* H. Moissan is stated to have found 363° C. as the temperature of ignition of sulphur in air. In the *P.J.* (March 1, 1890, page 723) I give the result of experiment, by a method described, which indicates 248° C. as the igniting point of sulphur in air. The experiment conducted independently by Mr. Bertram Blount (*Chemical News,* March 28, 1890, page 153) gives 261° C. I think there is no doubt the actual temperature is very near the former, and not higher than the latter. Mr. Moissan's figure differs from all those hitherto published, and which are quoted in my paper. It would be interesting to know what method he adopted.

Edinburgh, December 15, 1903. J. Rutherford Hill.

The Syphon Trouble.

Plenty of chemists doubt if all the syphons they send out are always returned, but after seven years all trace is generally lost of them. To-day—December 14, 1903—I have just had a syphon returned me that, from certain writing on it, lead me to look into the age. I find the customer had only one from the firm previous to changing her chemist, and that was May 11, 1896—seven and a half years ago. Possibly it had been sent for, and the usual answer given, that it had been sent back. This is not the only case. I had six sent back after about three years, and these I had sent a written application for.

Cambridge, December 14, 1903. Arthur A. Deck.

Viginti-normal Solutions.

Will you allow me space to call attention to an expression used by Mr. Garsed in his excellent paper on "The Assay of Crude Cocaine," on page 787, column 2, top line, he refers to "viginti-normal" solutions, and it is presumably meant for one-twentieth normal. Does the expression convey this meaning? Very few authors have attempted this question, and most avoid the problem. Merck's list, received to-day, has the expressions "deci-normal," "semi-normal," but Anglicises the N/20. Attfield speaks of this as semi-deci-normal in his 'Manual.' Could there not be established some general mode of expression which would be grammatically correct, and convey, at the same time, the right strength of the solution to the mind? Printers and binders speak of "quarto," "octavo," etc., which means that in their dealings with fractional parts they have gone to the Latin Ordinals, and this, it is suggested, would be a convenient way of using the prefix to denote the strength of solutions of fractional parts of normal, as in the case under notice. "Deci" perhaps means "decimo," so, too, "centi" means "centesimo," and hence "vicesimo" would be better than viginti-normal if N/20 was there intended. If exception is taken to this nomenclature because of the length of the prefix, then let the fraction alone be universally adopted.

December 9, 1903. "B. S. C. B." (263/31).

A Question of Labels.

Supplementary to the 'P. J. Form.' No. 10,000 label, do you not think that at this critical time, when all is educate! educate! that chemists, individually and collectively, should initiate an education scheme particularly adapted to their own interests in the form of an additional label inscribed somewhat as follows:—"It is requested, as a consideration of pharmaceutical professional ethics, that the labels on this bottle be erased previous to utilising the bottle for any other purpose"? Is the idea worth anything?

December 7, 1903. "E. G." (262/11).

"Forewarned is Forearmed."

I received this week—as probably other chemists have done—a copy of a chemists' diary for 1904, accompanying which was a list of "So-and-So's" brand chemicals. I think, sir, that after the bitter experience of past years chemists will do well to strenuously oppose the policy of monopoly, carefully veiled though it is, contained in that list. This appears to be the thin end of the wedge, and, gently tapped as time goes on, the day may not be far distant when nearly every drug in a prescription will be followed by the "So-and-So" brand. It only requires a glance through any up-to-date prescription book to reveal the deplorable state already existing in this respect.

Margate, December 8, 1903. "Cave Canem" (262/31).

The Advancement of Pharmacy.

In the Journal for September 5, page 393, there is a very interesting letter from Mr. Ernest Quant. I have been much surprised that such a letter should have elicited no correspondence. Personally, I do not hold with the formation of a new society, but should welcome every effort to make the title pharmaceutical chemist as honourable and worthy as the founders of our Society intended it to be.

London, December 8, 1903. Jno. Ingham.

BIRTHS.

Taylor.—On December 6, at Errol House, Thornhill Square, London, the wife of P. F. Taylor, of a son.

Gardner.—On December 6, at 65, Bousfield Road, New Cross, S.E., to Mr. and Mrs. Hermann Gardner, a son.

DEATHS.

Corfe.—On December 11, Alfred Felix Corfe, Chemist and Druggist, Maidstone. Aged 62. Mr. Corfe, who was a member of the Pharmaceutical Society, was the senior partner in the firm of Corfe and Son, chemists, Gabriel's Hill, Maidstone, where he had been in business for thirty-six years. Death was due to heart disease.

Maish.—On December 12, Edward Maish, Chemist and Druggist, Bristol. Aged 83. Mr. Maish, who had been a member of the Pharmaceutical Society since 1874, was one of the few persons who remembered the Bristol Riots. He frequently sat as assessor under the late Alderman Barrow, and was one of those appointed to collect the income tax for the parish in the days when such service was honorary. He also took an active part in local and Imperial politics.

Pidgeon.—On December 8, John Pidgeon, Chemist and Druggist, Ealing. Aged 76.

Smith.—On December 10, George Forster Smith, Chemist and Druggist, Newcastle-on-Tyne. Aged 67.

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Book on Physiology (E. B.—103/27).—Huxley's 'Lessons in Elementary Physiology' (Macmillan, 4s. 6d.).

Tooth Powder (J. H. G.—263/1).—So far as we can judge, your tooth powder is not likely to be considered liable to duty.

Formulary (T. B.—103/24).—The Inland Revenue authorities decline to entertain any scheme such as you suggest, and insist upon an absence of anything in the nature of secrecy.

Labels (G. C.—103/23).—(1) It is liable. (2) It will still be liable, if the word appears. (3) You must remove the word entirely, if you wish to avoid liability. (4) No. (5) No.

Pharmaceutist (R. A. S.—103/25).—This title and that of "pharmacist" are restricted by the Pharmacy Acts, 1852 and 1868, to persons who are registered as pharmaceutical chemists.

Recipes (J. H.—103/7).—We fail to see how difficulties are likely to arise in connection with the Sale of Food and Drugs Acts, especially if chemists make the preparations in strict accordance with the published recipes.

Cleaning Gold Braid (D. W. McV.—103/22).—A solution of 10 to 15 grains of potassium cyanide in 1 fl. ounce of water, or stronger if necessary, is usually effective. It is best applied with a sponge, and afterwards washed off with water.

Petroleum Stove (C. T. J.—103/11).—The Kitson lamp, which works on the principle you mention, is used exclusively for lighting purposes. We are making enquires as to a stove, arranged on a similar principle, for heating purposes.

Pyro-Acetone Developer (C. T. J.—103/9).—(1) Pyrogallol, 180 grains; sodium sulphite, 4 ounces; water, 10 fl. oz. (2) No. 1 solution, 5 fl. oz.; acetone, 2 fl. oz.; water, 15 fl. oz. The developer must be neutral or faintly alkaline, never acid.

Mist. Sennæ Co. (B. P. H.—103/20).—It is impossible, by calculation, to say exactly what percentage of alcohol there is in compound mixture of senna. Approximately the percentage of absolute alcohol should be between 9·0 and 9·5 per cent.

Drug-Mill (C. T. J.—103/10).—Messrs. Joseph Baker and Sons, Willesden Junction, N.W., supply several patent drug-mills to be turned by hand. The mills are made in several different sizes; the price of the smallest, 10 inches in height, is 17s., while that of a mill 33 inches in height is £5 10s.

Antiseptic Throat Pastilles (W. F.—261/14).—The explanation is that since marking your label "not liable" on November 14, the Inland Revenue authorities have decided to regard the name "Antiseptic Throat Pastilles" as incurring liability. We agree with you as to the unreasonableness of such frequent changes in practice.

Aromatic Fluid Extract of Cascara (C. T. J.—103/8).—Heat 100 C.c. of liquid extract of cascara sagrada with 5 Gm. of potassium hydroxide on a water-bath, adding water from time to time to replace that driven off by heat, until bitterness is no longer to be detected. Flavour the product to taste, with tincture of orange, cinnamon water, and syrup.

Stamped Medicines (J. W.—262/47).—If you have been affixing stamps unnecessarily, you are not obliged to continue the practice. There is nothing surprising in the fact that recipes similar to yours appear in the 'P.J. Formulary.' A cough is doubtless only a symptom, but the question is whether you are prepared to contest the point in the law courts.

Humanised Milk (A. E. D.—103/17).—New milk, 3 pints; cream, 3½ to 4 fl. oz.; milk sugar, 2¼ to 3 oz.; distilled water, 36 fl. ozs. Dissolve the milk sugar in the distilled water, and mix with the milk and cream. Place in bottles filled to the shoulder only, surround the water, which should be boiled for half-an-hour. Then cork and allow the boiling to continue for another half-hour.

Powder Wrappers (E. W. B.—103/18).—It is difficult to say whether "A" and "B" would be considered liable or not, and you should therefore send them in duplicate to Somerset House. We shall be glad to know the result of your inquiry. The label marked "C" should bear an indication where the formula is to be found, or you might give that information on a separate slip.

Artificial Musk (R. H.—103/26).—That used in England is, for the most part, made according to the process patented by Baur. It is said to be much used in scenting toilet soaps, and to be useful for sachets. One writer, however, states that it is not so nice in solution, and another denies that its odour at all resembles that of the natural musk. We have no knowledge of the extent to which artificial musk is used. For the chemistry of artificial musk see Parry's 'Chemistry of Essential Oils,' which can be borrowed from the Library of the Pharmaceutical Society.

Information Wanted.

Jaffray's Infusorial Apparatus (G. H.—103/4).—Address of maker required. Name is believed to be P. J. Nimmo.

Calendar for the Week (Dec. 20—26, 1903).

Days of M	Days of W	Events of the Week.	Sun Rises.	Sun Sets.
20	S	**Fourth Sunday in Advent.**	8.4	3.50
21	M	Michaelmas Law Sittings End.	8.5	3.51
22	Tu	Royal Photographic Society, 66, Russell Square, London, at 8 p.m.—"Combined Development and Fixing," by T. Thorne Baker.	8.5	3.51
23	W	Pharm. Soc. G.B., 36, York Place, Edinburgh, at 8.30 p.m.—Evening Meeting.	8.6	3.52
24	Th	Hugh Miller died, 1856.	8.6	3.52
25	F	Christmas Day.	8.7	3.53
26	S	Bank Holiday.	8.7	3.53

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Alcock, Aldridge, Allison, Antoliffe, Arkle, Arnold, Austin, Barr, Barron, Barry, Bastow, Bates, Bathurst, Baxter, Beckwith, Beeny, Bellamy, Birkbeck, Black, Blackbourn, Blackman, Blain, Blamey, Bloodworth, Blyth, Boa, Bolton, Bowe, Bray, Breeze, Bryon, Buckley, Burgess, Bush, Cairns, Campbell, Chambers, Cleobury, Cocker, Coleman, Cooper, Cox, Craig, Craven, Cree, Crookes, Davenport, Deck, Dennis, Downes, Drayton, Duncan, Edwards, Emsley, Evans, Ewell, Exley, Eyres, Findlay, Fisher, Fletcher, Foden, Forbes, Fritz, Fry, Fuller, Gair, Gardner, Garrett, Gerrard, Gibbs, Godwin, Gradidge, Graham, Grimshaw, Haley, Halley, Hampson, Handford, Hanson, Happold, Hare, Harmer, Harris, Harston, Hathaway, Hay, Highton, Hill, Hobbs, Holifield, Holme, Horrell, Hosking, Howard, Hughes, Icke, Jackson, Jewitt, Johnson, Joint, Keene, Kemp, Kerruish, Kirkby, Knott, Law, Lawrence, Lawson, Lewis, Littleboy, Liversidge, Lowther, MacCreath, Machin, Maclachlan, McMillan, McVitie, Manson, Mather, Matthews, Mawson, Mellor, Mellors, Melville, Metherell, Mills, Mitchell, Mole, Morgan, Morley, Murison, Nelson, Noble, Nuthall, Owen, Pearmond, Pearson, Peck, Penney, Phillips, Pickford, Piddock, Pollard, Preston, Reade, Readman, Rees, Remfry, Rich, Roberts, Rose, Rowell, Rowsell, Sanderson, Savage, Sawdon, Sawyer, Schramm, Sharp, Simpson, Sinca, Smart, Smith, Sowray, Spanton, Spencer, Spurin, Squires, Stephens, Stephenson, Stonelake, Stroud, Sturges, Sturgess, Sunman, Suttie, Taylor, Thomas, Topping, Town, Townsend, Trinder, Troup, Tunbridge, Waddingham, Walker, Wallis, Warren, Webb, West, White, Whittle, Williams, Wilson, Wood, Woolcock, Wylde, Young.

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The Pharmaceutical Journal
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The Journal circulates widely in the United Kingdom, France, Germany, Austria, Italy, Russia, Switzerland, Canada, the United States, South America, India, Australasia, South Africa, etc. It is supplied regularly to the majority of the Chemists and Druggists in business in England, Scotland, and Wales, and to the whole of the members of the Pharmaceutical Society of Great Britain. Orders for Advertisements or for Copies of the Journal should be addressed to the Publishers, 8, Serle Street, London, W.C.

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Annual Subscription, 20s. Post Free; Single Copies, 4d. each, by Post, 4½d.

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CHANGES OF ADDRESS.

Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, should be sent to the SECRETARY, 17, Bloomsbury Square, London, W.C.

The Pharmaceutical Journal Office.

Wednesday, December 23, 1903.

To All Readers of the Journal the Editor and Staff send Yuletide Greetings.

Mr. Justice Joyce has confirmed the reduction of the capital of Homocea, Limited, from £250,000 to £60,000.

"Chewing Wax," containing 23 per cent. of paraffin wax, was the subject of a recent police-court summons, which the Bench dismissed.

The Appeal on Behalf of the Benevolent Fund has met with a generous response from one quarter. Further contributions will be thankfully received.

The 'Pharmaceutical Journal Formulary' is now in the press, and the period for suscribing at the nominal price of five shillings and sixpence is drawing to a close.

In the Preliminary List of those who have accepted Mr. Chamberlain's invitation to serve on the Tariff Commission, no name in any way associated with drugs appears. The chemical trade is represented by Sir Charles Tennant.

Further Particulars concerning the solubility of the chemical substances mentioned in the British Pharmacopœia, being the conclusion of a communication from the Research Laboratory of the Pharmaceutical Society, appear this week.

The Glasgow and West of Scotland Pharmaceutical Association held a meeting last Thursday, when Mr. J. F. Tocher went further into particulars concerning his scheme of territorial representation on the Council of the Pharmaceutical Society.

For Selling Olive Oil adulterated with 95 per cent. of petroleum, a Nottingham tradesman has been fined twenty shillings, with costs. The defendant, a greengrocer, explained that all chemists kept two kinds of olive oil, viz., "olive optimus," and "olive sub"!

Thirty-seven Sets of Answers to the examination paper set in connection with the Students' Competition have been received by the Editor. Several of the competitors have purposely joined the Society as student-associates in order to become eligible for the competition.

For Selling Without a Licence a bottle of medicine described as "Cheshire Bottle," a general dealer of Audley, Staffordshire, has been fined 5s., with costs. The mixture in question, which was both for internal and external application, was recommended, amongst other things, as a cure for calves that had "gurr," and horses with stomach-ache. It was equally beneficial, according to the label, for man and beast, and very efficacious for chilblains and spasms, whilst the dose for children was 20 drops.

The Special Subscription Order Form for the 'Pharmaceutical Journal Formulary' appears this week for the last time, in a special supplement containing a list of the contents of the book. Those members and student-associates who have not already sent in their subscriptions should do so without delay, as the offer cannot be repeated after January 1. Not only has the number of those who have taken advantage of the special offer been far larger than was ever anticipated, but many chemists and druggists, hitherto non-members of the Pharmaceutical Society, have forwarded their guineas to Mr. Bremridge, together with their subscriptions for the 'P.J. Formulary.'

On the Drug and Chemical Market business is practically at a standstill. A brief *résumé* of the year's movements in several articles which have been followed with interest during the past twelve months appears this week.

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FEATURES OF THE MARKETS IN 1903.

It can be said without any fear of contradiction that the year 1903 has been anything but satisfactory as far as the markets in drugs and chemicals are concerned. Nevertheless many articles have been followed with close attention for long periods, and in several cases prices have been phenomenally high. Cascara sagrada commenced the year at the already high price of 30s. per cwt.; its value, however, continued to increase at steady rates almost weekly until September last, when, within a week, from 65s. the price jumped up to 100s. per cwt. Whilst speculative transactions may have contributed in no small measure to this rapid rise, the cause was mainly attributable to the difficulty of obtaining labour to collect the bark. This difficulty is yearly increasing on account of the comparatively low wages paid for this class of work; which, in fact, are considerably less than what farm hands are able to earn. The demand for cascara has also greatly increased during the last few years. Another article, the fluctuating value of which is also concerned with the same labour problem, is senega root. The question has been under consideration by the United States Department of Agriculture, but it is not to be expected that the cultivation of drugs will be allowed to interfere with the production of the more pressing necessities of life, such as cereal products. Cod-liver oil commenced the new year in an elevated position; as a matter of fact it was then priced at about three times its normal value, from that time it continued to get scarcer until stocks were almost cleared, and as much as 500s. was paid last month. The cause of this unprecedented price is by this time known to everybody. As regards the coming fishing season, reports received from Lofoten seem more hopeful. The seals, which last season frightened away the fish collecting at the banks for spawning, are less plentiful, and there seem indications of a bigger catch of fatter fish.

Perhaps the article which has been watched with the greatest interest, both by speculators and dealers, is shellac. Twelve months ago the price of shellac was less than 120s., whilst a week or so back nearly double this price was paid. Speculation, however, has not solely accounted for this; its large and increasing use in the arts, and the employment of this product in the manufacture of the rubber substitute which has, of comparatively recent date, been utilised in covering cables, all these causes have combined to enhance the cost of this article, which, however, now shows signs of declining somewhat. At the beginning of the year the monopoly price for crude camphor was reduced to 150s. But in the summer this advanced again to 175s., while at the time of writing the crude article is practically unobtainable, and it is anticipated that English refiners will raise the price at an early date. Should war be declared between Japan and Russia the value of camphor might reasonably be expected to rise to much higher limits. In March of this year, owing to a rise of 50 per cent. in the price of the metal, the salts of bismuth advanced accordingly. The unfavourable results of the wormseed harvests have accounted for a rise in santonin. Despite the wet weather which prevailed at the time of the gathering of the crop, and the recent troubles in the Near East, the price of opium has not advanced to the extent which was anticipated. Since this time last year the values for the various qualities have, roughly speaking, increased by about 1s. per lb. Hydrochloride of morphine, on the contrary, increased at almost the same rate per ounce, or, more correctly, the price during the year has risen from 3s. 10d. to 4s. 8d. On the other hand, the applications of synthetic chemistry have had the result of lowering the value of codeine.

In the early summer, owing to a report that the bubonic plague had broken out in Callao, it was feared that crude cocaine might advance in price, and accordingly there was a flutter in the London market. The anticipated rise, however, was never an accomplished fact, although for many weeks the market continued firm. Influences were at work in other directions; prohibitive regulations in Bengal and various States of North America, together with outside competition, have combined to effect a repeated reduction in price, so that hydrochloride of cocaine, which was firm at 17s. 6d. six months ago, can now be bought in large wholesale quantities for 12s. An article which has kept up an interesting attitude throughout the year is menthol. From 25s. 6d., the unusually high price quoted on January 1, this article has fallen to about 20s. per lb. It never reached a higher figure than that at which it started the new year, but the price has varied almost weekly, and has been carefully watched both by consumers and speculators. For oil of peppermint, H.G.H., as much as 21s. was paid at the beginning of the year, whilst a few months back a quantity forced on the market was disposed of without reserve at the drug auctions at the rate of 11s. 3d. per lb. From that date, however, owing to the poor results of the American crop, the oil again advanced, and at the present time 14s. 6d. is about the price. It cannot be said that quinine has fluctuated to any marked extent, most of the ups and downs of this article have been at the rate of fractions of a penny, although much speculation has been indulged in. Late in the year the clove market was in an interesting condition, and values rose. Mercurials have suffered two slight declines since January last; on both occasions these were concurrent with, if not entirely due, to a fall in quicksilver. The Convention price of iodides has remained unchanged throughout the year, although on more than one occasion a drop has been feared in consequence of the tactics of outside sellers. The above are, perhaps, the most important changes of the year in the general drug and chemical market.

MEDICINE STAMP DUTY: "BREAKING BULK."

ONE of the still remaining anomalies in the administration of the Medicine Stamp Acts concerns the "breaking of bulk" of stamped packets. The authorities at present permit a licensed dealer to break open stamped packets of medicines purchased from manufacturers or wholesale dealers, and to retail the contents in small quantities without paying further duty. But the retailer is not permitted to do this in the case of his own proprietary articles. In a letter to the *Pharmaceutical Journal*, printed at page 570, Mr. W. R. FIELDING suggested that it would be well if the privilege allowed to licensed vendors in this matter were cancelled by the Board of Inland Revenue. Mr. FIELDING also gave several reasons for his suggestion, and the subject has recently been enlarged upon, at a meeting of the West Ham and District Chemists' Association, by Mr. J. SAVAGE, who pointed out that a large box of "Stedman's powders," containing 216 powders, requires a shilling stamp, and is equivalent to twenty-four small packets of the size which sells for 1s. 1½d. He suggests that under the present ruling the licensed vendor may break open a large packet, and sell nine powders at a time without a new stamp, the loss to the Revenue which such a practice would involve being two shillings. Mr. SAVAGE maintains that the advertising manufacturers secure an undue advantage over the qualified pharmacist, since the former are relieved of the labour and expense of packing small quantities, while the cost and trouble of distribution by the chemist are considerably increased.

A CHRISTMAS PRESENT.

MESSRS. ELLIMAN, SONS AND CO., of Slough, have generously responded to the appeal recently made in the columns of this journal on behalf of the Benevolent Fund, by forwarding to the Secretary—Mr. BREMRIDGE—a contribution of one hundred pounds. This seasonable help to the Fund will be highly appreciated in pharmaceutical circles, and should induce a spirit of emulation amongst those who are in a position to go and do likewise

PRIVATE COMPANIES: AN OFFICIAL LAMENT.

The Board of Trade has issued, as a white paper, its twelfth annual report with regard to the winding-up of limited companies. The greater part of the report consists of statistics and comparative tables. More interesting, however, are the remarks by Mr. John Smith, C.B., Inspector-General in Companies Liquidation, on the increasing number of companies which are now registered without issuing any prospectus or any direct invitation to the public to subscribe for shares. The Committee of the Stock Exchange has interested itself in the matter, and has shown that while in the last six months of 1900 the proportion of companies coming before it with and without a prospectus was 69 per cent. and 31 per cent. respectively, the proportion was almost exactly reversed in the first six months of the present year, the percentage of companies with a prospectus being 39 per cent., and of those without a prospectus 61 per cent. The Committee has urged with reason that, although many respectable companies are privately introduced, the majority of this class are such as to require more rather than less investigation by the purchaser of shares. Mr. Smith remarks that as a result of a House of Lords' decision—in the case of Broderip *v.* Salomon—the complete validity of "one man" companies as legal corporations was definitely established. The provision for winding up companies formed to defraud creditors was omitted from the Companies Act of 1900, and the provision for allotment only on the minimum subscription was restricted in the House of Commons to companies which offered shares for public subscription. The result is, as Mr. Smith laments, that private companies are free from nearly all the restrictions of the Act in regard to the manner of their formation. The evasion of the test of publicity is described as a matter which calls for serious consideration. If, as is not impossible, the growth of the one-man company system forces the matter on the attention of the Legislature, an opportunity may arise for pointing out to the House of Commons that private companies form a means for evading some of the restrictions of the Pharmacy Act as well as those of the Companies Act, 1900.

LONDON UNIVERSITY AND MEDICAL EDUCATION.

Wide publicity has been given in the press to the appeal made by the Senate of the University of London for funds to build and endow an Institute of Medical Sciences under the control of the University. It is proposed, in accordance with the recommendations of the Royal Commission which was appointed to consider the Charter for the "Teaching" University, that the education of medical students in the scientific subjects of the course should be concentrated in one or more central institutions, controlled by one authority; this in lieu of the present system under which such instruction is given in a number of medical schools, sometimes inefficiently equipped. From the letter signed by Lord Rosebery, as Chancellor of the University, and other officials, it is not quite clear whether the centralisation of instruction will apply to pharmacology as well as to chemistry, physics, biology, anatomy, and physiology. For while pharmacology was specified by the Royal Commission, the other five subjects only were suggested by the Faculty of Medicine. The scheme has many advantages. The subjects will be taught in a more uniform and efficient manner, the hospitals, relieved from the necessity of providing for the teaching of preliminary sciences, will be enabled to devote their whole attention to the care of the sick again, and the various medical schools at the hospitals will give their energies solely to the teaching of the clinical subjects of medicine and surgery. It is eminently desirable that the appeal now made for funds shall meet with a generous response. Is it too much to hope, also, that the University authorities will before long see their way to establish a Board of Studies in pharmaceutics and thus give increased recognition to the claims of pharmacy to be numbered among those scientific subjects the study of which it is the work of a university to encourage as best it may? The professor of pharmaceutics to the Pharmaceutical Society is already recognised as a teacher in that subject. Moreover, every year several pharmacists proceed to the degree of Bachelor in the Faculty of Science. There can be no question that many more would follow the same course, to the benefit of all concerned, if a Board of Studies in pharmacy were established.

THE REGISTER OF CHEMISTS AND DRUGGISTS.

The Registrar informs us that he has a list of 236 registered persons whose names he proposes to erase from the Register of Chemists and Druggists on December 31, under authority of Section X. of the Pharmacy Act, 1868. The fact that so large a proportion of qualified men are so indifferent to their registration as to fail to communicate their correct address once a year to the Registrar, 17, Bloomsbury Square, London, is not a pleasing circumstance to dwell upon, but "best men are moulded out of faults," and these particular shortcomings are now touched upon in the hope that the process of regeneration may be accelerated.

THE PHARMACEUTICAL JOURNAL FORMULARY.

As announced last week, the issue of the 'Pharmaceutical Journal Formulary' will be delayed somewhat, but subscribers may depend upon receiving copies as early as possible next month. In a special supplement to this week's Journal, brief particulars are given regarding some of the contents of the book. The volume appears likely to contain about a thousand quarto pages of matter which should prove useful to every chemist and druggist in business, and there is not the least doubt that those who fail to secure copies at the reduced subscription price will afterwards regret the fact. The special offer to Members and Student - Associates of the Pharmaceutical Society is made this week for the last time, as it is now certain that most of the large number of copies being printed will be sold in advance. Whether the book will be reprinted or not depends upon circumstances; in any case, it will probably be out of print shortly after publication, and copies may be unobtainable for some months. Moreover, after publication the price will be raised to one guinea net, and no further copies can be supplied at the present nominal price. A few days still remain, however, during which the special terms will continue, provided the issue is not entirely subscribed for before the expiration of the time.

ABSTRACTS—SCIENTIFIC AND TECHNICAL

A REVIEW OF CURRENT WORK IN PHARMACOPEDICS AND ALLIED SCIENCES

Determination of Carbon Dioxide in the Presence of Chlorine.

C. Offerhaus states that as electrolytic chlorine always contains carbon dioxide, sometimes as much as 5 per cent., he has used the following methods for determining the latter:—The mixed gases were stored in a glass gasometer, and were led through concentrated sulphuric acid before passing into the Bunte's burettes, in which the analyses were carried out. (1) A known volume of the gas was treated in a burette with potassium iodide solution and the liberated iodine titrated as usual, the necessary corrections for temperature and pressure being made. In a second burette, the chlorine and carbon dioxide were both absorbed by N/5 sodium hydroxide solution. On measuring the unabsorbed residue, the volume of the chlorine and carbon dioxide together was obtained, the carbon dioxide being then found by difference. Allowance was made for the fact that the residue of gas was measured when moist. (2) The carbon dioxide and chlorine were absorbed in a burette by exactly 45 C.c. of a N/5 sodium hydroxide solution, the amount of carbonate in which had been previously determined. The alkaline solution was then shaken with 5 to 10 C.c. of 3 per cent. hydrogen peroxide solution, to convert the hypochlorite into chloride ($NaOCl + H_2O_2 = NaCl + H_2O + O_2$). After making the solution up to a known volume with water free from carbon dioxide, the amount of carbonate in it was determined. The author states that chlorine cannot be determined by absorbing the gas in sodium hydroxide solution and titrating the hypochlorite formed, as some chlorate is always produced, even when dilute sodium hydroxide solution is employed.—*Zeits. Angew. Chem.*, **16**, 1,033, through *Journ. Soc. Chem. Ind.*

Colours of Iodides.

In 1892 W. Ackroyd stated a general law of the relation of colour to chemical constitution. Briefly it is that in related compounds of the general formula $AxBy$, as B increases in weight—either in atomic mass or multiple of atomic mass—there is increase of absorption of light in definite manner, so that the visible effect is progression in the metachromatic scale from the white towards the black end. The same writer now states that iodides conform to the law; the more heavily weighted molecules have colours nearer the black end of the scale, while the lighter ones, on the other hand, come nearer the white end. Thus, in vertical series of the periodic classification, arsenic tri-iodide is orange as compared with the red of antimony and bismuth tri-iodides; magnesium, zinc, and cadmium iodides are white, while mercuric iodide is yellow or red. In the periodic groups there are forty-one examples of iodides; only three are apparently unconformable, two of these being doubtful exceptions. When there is more than one iodide of the same metal again there is conformity to the rule, thus:—Hg_2I_2 is olive green, and HgI_2 yellow or red. Again, the result of recent research shows that the element iodine has also a normal colour among the other liquid and solid halogens; their absorption increases from fluorine to iodine through the extremes of white to black. It is amply apparent, therefore, that in a comparable series of compounds having similar molecular structure as represented by the same general formula, we may have colourless or white bodies at one end and coloured substances at the other end.—*Paper read before Brit. Assoc.*, 1903.

The Rusting of Iron.

G. T. Moody has further investigated the causes of the rusting of iron, more particularly with reference to the influence of soluble substances, and finds that the salts of strong acids, such as sodium chloride and sulphate, potassium sulphate, ammonium sulphate, magnesium chloride and sulphate, calcium chloride and sulphate, and potassium chlorate have no retarding influence on rusting. These salts do not combine with and are not decomposed by carbonic acid. Compounds which inhibit rusting may be divided into two classes. The first contains substances having an alkaline reaction, such as sodium carbonate, hydroxide, phosphate and borate, ammonium carbonate, and barium and calcium hydroxides, all of which directly absorb and combine with carbonic acid. The second class includes salts of weak acids, such as potassium and sodium nitrites, sodium formate, sodium acetate, potassium ferrocyanide and chromate. These salts are all decomposed by carbonic acid. Sodium nitrite solution, for example, after exposure to air becomes alkaline and contains sodium carbonate. A solution of 10 Gm. of the nitrite, through which a slow stream of carbon dioxide was passed for nine days, contained 1·585 Gm. of sodium carbonate. It may therefore be concluded that the influence of any particular compound on the atmospheric rusting of iron depends on its behaviour towards carbonic acid, and that only those substances which combine with or are decomposed by carbonic acid inhibit rusting. In the light of various experiments which are described, the aërial rusting of iron cannot be attributed to hydrogen peroxide, but must be regarded as a change involving the interaction of iron and acid and subsequent formation of rust by the oxidation of ferrous salt.—*Proc. Chem. Soc.*, **271**, 239.

Colorimetric Determination of Bismuth.

If an acid aqueous solution of bismuth be treated with a solution of potassium iodide, a brown precipitate of bismuth iodide is produced. If, however, the bismuth solution is added to the potassium iodide an orange-yellow coloration is produced, and it is only on adding an excess of the bismuth solution that a precipitate of bismuth iodide is formed. Plauès has found that the formation of a precipitate is in both cases entirely prevented by the addition of glycerin. Moreover, if the glycerin be present in large amount it prevents the formation of basic salts of bismuth, thus permitting the use of feebly acid solutions. For the colorimetric determination of bismuth two standard solutions are necessary—(1) a strongly glycerinated solution of bismuth; (2) a similar solution of potassium iodide. 1 Gm. of pure bismuth is dissolved in a mixture of 3 C.c. of pure nitric acid (sp. gr. 1·39) and 2·8 of water, according to the method of the French Codex, and the solution made up to 100 C.c. with glycerin. 5 Gm. of potassium iodide is dissolved in 5 C.c. of water, and made up to 100 C.c. with glycerin. This solution must be protected against the light. In applying the method to commercial samples, the solutions compared should contain approximately the same amounts of bismuth. Thus, in examining a specimen of the subnitrate, 1·5 Gm. was dissolved in a flask in just sufficient nitric acid and water; to this 10 C.c. of glycerin and 10 C.c. of the standard solution of potassium iodide were added, and the whole made up to 50 C.c. with glycerin and water. In another flask 10 C.c. of the standard solution of bismuth and 10 C.c. of the iodide solution were mixed and made up to 50 C.c. with glycerin and water. These solutions then had only to be compared by varying the thickness, or by dilution in graduated tubes. The method can also be applied to determine the amount of iodide in a solution.—*Journ. Pharm. Chim.*, **18**, 385, through *Journ. Soc. Chem. Ind.*

SATURATED SOLUTIONS OF SOME OFFICIAL SALTS.

BY HENRY G. GREENISH.

Professor of Pharmacy to the Pharmaceutical Society of Great Britain, and Director of the Pharmacy Research Laboratory.

In determining the solubility of a number of official substances for the reports upon that subject by myself and Mr. F. A. Upsher Smith that have from time to time been published in the *Pharmaceutical Journal*, the specific gravities of a number of saturated solutions were ascertained, and the solubilities of the dissolved salts simultaneously determined. From these data it was easy to calculate the proportion of substance present in a given volume of the saturated solution. This I have done, and I have thought the results to be of sufficient interest to warrant their being recorded in the Journal.

The following table shows:—

(1) The specific gravity of a saturated solution.

(2) The temperature at which that was ascertained.

(3) The number of C.c. of water required to hold in solution 1 Gm. of the substance at that temperature.

(4) The number of grammes of substance in a litre of saturated solution.

(5) The number of avoirdupois ounces in an imperial pint of saturated solution.

(6) The number of grains in a fluid ounce of saturated solution.

The uses to which this table may be put will readily suggest themselves to the practical pharmacist as well as to the prescriber. The substances are calculated as of official, not absolute purity.

	Specific Gravity of Saturated Solution.	Temp. (Fahr.)	C.c. of Water dissolve 1 Gm.	Gm. in 1 Litre Saturated Sol.	Ounces in 1 Pint Sat. Sol.	Grains in 1 Fl. Oz. Sat. Sol.
Acidum chromicum	1·710	61·5	0·59	1075·5	21·51	470·5
Acidum citricum	1·3026	61	0·51	861·7	17·23	377·4
Acidum tartaricum	1·31	58·5	0·71	766·1	15·32	335·2
Alumen (ammonium)	1·0459	59·5	9·95	95·5	1·91	41·8
Alumen (potassium)	1·046	59·5	9·70	97·7	1·95	42·8
Ammonii benzoas	1·0413	59	5·1	170·7	3·41	74·7
Ammonii bromidum	1·2904	59	1·40	537·7	11·75	235·2
Ammonii carbonas	1·094	59·5	3·94	221·5	4·43	96·9
Ammonii chloridum	1·077	60	2·8	472·4	9·45	123·9
Antimonium tartaratum	1·0400	60	17	57·4	1·148	25·0
Borax	1·0206	62	23·69	41·3	0·83	18·1
Calcii chloridum ($CaCl_2$)	1·4096	60	1·41	584·6	11·69	255·8
Calcii chloridum ($CaCl_2 2H_2O$)	1·4096	60	0·82	774·2	15·48	338·7
Chloral hydras	1·513	61·5				
Cupri sulphas	1·193	61	2·79	314·8	6·29	137·7
Ferri sulphas	1·2188	62	1·49	489·4	9·78	214·1
Hydrargyri perchloridum	1·0472	60	17·9	554·0	11·08	24·2
Magnesii sulphas	1·2755	60	0·98	643·9	12·88	281·7
Plumbi acetas	1·2554	60	2·37	372·5	7·45	163·0
Potassa caustica	1·553	60	0·647	942·9	18·86	412·5
Potassii acetas	1·406	59	0·279	1099·2	21·98	480·9
Potassii bicarbonas	1·1688	60	3·21	277·7	5·55	121·5
Potassii bichromas	1·0660	60·5	9·93	97·5	1·95	42·7
Potassii bromidum	1·3615	60	1·59	525·7	10·51	230·0
Potassii chloras	1·0380	61	16·53	59·2	1·18	25·9
Potassii citras	1·520	60	0·55	980·6	19·61	429·0
Potassii iodidum	1·7039	59·5	0·701	996·4	19·92	435·9
Potassii nitras	1·1452	60	3·77	240·1	4·80	105·0
Potassii permanganas	1·0368	60	18·7	52·7	1·05	23·02
Potassii sulphas	1·0784	60·5	9·65	101·3	2·02	44·3
Potassii tartras	1·490	60	0·625	916·9	18·33	401·3
Soda tartarata	1·2713	59	1·138	594·6	11·89	260·1
Sodii arsenas	1·1765	60	4·88	200·0	4·00	87·5
Sodii benzoas	1·1643	59·5	1·64	441·0	8·82	192·9
Sodii bicarbonas	1·0608	63	11·08	87·8	1·76	38·4
Sodii bromidum	1·523	61·5	1·126	716·4	14·33	313·4
Sodii carbonas	1·1608	61	1·66	436·4	8·73	190·9
Sodii chloridum	1·204	61	2·8	316·8	6·34	138·6
Sodii hypophosphis	1·3880	61	0·63	851·5	17·03	372·5
Sodii iodidum	1·8937	59	0·577	1200·9	24·01	525·4
Sodii nitris	1·3474	60	1·36	570·9	11·42	249·8
Sodii phosphas	1·0489	59	6·91	132·6	2·65	58·0
Sodii salicylas	1·2484	59·5	0·83	682·2	13·64	298·5
Sodii sulphas	1·1114	59·5	2·68	302·7	6·05	132·5
Sodii sulphocarbolas	1·0697	59·5	5·48	164·7	3·29	72·0
Zinci acetas ($2H_2O$)	1·165	60	2·40	336·7	6·73	147·3
Zinci acetas ($3H_2O$)	1·165	60	2·11	374·6	7·49	163·9
Zinci sulphas	1·452	59·5	0·65	880·0	17·60	385·0

THE SOLUBILITY OF THE CHEMICAL SUBSTANCES MENTIONED IN THE BRITISH PHARMACOPŒIA.*

BY HENRY G. GREENISH, F.I.C.,

Professor of Pharmaceutics to the Pharmaceutical Society of Great Britain and Director of the Pharmacy Research Laboratory,

and

F. A. UPSHER SMITH,

Demonstrator in the Research Laboratory.

Acidum Benzoicum.

In light, colourless crystals, having an odour of benzoin, and complying with the official qualitative tests.

Solubility in Water.

Completely soluble	1 in 420
Incompletely soluble	1 in 390

Result.—Solubility in water, 1 in 420.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 400
United States Pharmacopœia	1 in about 500
German Pharmacopœia	1 in 370

Solubility in 90 per cent. Alcohol.

Completely soluble	1 in 2·75
Incompletely soluble	1 in 2·5

Result.—Solubility in water, 1 in 2·75.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 3
United States Pharmacopœia	1 in 2 (of 94 per cent. alcohol)

Acidum Gallicum.

In silky, greyish-white colourless needles, complying with the official qualitative tests.

Solubility in Water.

Completely soluble	1 in 105
Incompletely soluble	1 in 100

Result.—Solubility in water, 1 in 105.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 100
United States Pharmacopœia	1 in 100

Acidum Salicylicum.

The natural acid was employed in colourless, prismatic crystals, complying with the official qualitative tests.

Solubility in Water.

Completely soluble	1 in 500
Incompletely soluble	1 in 450

Result.—Solubility in water, 1 in 500.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 500
United States Pharmacopœia	1 in about 450
German Pharmacopœia	1 in 500

In making the above determinations it was observed that the solutions of the acid contained traces of brown suspended flocculent matter.

Solubility in 90 per cent. Alcohol.

Completely soluble	1 in 3·5
Incompletely soluble	1 in 3·0

Result.—Solubility in 3·5.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 3
United States Pharmacopœia	1 in 2·4 (of 94 per cent. alcohol)

Butyl Chloral Hydras.

In small pearly-white crystals of characteristic odour, and complying with the official qualitative requirements.

Solubility in Water.

Completely soluble	1 in 37
Incompletely soluble	1 in 35

Result.—Solubility in water, 1 in 37.

Comparison with Authoritative Statement.—

British Pharmacopœia	1 in 50

Camphora.

In colourless, translucent, crystalline masses, complying with the qualitative tests of the British Pharmacopœia.

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* Communication from the Research Laboratory of the Pharmaceutical Society of Great Britain, and concluded from page 882.

Solubility in 90 per cent. Alcohol.

Completely soluble	1 in 1·25
Incompletely soluble	1 in 1

Result.—Solubility in 90 per cent. alcohol, 1 in 1·25

Comparison with Authoritative Statement.

British Pharmacopœia	1 in 1

Solubility in Chloroform.

Completely soluble	1 in 0·35
Incompletely soluble	1 in 0·30

Result.—Solubility in Chloroform, 1 in 0·35.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 0·25
United States Pharmacopœia	readily soluble

It was found difficult to dissolve it in 1 in 0·25, even with the aid of a water-bath.

Solubility in Olive Oil.

Completely soluble	1 in 3·0
Incompletely soluble	1 in 2·5

Result.—Solubility in olive oil, 1 in 3·0.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 4

Chloral Hydras.

In colourless, non-deliquescent crystals, complying with the official qualitative test. It boiled at 94·4° C. to 96·4° C., and began to solidify at about 46° C.

The official quantitative test is well known to be imperfect. It was modified as follows :—

About 4 Gm. of the sample were shaken for one minute with 50 C.c. of normal solution of potash, and at once titrated with normal sulphuric acid, using phenol-phthalein as indicator. Percentage indicated, 100·9 and 100·4.

If allowed to stand thirty minutes the percentage rose to 101·04, and if in addition the liquid was warmed to 0° C., the percentage rose to 103·8. Hence the titration must be conducted in the cold and without delay.

Solubility in Water.

Completely soluble	1 in 0·25
Incompletely soluble	1 in 0·20

Result.—Soluble in water, 1 in 0·25.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in less than 1
United States Pharmacopœia	Freely soluble
German Pharmacopœia	Freely soluble

Solubility in 90 per cent. Alcohol.

Completely soluble	1 in 0·20
Incompletely soluble	1 in 0·15

Result.—Soluble in 90 per cent. alcohol, 1 in 0·20.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in less than 1

Glusidum.

In light, white pulverulent crystals, complying with the official qualitative tests.

Solubility in Water.

Completely soluble	1 in 375
Incompletely soluble	1 in 350

Result.—Solubility in water, 1 in 375.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 400

Solubility in 90 per cent. Alcohol.

Completely soluble	1 in 37·5
Incompletely soluble	1 in 35·0

Result.—Solubility in alcohol, 1 in 37·5.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 25

Iodoformum.

In glistening lemon-yellow crystals, complying with the official qualitative tests.

Solubility in 90 per cent. Alcohol.

Completely soluble	1 in 95
Incompletely soluble	1 in 80

Result.—Solubility in 90 per cent. alcohol, 1 in 95.

Comparison with Authoritative Statement.

British Pharmacopœia	1 in 80

Menthol.

In moist, colourless crystals, complying with the official qualitative tests.

Solubility in 90 per cent. Alcohol.

Completely soluble	1 in 0·20
Incompletely soluble	1 in 0·15

Result.—Solubility in 90 per cent. alcohol, 1 in 0·20.

Naphthol.

In greyish-white, light crystals, complying with the official qualitative tests.

Solubility in 90 per cent. Alcohol.

Completely soluble	1 in 1·8
Incompletely soluble	1 in 1·6

Result.—Solubility in 90 per cent. alcohol, 1 in 1·8.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in less than 2

Phenacetinum.

In white, odourless, glistening, scaly crystals, complying with the official qualitative tests.

Solubility in 90 per cent. Alcohol.

Completely soluble	1 in 21
Incompletely soluble	1 in 20

Result.—Solubility in 90 per cent. Alcohol, 1 in 21.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 20
German Pharmacopœia	1 in 16

Phenazonum.

In colourless, odourless, scaly crystals, complying with the official qualitative tests.

Solubility in Water.

Completely soluble	1 in 1·2
Incompletely soluble	1 in 1·0

Result.—Solubility in water, 1 in 1·2.

Comparison with Authoritative Statement.

British Pharmacopœia	1 in

Solubility in 90 per cent. Alcohol.

Completely soluble	1 in 1·3
Incompletely soluble	1 in 1·15

Result.—Soluble in 90 per cent. alcohol, 1 in 1·3.

Comparison with Authoritative Statement.

British Pharmacopœia	1 in 1·3

Saccharum Lactis.

In hard, odourless, greyish-white, crystalline masses, complying with the official qualitative tests.

Solubility in Water.

Completely soluble	1 in 6
Incompletely soluble	1 in 5·5

Result.—Solubility, 1 in 6.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 7
United States Pharmacopœia	1 in 6
German Pharmacopœia	1 in 7

Salicinum.

In colourless, shining, tabular crystals, complying with the official qualitative tests.

Solubility in Water.

Completely soluble	1 in 28·4
Incompletely soluble	1 in 26

Result.—Solubility in water, 1 in 28·4.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 28
United States Pharmacopœia	1 in 28

Solubility in Alcohol.

Completely soluble	1 in 80
Incompletely soluble	1 in 75

Result.—Solubility in alcohol, 1 in 80.

omparison with Authoritative Statements.

British Pharmacopœia	1 in 60

Salol.

In colourless crystals, complying with the official tests.

Solubility in 90 per cent. Alcohol.

Completely soluble	1 in 15
Incompletely soluble	1 in 10

Result.—Soluble in 90 per cent. alcohol, 1 in 15.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 10

Santoninum.

In flat, odourless crystals, complying with the official qualitative tests.

Solubility in 90 per cent. Alcohol.

Completely soluble	1 in 52
Incompletely soluble	1 in 50

Result.—Solubility in 90 per cent. alcohol, 1 in 52.

Comparison with Authoritative Statements :—

British Pharmacopœia	1 in 40
German Pharmacopœia	1 in 44

Sulphonal.

In colourless, odourless crystals, complying with the official qualitative tests.

Solubility in Water.

Completely soluble	1 in 450
Incompletely soluble	1 in 425

Result.—Solubility in water, 1 in 450.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 450
German Pharmacopœia	1 in 500

Solubility in 90 per cent. Alcohol.

Completely soluble	1 in 80
Incompletely soluble	1 in 65

Result.—Solubility in 90 per cent. alcohol, 1 in 80.

Comparison with Authoritative Statements.

British Pharmacopœia	1 in 50
German Pharmacopœia	1 in 65

Thymol.

In large crystals, having the odour of thyme and agreeing with the qualitative tests of the Pharmacopœia.

Solubility in 90 per cent. Alcohol

Completely soluble	1 in 0·325
Incompletely soluble	1 in 0·300

Result.—Solubility in 90 per cent. alcohol, 1 in 0·325.

Comparison with Authoritative Statements.

British Pharmacopœia	freely soluble

Note on the Solubility of Zinci Sulphocarbolas and Ammonii Phosphas.

Messrs. Squire and Caines* have drawn attention to the solubilities of these two substances published in Reports II. and III.

We determined the solubility of zinc sulphocarbolate by obtaining a saturated solution, determining the zinc by gravimetric analysis and calculating the result to a salt of the composition demanded by the Pharmacopœia. The solubility given by us is correct for a salt of this composition. But Messrs. Squire and Caines show that the commercial salt has not the composition required by the Pharmacopœia, since it contains eight molecules of water instead of one. If the composition of the official salt is altered from $Zn(OH{\cdot}C_6H_4{\cdot}SO_3)_2HO_2$ to $Zn(OH{\cdot}C_6H_4{\cdot}SO_3)_2 8H_2O$, then the solubility of the salt must be proportionately increased.

In the case of ammonium phosphate we found that two samples obtained from leading manufacturing chemists contained less ammonia than the Pharmacopœia demanded. At this we were not surprised, as the phosphate easily loses ammonia on warming, and we considered that the official requirements of purity, viz., an almost chemically pure salt, were too stringent. Messrs. Squire and Caines, investigating this subject, found that the commercial salt is often a mixture of diammonium hydrogen phosphate and ammonium dihydrogen phosphate, and as such was more soluble in water than either salt alone. The solubility of the salt of official composition they found to be 1 in 2.

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* *Chemist and Druggist*, **61**, 944.

Summary.

Substance.	Solvent.	Solubility Found.	B.P.	U.S.P.	P. Germ.
Antimonium tartaratum	Water	1 in 17·1	1 in 17	1 in 17	1 in 17
Argenti nitras	Water	1 in 0·53	1 in less than 1	1 in 0·6	1 in 0·6
Ferri sulphas	Water	1 in 1·5	1 in less than 2	1 in 1·8	1 in 1·8
Hydrargyri perchloridum	Water	1 in 17·9	1 in 16	1 in 16	1 in 16
Hydrargyri perchloridum	90 per cent. alcohol	1 in 3·64	1 in 3	1 in 3	1 in 3
Hydrargyri perchloridum	Ether (B.P.)	1 in 4·35	1 in 4	1 in 4	1 in 12 to 14
Acetanilidum	Water	1 in 210	1 in 200	1 in 194	1 in 230
Acetanilidum	90 per cent. alcohol	1 in 4·2	1 in 4	1 in 5	1 in 3·5
Acidum benzoicum	Water	1 in 420	1 in 400	1 in about 500	1 in 370
Acidum benzoicum	90 per cent. alcohol	1 in 2·75	1 in 3	1 in 2	
Acidum carbolicum	Water	1 in 14		1 in about 15	1 in 15
Acidum carbolicum	Glycerin	1 in 0·33	freely	very	
Acidum carbolicum	Olive oil	1 in 2	freely	very	
Acidum gallicum	Water	1 in 105	1 in 100	1 in 100	
Acidum salicylicum	Water	1 in 500	1 in 500	1 in about 450	1 in 500
Acidum salicylicum	90 per cent. alcohol	1 in 3·5	1 in 3	1 in 2·4	
Butyl chloral hydras	Water	1 in 37	1 in 50		
Camphora	90 per cent. alcohol	1 in 1·25	1 in 1		
Camphora	Chloroform	1 in 0·35	1 in 0·25	readily	
Camphora	Olive oil	1 in 3	1 in 4		
Chloral hydras	Water	1 in 0·25	1 in less than 1	freely	freely
Chloral hydras	90 per cent. alcohol	1 in 0·2	1 in less than 1		
Glusidum	Water	1 in 360	1 in 400		
Glusidum	90 per cent. alcohol	1 in 37·5	1 in 25		
Iodoformum	90 per cent. alcohol	1 in 95	1 in 80		
Menthol	90 per cent. alcohol	1 in 0·2	readily		
Naphthol	90 per cent. alcohol	1 in 1·8	1 in less than 2		
Phenacetinum	90 per cent. alcohol	1 in 25	1 in 20		in 16
Phenazonum	Water	1 in 1·2	1 in 1		
Phenazonum	90 per cent. alcohol	1 in 1·3	1 in 1·3		
Saccharum lactis	Water	1 in 6	1 in 7	1 in 6	1 in 7
Salicinum	Water	1 in 28·4	1 in 28	1 in 28	
Salicinum	90 per cent. alcohol	1 in 80	1 in 60		
Salol	90 per cent. alcohol	1 in 15	1 in 10		
Santoninum	90 per cent. alcohol	1 in 52	1 in 40		1 in 44
Sulphonal	Water	1 in 450	1 in 450		1 in 500
Sulphonal	90 per cent. alcohol	1 in 80	1 in 50		1 in 65
Thymol	90 per cent. alcohol	1 in 0·325	freely		

In conjunction with Mr. Knape, late E. Northway Butt Scholar, I made further experiments that confirm the results of Messrs. Squire and Caines. We prepared the di-ammonium salt of the composition demanded by the Pharmacopœia, and found its solubility to be 1 in 1·6 of water at 60° F. We further found that the mono-ammonium salt is more freely soluble in a saturated solution of the di-ammonium salt than it is in pure water. Thus, 10 Gm. of the di-ammonium salt dissolved in sufficient water formed a saturated solution that was still capable of taking up and retaining 8·5 Gm. of the mono-ammonium salt, hence the solubility of a mixture of the mono- and di-ammonium salts is greater than that of either alone.

These experiments have convinced me that there is no material difficulty in preparing a salt of the composition demanded by the Pharmacopœia, and that the official requirements are not too stringent. The solubility of such a salt we find to be 1 in 1·6 of water at 60 F., instead of 1 in 4, as stated in the Pharmacopœia.

DETERMINATION OF CAFFEINE AND THEOBROMINE.

Several methods have lately been suggested for the determination of the xanthine bases (theobromine and caffeine) in cocoa and chocolate. J. Fromme, testing these methods, considers Welman's the best, but suggests simplifying it by boiling the cocoa with water acidulated with sulphuric acid, so as to convert the starch into sugar, and by taking an aliquot portion of the aqueous solution for the assay, thus avoiding a tedious washing of the powder. The process, as modified by Fromme, may be thus briefly stated :—6 Gm. of powdered cocoa is boiled for half-an-hour with a mixture of 200 Gm. water, and 3 Gm. dilute sulphuric acid. 8 Gm. of calcined magnesia is mixed with 400 Gm. of water, and the whole boiled for one hour, an upright condenser being used in each case. 500 Gm. of the filtrate (= 5 Gm. cocoa) is then evaporated to dryness or to the consistence of an extract. This residue may be rubbed down with 10 C.c. of water, and shaken out with eight successive 50 C.c. of chloroform, or it may be mixed with 25 C.c. of water, and perforated for six to ten hours. In each case the extraction of the alkaloid by the chloroform is complete (*Apoth. Zeit.*, **18**, 68). E. Léger, on the other hand, thus modifies the method of Warin for the determination of caffeine and theobromine in kola, guarana, tea and coffee.

Kola Nuts.—From 0·5 to 1 Gm. of the powdered nuts is dried at 100° C. to determine the amount of water. This approximates to 12 per cent. A quantity of the undried powder, equivalent to 15 Gm. of the dried product, is then taken and mixed in a mortar with calcined magnesia, 10 Gm., and water, 15 C.c. The moist powder is introduced into a 500 C.c. flask, which is then corked and set aside for two hours. Chloroform, 150 C.c., is then added, and the weight of the flask with its contents noted. An upright condenser is then connected and the whole is heated on the water-bath and the solvent kept boiling for an hour. It is then cooled and the original weight made up by the addition of more chloroform. The whole is then thrown on to a pleated filter in a funnel over a vessel graduated to 100 C.c.; the funnel should be covered with a glass plate during filtration. When filtration ceases, the funnel is gently tapped to shake down the powder and allow a further portion of the solvent to run through. After thorough draining, a little more chloroform is passed through the funnel so as to bring the volume of the filtrate to the 100 C.c. mark. This quantity is equivalent to 10 Gm. of the powder taken. The chloroformic extract is then distilled, in two portions, in a 125 C.c. flask, and the residue dried at 100° C. To the almost colourless residue thus obtained 12 C.c. of a mixture of hydrochloric acid, 1, and water, 2, is added, and the mixture well shaken. The alkaloids are dissolved, but fatty matter remains insoluble. The solution is filtered through a small filter into a graduated tapped tube (an Adams' tube for the determination of butter in milk answers well for the purpose). To the 10 C.c. of filtrate thus obtained 20 C.c. of chloroform is added, followed by excess of ammonia. The whole is then shaken and allowed to separate The chloroformic solution is drawn off into another separator and the aqueous ammoniacal liquid again shaken out with two washings of chloroform, each of 20 C.c. The bulked chloroformic extract is shaken up with 2 C.c. of water, separated and distilled off in two successive portions, in a small, tared, conical flask. The colourless residue is then dried to 100° C. and weighed. The weight obtained × 12 = the percentage o alkaloids, since the alkaloids from 10 Gm. of powder were dissolved in 12 C.c. of acid water, of which only 10 C.c. was taken for extraction. The result may be expressed thus:— When A = percentage of alkaloids and P the weight of alkaloids obtained—

$$A = \frac{P \times 12 \times 10}{10} = P \times 12$$

The yield of alkaloids should not be less than 1·25 per cent.

Tea.—The first part of the operation is conducted as with kola. 100 C.c. of the $CHCl_3$ extract, representing 10 Gm. of tea, is distilled off in two successive portions until nothing remains but a green syrupy residue. To this is added petroleum ether, 20 C.c., and 25 C.c. of a mixture of hydrochloric acid, 1, and water, 4. The whole is well shaken up, and transferred to a separator; after separation, the acid aqueous portion is drawn off into another separator, the green petroleum ether is shaken out first with 15 C.c., then with 10 C.c. of the acid liquid, the washings separated and added to the first obtained acid extract. This bulked acid solution is again shaken out with another 5 C c. of petroleum ether, and again separated. It is then made alkaline with ammonia and shaken out with 60 C.c. of chloroform, employed in three separate portions. The bulked chloroform extracts are washed with 2 C.c. of water, separated, and distilled in two portions in a tared conical flask. The colourless residue thus obtained is dried at 100° and weighed. The weight obtained should not be less than 0·200 Gm., or 2 per cent. of alkaloid.

Coffee.—The first part of the process is similar to that directed for kola. After having obtained the residue from the 125 C.c. of chloroformic extract (100 C.c. of which = 10 Gm. of dry coffee) 24 C.c. of water is added to it, the containing flask closed with a rubber stopper, and heated, on the water-bath, to 60-65° C.; it is then shaken thoroughly, allowed to cool and thrown on a small pleated filter, when the solid fatty matter is filtered out. Twenty C.c. of filtrate is collected, which is then shaken out with 60 C.c. of chloroform employed in three successive equal portions. The bulked chloroformic extract is distilled in a tared conical flask, the residue dried at 100°, and weighed as caffeine. The observed weight, P × 12, will give the percentage A, as shown by the equation—

$$A = \frac{P \times 24 \times 10}{20} = P \times 12$$

Since coffee is always poorer than other drugs in caffeine, the 24 C.c. of simple water employed to dissolve the base is ample, and the use of acid is avoided.

Alexandra Bouquet.

Bergamot oil, 3½ drachms; oil of rose geranium, ½ drachm; otto of rose, ½ drachm; cassia oil, 15 minims; alcohol (90 per cent.), 20 fl. oz. Mix.—*Spatula*, **9**, 410.

THE STUDENTS' COLUMNS.

BOTANY—(3).

Carbon Assimilation.

A seed contains but a small portion of the food material which the plant will require during the course of its existence, and hence an additional supply of nutriment must be obtained from without. In a previous lesson it was shown to be necessary for the life of the plant that all its living cells shall be freely supplied with water, and the means whereby the water is absorbed by the plant were discussed. It was also pointed out that the gas carbon dioxide which exists to a slight extent in the atmosphere is another extremely important source of food material from which the plant builds up its substance. The percentage composition of a dried plant is such as to indicate that it is carbon which is of primary importance to it, and it is to the way in which carbon dioxide is absorbed from the atmosphere and to a consideration of the chemical processes which lead to the wonderful process of vegetable digestion or "assimilation" that we must devote our attention in this lesson.

To assimilate is to make similar, or to perform the act of converting food into the substance of the body, and this is what plants do, inasmuch as they change simple inorganic compounds into extremely complicated organic matter. They perform this work only in their leaves or other green parts, and in these only when they are exposed to the light of day, that is, to the influence of the sun. We see, therefore, why plants are so dependent on light—they cannot grow without it, except so far as they are fed by vegetable matter prepared beforehand, just as the seedling is fed at the beginning by vegetable matter of the parent plant stored up in the seed. This enables them to begin their growth in the dark, but the inheritance only serves to set up the young plants, for when they have exhausted it they have to work for themselves, to take in carbon dioxide and water and assimilate it in their green leaves by the help of sunshine. By this act of making vegetable matter, plants fulfil their great purpose of existence, inasmuch as they purify the air for animals. While at every breath animals take in oxygen and give out carbon dioxide, plants prevent this carbon dioxide from accumulating in the air. While animals need the oxygen of the air, and, in using it, change it into carbon dioxide, hurtful to them, plants need the carbon of the carbon dioxide, and constantly take it from the air, decompose it in their leaves during sunshine, retaining the carbon and giving back the oxygen pure, and thus they keep the air fit for the breathing of animals.

It is stated above that the absorption of carbon dioxide from the atmosphere is effected chiefly by the leaves. The skin of every leaf, and especially that of the under side, is riddled with thousands of holes or stomata (Gr. *stoma*, a mouth), which open into the chambers and winding passages of the pulp of the leaf, so that a gas is able to circulate freely throughout the whole. The number of these little mouths or stomata present in different plants varies from hundreds to tens of thousands in a square inch of the under surface of the leaf, where they occur in the largest numbers, although some leaves possess an equally large number upon the upper surface of the leaf, while cacti have them on their thick succulent stems. Now, although the carbon dioxide exists in air to but such a very small extent, the large green surface which an ordinary terrestial plant possesses renders a considerable amount of absorption possible, while the carbon dioxide, as soon as it enters the intercellular spaces in the pulp of the leaves, by means of the stomata, dissolves in the cell sap, which permeates the walls of the cells, and passes through the walls in a state of solution, thus permitting the constant entry of a fresh stream.

Chlorophyll.

It has been emphasised that it is only in the green parts of the plant that construction of organic substance proceeds that we must now ask ourselves: "To what is this green colour due?" In the vegetable cells of which the leaf is made up we find in the transparent jelly-like protoplasm which forms a lining to each of the cells many small, colourless differentiated bodies, which are called "plastids." In leaves exposed to the light, these plastids develop a green colouring matter, which is diffused in some form of solution through their substance, and they are then called "chloroplastids" (Gr. *chloros*, green), while the green colouring matter itself has been called "chlorophyll." Alcohol, chloroform, and other organic liquids will dissolve chlorophyll, but, so far, its exact composition has not been definitely ascertained, though it is certain that light is necessary for its production. Since chlorophyllous plants obtain all their organic food from the synthesis of carbon dioxide and water, they are able to grow in pure sand if supplied with the other essential elements in the form of appropriate inorganic compounds, and are allowed to be under the all-important influence of the radiant energy of the sun. Thus many plants—*e.g.*, maize, barley, and beans, grow admirably under such cultural conditions, while the amount of organic matter formed by the photosynthetic assimilation of carbon dioxide ultimately far surpasses the weight of the seed.

Products of Assimilation.

It is at present extremely doubtful what the first-formed product in the assimilation of carbon dioxide may be. No very precise knowledge has been obtained of the chain of processes by which the organic products of the photosynthetic assimilation are produced, and it must be clearly borne in mind that the process is purely a vital one, and hence we meet with the same difficulties which confront us when dealing with any vital phenomenon. Various theories have been put forward which are fairly plausible from a chemical point of view. The most generally accepted explanation is that formic aldehyde is first produced in the chloroplastid from the carbon dioxide and water, oxygen being evolved, while from this formic aldehyde (CH_2O), which is a simple soluble carbohydrate, more complex soluble carbohydrates of the nature of sugars may be formed by the condensation of several molecules together, or "polymerisation," a process which the aldehydes readily undergo. Such a condensation of formic aldehyde would lead to the formation of grape sugar, thus—$6CH_2O = C_6H_{12}O_6$. This newly-made vegetable matter is not allowed to accumulate in the leaves where it is made. It is transported by diffusion through the plant, or carried especially to where a stock is to be laid up, or where growth is taking place. In annual herbs nearly all of it is used for growth or for blossoming as fast as it is made. In biennial plants, which in the first year produce only vegetative shoots and in the second year flowers, fruits, and seeds, a great part of it is stored up somewhere during the first year, as, for example, in the turnip the root is the storehood of food for the next year. In the potato a part is laid up in the tubers (which are all of the plant that survives the winter) to begin a vigorous growth the next season. In shrubs and trees a part is deposited and used for developing the buds the next spring, while in all plants a portion is deposited, sometimes in the fruit, always in the seed, for the use of the embryo or new plant at the beginning of its growth. When vegetable matter is laid up in this way for future use it is most frequently in the form of starch, though reserve material may take other form, as, for instance, the oil in the seed of the castor-oil plant. Nearly the whole bulk of a potato or a grain of wheat is starch, which in the former case, will be used for the support of the young shoots to which the potato tuber gives rise, while in the wheat grain the supply is used for the support of the young embryo, which will need it at the onset of germination. Now we know that starch grains are insoluble, and obviously such a deposit is not in a suitable form for rapid transport when growth at some particular place demands a supply of nutrient substance, and hence we find that when such a resumption of active growth makes a call upon the reserve starch, its removal is dependent upon the presence of a peculiar secretion which we call an "enzyme" or unorganised ferment. These enzymes, which are manufactured by the protoplasm of various cells, act upon the insoluble starch, changing it into some form of sugar, which is readily soluble, and hence dissolves in the cell-sap, and is thus quickly conducted by diffusion to the seat of developmental activity. It must be carefully noticed that starch, sugar, and even plant fabric all have very nearly the same chemical composition, and thus the plant is able readily to change one into the other as it needs.

REVIEWS AND NOTICES OF BOOKS.

Year-Book of Pharmacy,' and Transactions of the British Pharmaceutical Conference. Pp. 659. The Year-Book edited by J. O. Braithwaite, and the Transactions by E. Saville Peck, M.A., and Edmund White, B.Sc. London: J. and A. Churchill, 7, Great Marlborough Street. 1903.

The 'Year-Book of Pharmacy' increases in size and usefulness, and the new volume contains nearly a hundred pages more than that of 1902. That part of the book for which Mr. Braithwaite is responsible is a complete record, ably summarised, of the progress of pharmacy and the more nearly allied sciences during the past year. One innovation which Mr. Braithwaite has introduced is that where, among the abstracts, it has been possible to refer to previous work on the subject summarised in the Year-Book, a bracketed reference has been interposed in the text. The value of this will be appreciated by those workers who have not ready access to the papers where researches have originally been published. The index, once again, deserves especial praise. The Transactions of the Conference at the Bristol meeting have been well reported, and the editing of the whole work is all that could be desired. This annual record is the best possible tribute to the thoroughly healthy condition of the British Pharmaceutical Conference.

'A Manual of Medicine.' Edited by W. H. Allchin, M.D. (Lond.), etc. Vol. V. Pp. 687. Price 10s. net. London: Macmillan and Co., Limited. 1903.

In this, the concluding volume of Dr. Allchin's 'Manual,' the important subjects of diseases of the digestive system and of diseases of the kidneys are principally dealt with. Though some of the articles are distinctly superior to others, a very high level of general excellence is attained, and Dr. Allchin is to be congratulated on the satisfactory termination of his task. Among many valuable sections, some of the most instructive and practical are those by Drs. Bradford, Hutchison, and the Editor, while Dr. Lazarus-Barlow's pathological contributions are masterpieces of lucidity. The illustrations are far below the general standard of the work, and the volume would have lost little by their omission. Although the plates are more satisfactory, a curious typographical error has crept into the second. Dr. Hale White indulges in some mild raillery at the expense of surgeons. When dealing with retroperitoneal suppuration, he remarks, "the treatment is entirely surgical, but . . . it is usually successful." The same author is also misrepresented by his printer in the second paragraph at page 512. Otherwise the volume is remarkably free from misprints and misstatements.

SCHOOL OF PHARMACY STUDENTS' ASSOCIATION.

ORDINARY MEETING.

Friday, December 18, 1903, at 17, Bloomsbury Square, London, Mr. Harold Deane, B.Sc., in the chair.

Mr. Treneer, Hon. Sec., read the report of the special committee appointed to revise the rules of the Association. The consideration of the report was postponed to the next meeting.

A debate then took place on the subject "Are we too civilised?" and aroused considerable interest, several students who had not previously spoken at meetings of the Association seizing the opportunity to deliver their maiden speeches. On a vote being taken, the house decided, by fifteen to seven, that the question should be answered in the negative.

BOURNEMOUTH PHARMACEUTICAL ASSOCIATION.

MONTHLY MEETING.

Thursday, December 17, 1903, at the Albert Restaurant, Mr. E Worth, President, in the chair.

The Hon. Secretary, Mr. F. Rose, reported that he had made enquiries as desired respecting another place of meeting, but it was decided to make no change in the present arrangements.

Cash on Delivery.

The Secretary reported that he had received a communication from the Ironmongers' Association enclosing a petition in opposition to the proposed introduction of a "cash-on-delivery" parcel's post system, and asking the Association to join with the Trades' Association of the town in a combined opposition. A long discussion took place on the merits and demerits of the scheme.

Mr. Morris considered that chemists certainly ought to oppose this scheme, but he was afraid they could not possibly stop it, as the Postmaster-General had expressed his sympathy with it.

Mr. Williams considered it would not affect a large town like Bournemouth, and could see no objection to it. He had had some experience of the scheme, as it was in use in America some seventeen years ago.

Messrs. Bilson, Reid, and Bingham having spoken, Mr. Morris moved that the Association should not join the Trades' Associations in their petition, but that the Secretary be instructed to write to the member of Parliament for Bournemouth, and also to the Postmaster-General protesting against the scheme. This was seconded by Mr. Bilson, and carried *nem. con.*

Prices of Proprietaries.

Attention of members was then called to a circular enclosed by Messrs. Bishop inside their packages of "Calcusol," stating the cost price of the article. After discussion, it was proposed by Mr. Worth that the Secretary be instructed to write to Messrs. Bishop, stating that in the opinion of the Association it was very unwise to publish the cost price in that manner, and also to ask for any explanation they may have to make.

Mr. Morris seconded, and it was carried unanimously.

Attention of members was next called to a new scheme of protected prices issued by Messrs. Savory and Moore. The general opinion was that while all welcomed any arrangement which would give the chemist an assured profit, yet it was a matter of regret that the prices of some articles should be fixed so low.

After discussion, Mr. Morris proposed that the Secretary write to Messrs. Savory and Moore, and express the regret of the Association that they should have fixed the prices so low; especially mentioning the peptonised preparations of cocoa and coffee, and point out that the rate of "profit" was less than a penny in the shilling, a rate at which it was impossible to carry on a business. This proposition was carried unanimously.

CHEMISTS' ASSISTANTS' ASSOCIATION.

SOCIAL EVENING.

Thursday, December 17, 1903, at 73, Newman Street, London, the President, Mr. A. B. Britton, in the chair. This meeting being the last of the first half of the session, took the form of a social and musical evening. There was a fairly good attendance, and a very enjoyable entertainment was provided by several of the members. A collection was taken on behalf of the Benevolent Fund, realising 10s. 7d. The next meeting will be held on January 7, 1904, when Mr. Sidney Jamieson will occupy the chair, and will be responsible for the musical programme.

BURNLEY AND DISTRICT CHEMISTS' ASSOCIATION.

ORDINARY MEETING.

Thursday, December 17, 1903, Mr. Walker in the chair.

Medicine Stamp Duty.

The Chairman said that, as action respecting the stamp duties had been postponed for three months, he did not see that they could decide upon any particular procedure until nearer the expiration of this time.

Mr. Heaton said the Grocers' Association was far ahead of chemists, who never got any concessions. If they were not careful they would be in a worse position three months hence than when they started; they would have to stamp things they never had stamped.

Mr. Crookes thought the three months' grace was not calculated to be a good thing for chemists. It gave the grocers an opportunity of getting concessions they never should have had.

Mr. Brown asked whether they should now take up an agitation as regards the concessions previously granted and now withdrawn.

Mr. Coates, Mr. Tomlinson, and others continued the discussion, Mr. Coates stating that there was nothing in the Act to compel them to disclose the formulæ of their preparations. If it was a well-known and approved formula that was sufficient.

The Holidays.

On the motion of Mr. Heaton, seconded by Mr. Brown, it was decided to close all day on Christmas Day and the Tuesday following.

Bonuses.

Mr. Brown next introduced the question of bonuses. One member of the Association was returning a penny in the shilling, and it had been reported to him that another was giving a shilling in the £, and a third 1s. 6d. in the £.

One of the members referred to by Mr. Brown said that where people who were not chemists were giving 1s. 6d. or more in the £ the chemists affected had to do something in self-defence.

Mr. Heaton wondered how chemists giving a bonus were going to discriminate between P.A.T.A. articles and the rest.

Mr. Brown thought they were all agreed that the extra profit on the P.A.T.A. articles had been a godsend to the trade, and he thought it was folly to fritter it away by giving bonuses. It was no use fighting for benefits unless they could pull together locally.

It was decided to leave the matter with the members after the expression of opinion already given against the system.

Qualified and Unqualified Men

Mr. Brown said the doctors of the district had asked if the Chemists' Association would provide them with a list of the qualified and unqualified men in the district. They (the doctors) did not know the qualified from the unqualified chemists, and were anxious to have a list, so that they would know how matters stood.

It was decided that lists be supplied to the medical men of the district.

Corporation Trading.

Mr. Brown drew attention to the fact that the Burnley Corporation was supplying disinfecting powder gratis, in large or small quantities, to anybody who cared to apply. They were also supplying householders with Jeyes' soap at less than chemists could buy it. The Corporation had also given a large order to an outsider for feeding-bottles, which were supplied to poor parents at a nominal sum. Local traders were ignored. The Tradesmen's Association had decided to move in the matter, and it affected the Chemists' Association quite as much, or more.

Mr. Heaton, who is a member of the Corporation, said he would have the matter looked into. The providing of disinfectants and soap began during the smallpox epidemic. They could not complain of that, as it concerned the health of the town, but the instance mentioned by Mr. Brown, of disinfectant being supplied to a cotton manufacturer at less than market price, was altogether different. After a free expression of opinion, Mr. Heaton moved that a letter of protest be sent to the Town Clerk with regard to the general trade in merchandise carried on by the Corporation, more especially in the sale of soaps and disinfectants.

Mr. N. Tomlinson seconded, and the resolution was agreed to.

New Member.

On the motion of Mr. Hirst, seconded by Mr. Tomlinson, Mr. Crooke was elected a member of the Association.

Annual Dinner.

On the motion of Mr. Coates, seconded by Mr. N. Tomlinson, it was decided to hold the annual dinner about the end of February or early in March.

This ended the business, but subsequently, at an informal meeting of the chemists giving bonuses, it was agreed to withdraw the same on January 1, provided it was unanimous.

SOCIETY OF CHEMICAL INDUSTRY.

NOTTINGHAM SECTION.

Wednesday, December 16, 1903, at the University College, Nottingham, Professor F. S. Kipping in the chair.

Arsenic in Brewing Materials.

Mr. S. R. Trotman, city analyst, referred to that part of the report of the Royal Commission on Arsenical Poisoning which dealt with the electrolytic methods of testing brewing materials for arsenic. The Commission had adopted, he said, without acknowledgment, the process which he described in

July, 1902, but had made various alterations which were not by any means improvements. The addition of alcohol to prevent frothing was so small a detail as to be hardly deserving of notice. The Committee laid stress on the use of potassium metabisulphite to ensure arsenic being in an arsenious condition. In his original description he advised the use of a little zinc sulphate, which answered the same purpose, and saved a good deal of time. It was well known that the presence of zinc in the inner cell caused hydrogen to be liberated at higher tension, and hence possessed of greater chemical activity. In his apparatus arsenic was reduced in the apparatus itself, while metabisulphite reduced it to an arsenious salt before electrolysis.

GLASGOW AND WEST OF SCOTLAND PHARMACEUTICAL ASSOCIATION.

ORDINARY MEETING.

Thursday, December 17, 1903, at West Regent Street, Glasgow, Mr. W. L. Currie, President, in the chair.

Territorial Representation.

The Chairman, in opening the proceedings, said the subject of "territorial representation" was not a new one in Glasgow. The Association had discussed it on more occasions than one, and he was sorry that the proposition did not receive the attention which it ought to have received at headquarters.

Mr. J. F. Tocher said that, so far as territorial representation was concerned, he was quite surprised that it had caught on so well throughout the country, and he had to thank those pharmacists in every part of the country who had supported him, expressing approval not only with the idea, but with his particular scheme. He did not claim to have originated the idea. The man who first said anything definitely about it was Mr. Thomson, in 1882, and he had just learned that the Glasgow Association passed a resolution in favour of the idea then. He had also learned that no later than the previous night the Sheffield Society met and discussed his scheme, and that his esteemed friend, the ex-President of the Pharmaceutical Society (Mr. Newsholme), had decided to go against the idea. While admitting that that gentleman was a very high authority, he would just wish to say that he would fight Mr. Newsholme and others, and show them that there was something in this scheme. They wanted on the Council men who represented their views. At present they got a voting paper which contained seven or more names. He considered himself an average intelligent person, and he found the greatest difficulty in making up his mind as to whom he should vote for. He did not know personally one of the men, and some of them he did not know even by reputation. He wanted somebody in his district who would represent his views, so that if he had any particular idea in connection with pharmacy, any grievance, anything he wanted to get done, that representative would do it for him. He would deal that evening with the advantages specially, as a Manchester critic had said he had not shown any. Mr. Waddington, again, had a scheme, in connection with which he read a paper in Edinburgh. What that gentleman said about his (Mr. Tocher's) scheme was that it was cumbersome and defective, in respect that the elections were annual, whereas his scheme was neither, because he provided for an election in some part of the country every year. The Act of 1898 provides that seven members of the Council retire annually, and the seven who retire shall be those who have been longest in office. Under his scheme, seven seats on the Council would fall vacant every year, corresponding with districts or constituencies. The second year seven other seats would fall vacant, corresponding to other seven constituencies, which the Council itself would determine; and in the third year the remaining seven seats would fall vacant and be elected. The cycle would thus be completed. What was Mr. Waddington's scheme? Briefly, it divided the country into eight territorial districts, having two representatives in each district, except the home group, which returned seven members—a little council of its own—and he enumerated the number of chemists in each district, but he left the members—who, after all, were the people who had the say—entirely out of account. He gave Wales, with 757 chemists, two members, he gave Yorkshire, Northumberland, Cumberland, and Durham, which group of counties had twice the number of chemists of Wales—1,828—only two members too. He proceeded with caution with a certain part of Great Britain known as Scotland, which got two members for an unknown number of chemists—that was to say, he did not venture to enumerate Scotland. His eight territorial districts were ridiculously unequal districts, and were to be convulsed by election, not annually, as he says, but in the most irregular, meaningless manner. The reasons for having seven two-barrelled constituencies and seven one-barrelled did not appear at all. That brought to his mind a matter he noticed in one of the pharmaceutical papers, in which a writer stated that Scotsmen would be the first to complain of this representation because of the tyrannical English majority. From his point of view, it was just as sensible to speak of a provincial majority as against the metropolis. At a meeting of the London Chemists' Association, when Mr. Campbell read a paper on territorial representation, it was stated that the question had been raised by Scotsmen. "If Scotsmen wanted more representatives, why did they not put them in?" In regard to putting Scotsmen on to the Council, a definite answer could be given. There happened to be some 4,700 members of the Society in England and some 600 in Scotland. Mr. Bremridge issued 7,500 papers altogether, and received 3,000 votes at last election. The man who was at the bottom of the list, and got in, received 1,600 votes. Their esteemed Chairman received 1,400 votes. There were 600 members in Scotland, and if every one had voted for their representative, where would he have been? The fact of the matter was, to put in a Scotsman by Scottish members was like squaring a circle. Mr. Kemp, at Manchester, made a speech, in the course of which he had stated that he (Mr. Tocher) had explained all about his various computations instead of showing the advantages of the scheme. If territorial representation was not to be a question of numbers, then he was done with it for ever. So far as not showing the advantages of the scheme, it struck him that his whole paper was an attempt to do this. He would ask Mr. Kemp what was meant by the illustration regarding the Welsh constituencies—what was meant with regard to municipalities, local associations, and the four Lancashire members? The fact was, those were all arguments to show that representation by members in the various districts was better than the present method. He believed that the scheme would come into vogue, Mr. Newsholme notwithstanding. After the New Year they would be able to get better at their members of Council. For instance, they could get Mr. Currie to demand an explanation with regard to their various grievances. Mr. Currie represented the whole country rather than Glasgow district. They would then realise the aspiration of Jacob Bell that the Pharmaceutical Society should be a complete reflection of the minds of the pharmacists of the country—

that mind which, whether awake or asleep, truly represented the pharmacist in every part of the country.

Mr. Moir said that he did not see why the Pharmaceutical Society did not take the matter up, because he believed it would be the means of getting them an immense amount of new members and a growing interest throughout the country in the Society. It stood to reason that if they had a representative from Glasgow the local members would bring the needs of the district before him, and thereby before the Pharmaceutical Council. He would move:—

> That this meeting of the Glasgow and West of Scotland Pharmaceutical Association approves of the principle of district or territorial representation on the Pharmaceutical Council, and approves generally of Mr. Tocher's scheme.

He had made the resolution a general one, so that it would give them an opportunity of criticising the details later on if they might think that necessary.

Mr. Sutherland seconded the motion. Under this scheme there would be an election every year in Scotland. This he considered one of the weakest parts of the scheme. The question was whether an annual election would not interest a sufficiently large number in many parts of the country, and he was rather afraid that this part of the scheme might have to be improved in some way or another, so as to interest all the people who were voters, and at the same time keep the enthusiasm of the whole country up. The few members in the West of Scotland compared with other districts was due chiefly to the number of medical men who did their own dispensing rather than give the trade to chemists. So far as they stood at present, however, considering the number of chemists they had, the proportion of members of the Society was as large in the West of Scotland as any other district.

Mr. Maben said that to his mind the scheme was too parochial. A member would only be able to exercise his vote once in three years, and members could only exercise it for his next-door neighbour. That was much too parochial-minded for a responsible pharmaceutical society. Everyone knew that in three cases out of four there would only be an election where a member was not willing to stand again. He did not suppose that, so long as Mr. Currie liked to go back to London, there would be an election so far as Glasgow was concerned. That was the fatal blot in the scheme. In his opinion, the proper thing to do would be to divide the country into seven districts, give each district three representatives, and have one election in every district each year. It was quite conceivable that in every district elections would not be required. In London the same men would go back year after year. They could go back not very far when there was a considerable wave of feeling among pharmacists in certain directions. When the last Bill was passed and new conditions came into force a large number of new men were returned to the Council, all representing new and different sections.

The discussion was continued by other members. The concluding portion of the report will be published in next week's issue.

Alum Curd.

This preparation, which is often prescribed as an application for mild inflammation of the eyes, should be prepared by dropping a lump of alum into fresh milk. When the curd sets, the undissolved alum should be removed. Powdered alum should not be used since it cannot be separated from the curd clot.—*Spatula*, **9**, 85.

MARKET REPORT.

General Markets.

London, Wednesday, December 23, 1903.

Business, so far as the markets in drugs and chemicals are concerned, is practically at a standstill. The few transactions which have been made during the last few days have been of an unimportant character, buyers only making purchases to fulfil their immediate requirements. Until after the stock-taking at the end of the year things are not likely to brighten up. A brief *résumé* of some of the most interesting movements during the past year will be found in another column. No changes of any note have occurred during the week ending to-day, and the prices quoted last week are still current. Opium continues firm, but Persian varieties are, if anything, a trifle dearer; the prices of Morphine and Codeine are unchanged, and no alteration is expected, at any rate before the end of the year. At the time of going to press English refiners had not raised the price of Camphor, although the crude article is practically unobtainable. Should the rumour of pending war prove to be correct, there can be little doubt that the value of camphor will be very considerably enhanced. Quinine is extremely quiet, and prices remain practically unchanged. Menthol is likewise quiet and unaltered, while Cod-liver Oil transactions are exceedingly small, rates being rather easier.

NEW REMEDIES.

The Notes in this column embody recent suggestions in therapeutics, for the information of dispensers; they deal with novel applications of drugs and preparations in common use, in addition to new remedies strictly so-called.

Sugar in the Treatment of Moist Skin Eruptions.—Hebra finds sugar to be a useful adjunct to pastes employed in the treatment of various pustular and vesicular eruptions. Such a paste as the following is prescribed:—Lanoline, vaseline, powdered sugar, of each 2 glycerin, sulphur, o each 1.—Mix. It has given excellent results in sub-nasal sycosis, accompanied by treating the nasal mucous membrane with a 1 to 4 per cent. solution of silver nitrate. In seborrhœic eczema the following ointment is effective:—Lanoline, vaseline, of each 50; sugar in powder, 20; glycerin, sulphur, of each 10; chrysarobin, 1 to 2.—*Bull. Gén. de Thérap.*, **145**, 750.

Acetozone in Typhoid.—Drs. Flavel Woods and M. C. Thrush publish a report on fifty-three cases of typhoid, all of which were cured in the Presbyterian Hospital of Philadelphia by treatment with acetozone. It acts as a valuable intestinal antiseptic, lessening the tendency to tympanites and diarrhœa especially when administered in the early stages of the fever. The stools are rendered less offensive. It does not act on the heart or respiratory organs, while the kidneys are not appreciably affected. Hyperexia but rarely appears when acetozone is employed, and relapses are infrequent when its administration is continued until convalescence is fully established.—*Therap. Gaz.* [3], **19**, 373.

Thymyl Trichloracetate.—E. Liotard has obtained this compound by heating thymol with trichloracetic acid. A liquid is formed from which excess of thymol crystallises out, while the trichloracetate separates in a saccharoid form on the addition of a little water. It is insoluble in water, but dissolves in alcohol and in ether. It melts at 44° C.—*Nouv. Remèdes*, **19**, 243.

LEGAL INTELLIGENCE.

High Court of Justice—Chancery Division.

Homocea, Limited.

On Saturday, December 19, 1903, Mr. Justice Joyce had before him a petition presented by Homocea, Limited, for the sanction of the Court to special resolutions which had been passed and confirmed for the reduction of the company's capital from £250,000 to £60,000.

Mr. Younger, K.C., for the petitioners, said the reduction was proposed because loss had been sustained, and the paid-up capital was no longer represented by available assets. The only liabilities of the company were debts amounting to £450. In 1897 the company purchased patents and trade marks for £141,000, but that sum was altogether too high. In 1897 the company paid a dividend on the preference shares, but since then they had paid no dividend at all. Their only assets consisted of the trade marks, patents, and goodwill of the business, and the question was whether they were worth anything like £141,000. The plaintiffs said the outside figure which they could obtain on a sale was £40,000. The shares were preference and ordinary, and under the memorandum of association the preference shares had a preference as to dividend, but not as to capital. They were cumulative preference shares. Under the prospectus of 1897 it was represented that the preference shares were preferred both as to dividend and capital. The scheme was based on the footing that the rights of the preference shareholders should be regarded as against the ordinary shareholders. The management of the company was now in totally different hands, and the object of the scheme was to deal fairly with both classes. There had been an alteration of the memorandum of association whereby a preference as to capital as well as dividend was conferred on the preference shareholders. The resolutions supporting the scheme had been unanimous. There was an arrear of dividend on the preference shares amounting to over £19,000, and it was part of the scheme which had been supported that the preference shareholders should receive 4,000 fully-paid preference shares in respect of the arrears. He thought there was a legal difficulty about that part of the scheme.

Mr. Justice Joyce said he had nothing to do with that part of the arrangement which dealt with the issue of shares for arrears of interest, but he was satisfied that the loss had been sustained, and he confirmed the reduction of capital as asked.

Sale of Food and Drugs Acts.

Chewing Wax.

On Friday, December 18, 1903, at Coventry, Wm. Neal, of King Street, Bedworth, was summoned by the Warwickshire County Council for selling "chewing wax" which contained 23 per cent. of paraffin wax.

For the prosecution it was pointed out that the County Medical Officer stated that even though the article was labelled "Not to be eaten," the sale of the wax was undesirable.

For the defence, it was pointed out that there was a considerable demand for the wax by grown-up persons whose occupation was of a dry and dusty character.

As there had been two legal decisions fatal to the proceedings, the Bench dismissed the case.

Olive Oil.

On Friday, December 18, 1903, at the Nottingham Summons Court, Robert Latham, 308, Meadow Lane, Nottingham, was summoned for selling olive oil which was not of the nature, substance, and quality demanded by the purchaser, the said oil being adulterated with 95 per cent. of petroleum.

Mr. H. W. Day, of the Town Clerk's department, appeared to prosecute, and explained that the defendant was a greengrocer, and also sold a few drugs. On the 6th ult. Inspector Sutton, of the Health Department, went to the defendant's shop and asked for 4 ounces of olive oil. He was served by the defendant's wife, and paid 4d. for it. On being submitted to analysis, the mixture was found to contain 5 per cent. of olive oil, and 95 per cent. of petroleum oil.

The defendant stated that all chemists kept two kinds of olive oil, "olive optimus," the best quality, and "olive sub," or "under quality." He ordered "olive sub" from the manufacturer, and had not interfered with it in any way. He had written to the manufacturer, and the reply was handed up to the Bench.

The Chairman said that this letter completely gave the defendant's case away, for it was clear from it that "sub" meant substitute. Defendant was fined 20s. and 9s. 6d. costs.

Medicine Stamp Duty Acts.

Selling Medicines Without a Licence.

On Monday, December 21, 1903, at the Newcastle-under-Lyme County Police Court, Isaac Hollins, general dealer, Ravens Lane, Audley, Staffs, was summoned for selling medicines without a licence on Thursday, September 17.

Mr. Fraser, Inland Revenue officer, deposed to calling at defendant's shop and purchasing a bottle of medicine described as "Cheshire bottle." A bottle of the preparation was handed in, and the directions on the label showed that it could be used, with equally beneficial effects, either inwardly or outwardly, upon horses, cows, calves, and human beings. It was recommended outwardly for human use for scalds, burns, sore wounds, chilblains, sprains, lumbago, sciatica, rheumatism, headache, and toothache. Taken inwardly, it was said to be good for the stomach and for spasms, pain in the bowels or inflammation.

The defence was that the medicine was not for sale, but had been bought for defendant's personal use.

In consideration of the fact that this was defendant's first offence, the Bench imposed a fine of 5s. and 9s. 6d. costs.

PRACTICAL NOTES AND FORMULÆ.

Frosting for Window Glass.

Zinc sulphate, 3; magnesium sulphate, 3; dextrin, 2; water, 20. Dissolve, and apply with a brush.—*Annales de Pharm.*, **8**, 384.

Indelible Inks.

(1) Copper hydroxide, 1 drachm; strong solution of ammonia *q. s.*; water, 4 drachms. Dissolve, and add dextrin, 20 grains. (2) silver nitrate, 50 grains; strong solution of ammonia, 4 drachms; tartaric acid, 40 grains; carmine, 5 grains; mucilage of acacia, 4 drachms. Mix in the order written.—*Spatula*, **9**, 86.

Hypodermic Injection of Antipyrine.

Terrier and Pereire prescribe the following combination of antipyrine and cocaine for hypodermic administration. It is said that this does not give rise to pain and irritation such as follows the hypodermic use of antipyrine alone. Antipyrine, 2 Gm.; cocaine hydrochloride, 1 Cgm.; recently boiled water, 4 Gm.—*Bull. gén. de Thérap.*, **145**, 672.

POISONING CASES AND INQUESTS.

The number of deaths reported during the six days ended Tuesday, December 22, 1903, was seven :—

Poison.	Accident.	Suicide.
Alcohol	1	—
Chloroform	1	—
Ether	1	—
Hydrocyanic Acid	—	1
Laudanum	2	—
Salt of Lemon	—	1
Total	5	2

Alcohol.—A child, four years of age, at Manchester, was given whisky and saffron for headache. She afterwards drank half a tumbler of neat whisky, and died from alcoholic poisoning.

Carbolic Acid.—A man at Newcastle committed suicide by taking carbolic acid.

Chloroform.—This anæsthetic caused the death of a woman near Newport.

Ether.—Ether, given as an anæsthetic, caused the death of a woman at Bradford.

Hydrocyanic Acid.—A woman at Monkseaton committed suicide by taking prussic acid. There was no label on the bottle, and nothing to indicate how the woman obtained the poison.

Laudanum.—A Liverpool shoemaker died after an overdose of laudanum, taken by mistake.——At an inquest in Belfast on the body of a man who had died from an overdose of laudanum, it appeared that the laudanum had been contained in a plain bottle, almost identical in appearance with another which had contained a cascara mixture. The coroner suggested amendment of the Pharmacy Acts; the jury added to their verdict a rider that they were unanimously of opinion that steps should be taken by the Home Secretary to place laudanum in the first part of the schedule, so that it might not be sold, as was now commonly done, in plain bottles, often unlabelled. The jury added that they considered all poisons should be sold only in ribbed bottles marked "poison" on either side, and that the glass should be coloured red or green. Correspondence has arisen on the subject in the Belfast Press, one writer suggesting that it would not be practicable or beneficial to place laudanum in the first part of the Poisons Schedule.——At an inquest held before Mr. E. A. Gibson, City Coroner of Manchester, on Monday, it appeared that Henry Tyror, a labourer, was found dead in bed. A bottle which had contained laudanum was then found in his coat pocket. James Dumbleby, in the employment of Messrs. Boots, at their Rochdale Road shop, said the deceased came to the shop and asked for an ounce of laudanum. Witness refused to give it him, but, after a conversation extending over a quarter of an hour, in the course of which the deceased said he had suffered from rheumatism for years, and only wanted the laudanum for rubbing purposes, he supplied him with 4 drachms—half the quantity he had asked for. He had been a few times to the shop.—A medical man, who made the post-mortem examination, said laudanum was so quickly absorbed by the system that no trace of it in this instance could be found. The internal organs showed that the man had been a heavy drinker, and would not have lived much longer under any circumstances. He attributed his death to alcoholic excess and asthma, which had produced heart failure. The jury found a verdict in accordance with the doctor's views.

Salt of Lemon.—A young woman at Newport committed suicide by taking salt of lemon.

MISCELLANEOUS NEWS.

Divisional Secretaries and other Members of the Pharmaceutical Society are requested to assist the Editor by sending local newspapers containing items of interest to chemists and druggists.

Sheffield Chemists' Ball.—This annual function will be held at the Royal Victoria Hotel, Sheffield, on Thursday, February 4, 1903. Tickets, 7s. 6d. each, may be obtained from the Secretary at the Union Offices, Sheffield.

A Social Function Dropped.—The Plymouth, Devonport, Stonehouse and District Chemists' Association, after careful consideration, has decided to discontinue the annual dance. This gathering has always been a social and financial success, but it has lacked the support of the members.

British Pharmaceutical Conference.—The Sub-committee of the Council of the Sheffield Pharmaceutical and Chemical Society, appointed to make the preliminary arrangements for the meeting of the British Pharmaceutical Conference, 1904, consists of Messrs. H. Antcliffe, A. R. Fox, G. T. W. Newsholme, and G. Squire.

Death of Mr. G. Nelson Watts.—Members of the Western Chemists' Association (of London) will regret to hear of the death, which occurred on the 17th inst., of Mr. George Nelson Watts, who had frequently attended the dinners and other meetings of the Association, and numbered among his friends many London chemists. Mr. Watts was a former chairman of the Kensington Vestry, and, during the last few years of his life, was an alderman of the Royal Borough of Kensington.

Aberdeen Junior Chemists' Annual Assembly.—The annual assembly of the Aberdeen Junior chemists was held in the Bon-Accord Hotel, Aberdeen, on Wednesday, the 16th inst. Dancing was commenced early in the evening, there being about fifty couples present, and during intervals songs were contributed. The M.C.'s of the dance were—Messrs. A. L. Shand, A. Catto, and J. G. Ness. The arrangements were very effectively carried out by the energetic secretary, Mr. A. Catto.

Mr. Elliman's Benefactions.—At a meeting of the Urban Council at Slough on Tuesday, the 22nd inst., a letter was read from Mr. Elliman's solicitors stating that gentleman's willingness to give twenty-six acres of land for a recreation ground. Mr. Elliman, in addition, proposes to spend £5,000 in laying the ground out, and further intends investing £10,000 to endow it as a recreation ground. The Council gratefully accepted the gift, and placed on record their high appreciation of the generosity and public spirit of Mr. Elliman.

The Morphine Habit in France.—The husband of a woman who, without a prescription, obtained a dose of morphine from a chemist in Paris, was recently awarded damages, and, on December 18, five chemists were brought up before the Tenth Chamber charged with selling morphine without prescriptions. The prosecutor had followed the advice of a chemist, who recommended him to take an injection of morphine and cocaine. He subsequently became a confirmed morphine-maniac, and had to enter a hospital. He now claims £1,200 from the chemist.

Traveller's Commission.—At Grimsby on Friday, the 18th inst., a commercial traveller named Arthur Harrod Penny was charged with obtaining money by false pretences from Messrs. Robert Colbridge and Co., cod-liver oil manufacturers, of Grimsby, by whom he was employed. Accused sold the firm's preparations on commission, and it was alleged that he sent bogus orders from chemists in London and other places, and thus obtained commission, to which he was not entitled. Accused, who denied that the orders were bogus ones, was remanded for a week for the attendance of witnesses from London.

Instructing a Royal Commission.—No less than 12,163 questions were put to the witnesses before the Royal Commission on Arsenical Poisoning, the report of which was summarised at page 873. Mr. A. H. Allen, of Sheffield, who was asked his opinion as to the constitution of a Court of Reference for the purposes of the Sale of Food and Drugs Acts, said that the principal interests concerned should be represented. He would suggest the chief chemist of the Government Laboratory, a public analyst nominated by the Local Government Board, and another by the Society of Public Analysts, a representative of agricultural interests, of the Chamber of Commerce, and "certainly the Pharmaceutical Society, or preferably druggists and pharmacists generally. You must remember that the Pharmaceutical Society does not by any means include all or even the majority of pharmacists; it is only a Society which consists of a fraction of the practising pharmacists."

Lead Poisoning.—Having considered the award of Lord James and the special rules proposed to be issued under it, the Joint Committee of Allied Pottery Manufacturers has resolved to issue a circular stating that they feel they have done all in their power to convince Lord James that no such rules as proposed were either necessary or reasonable, and regret that he had seen fit to issue an award which will be very difficult to carry out, and might probably be objected to on legal grounds. The Committee, however, recommends that manufacturers should, unless there are special circumstances in individual cases which render such rules absolutely impossible, take no exception to them, but continue to work loyally for the reduction of cases of plumbism. At the same time, the Committee feel it necessary to again place on record their opinion that the compensation scheme will, for some time at all events, have the effect of increasing the number of reported cases.

Another Kind of Substitution.—A very ingenious fraud on chemists and other tradesmen has been brought to light in Bradford, an actress having been convicted at the Bradford City Police Court last Friday on eleven charges of stealing or attempting to steal 10s. by trick. Amongst the prosecuting tradesmen was Mr. F. A. Wilman, chemist. It was stated by the prosecuting solicitor that this woman had victimised half the tradespeople in Bradford. Her plan was to purchase a few small articles in a shop and tender a sovereign in payment, usually getting in change a half-sovereign and some silver. Immediately she picked up the money she made a quick substitution of a bright farthing for the half-sovereign, and put the money down, with the observation, "This won't do; you have given me a farthing." The prisoner pleaded guilty, and was sent to prison for three months with hard labour, the magistrates making an order that a sum of £5 10s. found in her possession was to be divided amongst the victimised shopkeepers.

The Sale of Sheep-dip in Ireland.—At the last weekly meeting of the Committee of the Irish Cattle Traders' and Stock Owners' Association, correspondence from the Pharmaceutical Society of Ireland was read in reference to the recent prosecutions of unqualified vendors at Ballinasloe for the sale of poisonous sheep-dip. The Secretary also read a letter from Mr. Thomas B. Hebbets, of Kilconnell, stating that the County Councils of Galway, Clare, and Roscommon were considering the question. In view of the enormous importance of sheep-dipping for the prevention of scab, and of the fact that at present it is not compulsory on owners to use dips, the Committee felt that some change in the law was necessary to encourage sheep-dipping, especially if it was the fact, as was stated in the letter, that only three men were now qualified to sell dips from Athlone to Limerick—one at Ballinasloe, one at Loughrea, and one at Ennis. Mr. Hebbets proceeded, in his letter, to give other figures purporting to show the difficulty of obtaining poisonous sheep-dip in Ireland. It was decided that copies of the letter should be sent to the Department of Agriculture and to the Pharmaceutical Society of Ireland.

SCHOOL AND COLLEGE NEWS.

School of Pharmacy.—The profit on the recent smoking concert held under the auspices of the School of Pharmacy Football and Athletic Club was £8 5s. Of this, £3 3s. has been given to the Benevolent Fund of the Pharmaceutical Society.

A New College at Cardiff.—Mr. Henry Knape, pharmaceutical chemist, who, after winning medals and certificates of honour at the School of Pharmacy, held a Northway Butt Scholarship at the Square during a part of this year, is about to open a College of Chemistry and Pharmacy in Cardiff, under the name of the "South Wales College of Pharmacy and Chemistry." Mr. Knape's address is 5, St. John's Crescent, Canton, Cardiff

Liverpool School of Pharmacy.—The annual smoking concert of the Liverpool School of Pharmacy was held on Wednesday, December 16, 1903, at The Victoria Restaurant, Basnett Street, Liverpool. Professor Boyce, from the University, took the chair, and made an appropriate speech on the study of pharmacy. The musical programme was ably rendered by Messrs. Bennett, Bice, Genton, Mapei, Maynard, Pickles, and Welch. A clever conjuring display was given by Mr. Berrill. During the evening Messrs. Bice and Welch, on behalf of the students, made presentations to the principal, Mr. Cowley, Ph.C., and to Mr. Catford. A very pleasant evening was terminated with votes of thanks to the chairman, artists, and others.

Westminster College of Chemistry and Pharmacy.—On Thursday, December 17, the students of the College journeyed to Kew Gardens for a botanical excursion, and a most enjoyable time was spent. Afterwards about sixty assembled for an excellent tea, provided by the Principal at the Rose and Crown Hotel. After tea the names of the winners of medals and certificates during the recent College examinations were announced. A smoking concert took place during the evening, when some excellent songs were rendered. During the interval Mr. G. S. V. Wills was the recipient of a very handsome smoking cabinet, fitted throughout, presented on behalf of the students by Mr. Daykin, who spoke in the highest terms of the personal interest Mr. Wills took in his students and of his untiring efforts on their behalf. Mr. Wills, in replying, said it was the one great aim in his life to assist and help all those with whom he came into contact to the best of his ability, and that he hoped the College would be as successful in the January examinations as it was in October last, when the number of successful students exceeded that of any other school. He said it was a source of great pleasure to have been able in the middle of the last two courses to advertise that the College was full, and there was every probability of it being so again next course, judging from the large number of entries. Mr. Walden (secretary) was also the recipient of a small souvenir.

Edinburgh Royal Dispensary School of Pharmacy.—The students' annual supper took place in Ferguson and Forrester's Rooms, Princes Street, Edinburgh, on Friday, December 18, Mr. William Duncan, Ph.C., F.C.S., principal, presiding, and Messrs. H. G. Mackenzie, Ph.C., and E. J. Brown, Ph.C., acting as croupiers. There were also present Dr. John Cumming, Dr. George Coull, Messrs. D. B. Dott (Chairman of the Executive of the North British Branch of the Pharmaceutical Society), Peter Boa, Archibald Currie, J. F. Tocher, D. McEwan, J. Blenkiron, J. Rutherford Hill, and others. After an excellent supper, and the loyal toast having been duly honoured, Dr. John Cumming proposed "The Pharmaceutical Society." He recalled the time when he himself was a student at the Royal Dispensary School of Pharmacy. He had a lively recollection of his experiences at the Minor Examination, which he humorously described as it was then conducted. He believed the Pharmaceutical Society had done, and was doing, much for pharmacy. Their examinations had been raised in standard as in all other professions, and he believed they were more fairly conducted now than in former times. He would like to see the North British Branch reconstituted in some way that would give it a stronger position and more independence than it at present possessed.—Mr. D. B. Dott, in replying, said he would not undertake to reply for the Council of the Society, for he knew no more of their proceedings than any ordinary reader of the journals. He agreed with Dr. Cumming's reference to the North British Branch. He did not think they should be merely a registering instrument, moved from the London office. A little more autonomy would do good. The interferences from the south, prompted by the aggressive action of perhaps one member of Council, had not always been beneficial, and he thought a local body meeting on the spot was generally better able to judge what was right to be done. Alluding to the large percentage of failures in the Minor Examination, he said he was afraid there was a tendency to fix a false standard. It would never do to let duffers through, but, at the same time, there was a way of giving very unlikely things which puzzled even good men, and was beyond the scope of what was fairly to be expected. He thought the examination should be divided, so as to give time for the work to be done by both candidates and examiners in a more leisurely way, thus allowing a fairer judgment.—Mr. D. McEwan proposed "The Board of Examiners," which was acknowledged by Mr. Peter Boa, who said he could assure them that examiners had the utmost sympathy with candidates, and it was far more agreeable to them to see a man pass than to see him dismissed.—Other toasts were "The Pharmacy Students," proposed by Dr. George Coull, and responded to by Mr. William Duncan; "The Medical Profession," proposed by Mr. J. F. Tocher, and replied to by Dr. Cumming; "The Ladies," by Mr. R. McDougall, replied to by Mr. H. M. Spoor; and "The Chairman and Croupiers," proposed by Mr. A. Currie and replied to by Messrs. Duncan, Mackenzie, and Brown. During the evening Mr. H. Clarkson, on behalf of the students, presented to Mr. Duncan a gift of books, and to Messrs. Mackenzie and Brown a case of pipes each. Songs, recitations, and musical selections by Messrs. Spoor, Bertram, McManus, Corson, Tait, Caithness, Duncan, Fairful, D. Hill, J. R. Hill, Stoddart, Hirst, Low, Shepherd, and Bowskill made up an exceedingly enjoyable evening, Messrs. Fairful, Bowskill, and Tait acting efficiently as accompanists.

TRADE NOTES.

"Hyodin."—Messrs. Thomas Christy and Co. wish to draw the attention of the readers of the Journal to the fact that Messrs. R. W. Gardener have adopted the trade name "Hyodin" for their syrup of hydriodic acid. Messrs. Christy and Co. will be pleased to re-label any stocks customers may have on hand.

Milk Food Chocolate.—A chocolate of delicious flavour is manufactured by Messrs. Allen and Hanburys, Limited, Bethnal Green, London, E. The "Allenbury's" Milk Food Chocolate contains 25 per cent. of the "Allenbury's" Milk Food No. 1, and is intended to be used as a concentrated and digestible form of nutriment. It is the intention of the makers to keep the sale of this chocolate, which is packed in attractive cartons, in the hands of chemists.

A Popular Perfume.—It is not too late to obtain supplies of Royal Orchid Blossom Bouquet for the New Year from Messrs. Ayrton, Saunders, and Kemp, Limited, 34, Hanover Street, Liverpool. This perfume is a very good selling line, and with orders for six dozen bottles the retailer may have his name printed on the labels free of charge. Full particulars as to terms will be found in the advertisement columns of the Journal.

COMPANY INTELLIGENCE.

Wray's Drug Co., Limited.—Capital, £2,000, in £1 shares. Object, to carry on the business of chemists, druggists, drysalters, etc. Registered office: 8, High Holborn, W.C.

Easephut Manufacturing Co., Limited.—Capital, £1,000, in £1 shares. Objects: To carry on the business of chemists, manufacturing drysalters, makers of pills and ointment, oil merchants, vendors of foodstuffs, perfumes, glassware, bottles, etc. Registered office, 1,210, Chester Road, Stretford.

James S. Balmer, Limited.—Capital, £4,000, in £1 shares, to carry on the business of pharmaceutical chemists, druggists, etc., and to carry out an agreement between James S. Balmer of one part and James McFadden, on behalf of the company, of the other. Registered office: 101, Main Street, Bangor, County Down.

Chemicals, Limited.—Capital, £60,000, in £1 shares. Objects: To adopt an agreement with the Eschweiler-Woltereck Process Syndicate, Limited; to acquire any patents, patent rights, inventions, concessions and the like, and to carry on the business of manufacturers of ammonia and compounds, and salts of ammonia, sulphuric acid, nitric acid, acetic acid, acetone, acetate of lime, acetic acid salts, tar, naphtha, paraffin wax, or other products of the destructive distillation of carbonaceous material, water and producer gas, coal gas, alkalies, alkaline salts, charcoal and coke, general chemical manufacturers, mechanical, electrical and chemical engineers, etc. Registered office, 3, Edinburgh Mansions, Howick Place, S.W.

PERSONALITIES, BUSINESS CHANGES, ETC.

Mr. W. Ward, F.C.S., of Sheffield, for many years Local Secretary of the Pharmaceutical Society, is very seriously ill.

Mr. Frank Brown, government analyst, Hong Kong, has been granted a year's leave, and will sail for England on February 20.

Messrs. C. J. Hewlett and Son give notice that their establishment will be closed on December 28 and 29 for the purpose of stock-taking.

Mr. G. Baxendale, a former lecturer in the School of Pharmacy, Liverpool, obtained first-class honours at the recent B.Sc. examination of the London University.

Mr. A. G. Watkins, formerly of St. Bartholomew's Hospital Dispensary, has acquired the business formerly carried on by Mr. F. H. Johnson, of 78, Upper Tulse Hill, Brixton, S.W.

Messrs. T. E. D. Low and T. F. Johnstone, chemists, Dumfries, have dissolved partnership, Mr. Low having retired from the business. The business will be carried on in future by Mr. Johnstone.

Mr. W. Thomas, Builth Wells, Breconshire, Mid-Wales, has retired from business. The fixtures and stock have been purchased by Mr. Ward, chemist, High Street, of the same town. Messrs. Tomlinson and Son, Manchester, were the valuers.

Sir Charles Tennant, head of the great chemical firm of Tennant and Sons, president of the United Alkali Company, and chairman of the Union Bank of Scotland, seems to be the only representative of chemical industry among Mr. Chamberlain's Tariff Commissioners.

The Marriage arranged between Mr. T. Cushway Bliss, eldest son of Mr. Thomas Bliss, of Coningsburgh, Ealing, and Maud, only daughter of Mr. Albert Cooper, of Grimston Lawn, Ealing, will take place quietly (owing to the family being in mourning for the bride's mother) on January 6.

Mr. R. Clay Sudlow, P.Asst.G.D.C., of the firm of Messrs. Burroughs Wellcome and Co., presided at the election meeting of the Jubilee Masters' Lodge, 2712, at the Hotel Cecil on Friday, December 18, when Mr. Thomas F. Halsey, M.P., the newly-appointed Deputy Grand Master of English Freemasons, was the principal guest.

Mr. G. W. Slatter, analytical chemist, of Messrs. Titus Salt, Bart., Sons and Company, Saltaire, was presented by his colleagues, on the 17th inst., with a valuable silver bowl as a parting gift on his leaving the service of that firm, after being there for twenty-four years. Mr. Slatter is taking up the position of managing director of Messrs. W. Lynd and Company, soap manufacturers and oil refiners, of Leeds. Mr. Slatter was a judge of fats, oils, soaps, and dye-wares at the Royal Yorkshire Jubilee Exhibition of 1887.

A Cheap and Wholesome Sparkling Beverage.

Take a twelve- or fourteen-gallon clean cask and nearly fill it, leaving room for about another half-gallon of liquid; add to it a pint of good vinegar. Take a square of clean washed muslin and tie up in it about 3½ lb. of white sugar and 1½ oz. of dried elder flowers. Suspend the muslin in the cask, introducing it through the bung hole, which has been previously enlarged for that purpose, so that its contents are immersed beneath the surface of the water. In five or six days withdraw the bag, stir the liquid with a stick, allow it to stand for a day, then bottle off. Take care to stand the bottles upright. As a rule, the beverage will be fit to drink after being in bottle for about eight days.—*Rev. Méd. Pharm.*, **10**, 75

LETTERS TO THE EDITOR.

All Communications for the *Pharmaceutical Journal* must be addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, unless specially arranged for in advance. The matter should be written clearly and concisely on one side of the paper only and must be authenticated by the names and addresses of the writers, as no notice can be taken of anonymous letters. Articles submitted for the Editor's approval should be accompanied by stamped addressed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable. Reprints of articles cannot be supplied unless the authors communicate with the Editor before publication. The right to reproduce all original matter and illustrations published in the Journal is strictly reserved.

Pharmaceutical Unity.

Having so recently trespassed on your valuable space, I am reluctant to again ask your indulgence, but after a careful reading of my friend Mr. Woolcock's remarks in your issue of December 12, I cannot refrain. He has, in his desire to give further prominence to the necessity for pharmaceutical unity, penned a paragraph which is, in my opinion, extremely impolitic. Mr. Woolcock dwells upon the necessity of enlisting the practical sympathies of all eligible men—particularly young ones—in the interests of the parent Society, and rightly so, but I deplore that he should have proceeded to comment adversely on the personnel of the present Council, for such is the inference I feel impelled to draw, after reading his communication. If I am mistaken, so much the better, but whether I have misread him or not, it must be common knowledge that there are a large number of chemists who have accustomed themselves to regard the Council as a convenient scapegoat at which to hurl any abuse of which they may wish to dispose. Mr. Woolcock questions his reader in the following manner:—Why do so few vote at our Council elections? And he gives the following, to me astonishing, answer. "Because the new candidates do not seem likely to be any better than the old—and might be worse." As Mr. Woolcock introduced this statement by a *précis* on the advantages of youth, in which he mentioned my name, I feel it is possible that I may be associated with his subsequent statement, a circumstance which I should much regret. Would it not be more conventional, more politic to set a certain value on grey hairs? They usually betoken experience. Personally, I should be extremely sorry to hear that the seats of the mighty were occupied by men whose principal virtue was the possession of "fresh young blood," and although I recognise this substance as a delightful asset, I believe it should be subjected to the process of evaporation for many years before it becomes of a suitable consistence to flow through the veins of a councillor, pharmaceutical or otherwise.

It is in my opinion ridiculous to blame the Council for the abundance of the weed ignorance which stifles the *esprit de corps* of sixty out of every hundred registered chemists, and prevents them from uniting with the remainder for the promotion of their mutual welfare. Should we not do well to more generally recognise the important services which the Council, has, even in recent years, rendered to pharmacy? There is the important subject of education. The old inadequate preliminary examination has been abolished and replaced by standards more in line with modern requirements, There has not yet been time to perceive the effect of this change, but it cannot fail to benefit us in the future. New regulations for the sale and storing of poisons have been brought before the notice of the Privy Council, and pharmaceutical views on the subject upheld by the medical profession; this also through the agency of the Council. Even the anathema maranatha of company pharmacy has received their conscientious attention, for which all registered chemists should be at least thankful. I would go further and say that the planting of a new seed at Westminster, even though it be a small one, testifies to the diligence of our

Council. For have they not been compelled *en route* to run the gauntlet of unfair opposition, the opposition of men who though eligible, refrain from ventilating their grievances in an open manner as members of the Society, but prefer to remain with the enemies of their fellow-craftsmen and lend a helping hand to any speculator who offers a sufficiently tempting bribe? Could any discovery be more embarrassing, more calculated to upset the schemes of the most talented executive than the knowledge of the existence of treachery? "'Tis with our judgments as with our watches; none go just alike, yet each believes his own." Recognising this, we must willingly grant every man the right to possess an opinion of his own, and so long as he holds and exercises it in an open and honest manner he is within his rights; but when he is found outside the lines of his own community, aiding and abetting the enemies of his kinsmen, then I venture to suggest his criticism is unfair and dishonest.

There are 60 per cent. of such undesirables distributed throughout the country, therefore I contend that the Council of the Pharmaceutical Society is to be warmly congratulated upon the above accomplishments in the face of such opposition. Again, our executive have shown that they are aware that the position of pharmacists can only be efficiently improved by further legislation, and no doubt the members of that executive realise a legal truth, which apparently is unknown to many of their critics. "The law is a sort of hocus-pocus science, that smiles in yer face while it picks yer pocket, and the glorious uncertainty of it is of mair use to the professors than the justice of it." If we recognise truth in the writing of Charles Macklin then we shall have little difficulty in realising that no body of men can be ignominiously treated if they fail in a contest at law, even if the issues are well defined as desirable and in the public interest, especially if they are compelled to face not only the bogey of chance, but the greater one of treachery, the prejudiced opposition of their own kinsmen. "Who does the best his circumstance allows, does well, acts nobly, angels could do no more." Therefore, let us do all in our power to secure a representative and active electorate, and so weaken the ranks of our Council's enemies, and give them the opportunity of forging ahead with hope of success in their endeavour to improve the affairs of registered chemists. Let me repeat the questions which Mr. Walter H. Keen asked in the course of a stirring letter published in your Journal last week: "Are we to go to Parliament as a Society divided against itself?" If so, it will be without the least hope of success. We shall fail. Let us as far as our environment allows resolve as Mr. Keen suggests: "To live as pharmacists and act as pharmacists," whatever our lot as regards occupation. Whether we live principally by the returns due to photographic, perfumery, or pharmaceutic departments, there can be nothing to prevent us acting in this matter and as educated men. Let us sink our petty differences, shake hands with our fellow craftsmen, and do all in our power to further pharmaceutical unity.

Folkestone, December 17, 1903. CHARLES T. ALLEN.

The Pharmacy of Phenol.

May I, with all humility, point out to Mr. John Williams, that when you mix 5 per cent. of phenol with olive oil, you may get a solution, whereas if you mix an equivalent proportion of liquefied carbolic acid, a muddy emulsion results. If the latter combination be left on the pharmacy shelf for some time it subsides into two layers, of which the upper is comparatively clear, but of a slight and unknown strength, and the lower an oily looking and untrustworthy acrid liquid, of doubtful composition, but apparently with a large percentage of phenol. The problem therefore is not so simple as merely to make an albumen for the 10 per cent. of water, the physical characters of the resulting fluid varies, and if Mr. Williams had a customer with an irritable varicose ulcer, all his eloquence would fail to convince the patient that one solution was just the same as another. This is what I wished to make plain in my original communication, namely, that the effects of carbolic solutions vary with the media even more markedly than with the percentage, but owing to my undecipherable caligraphy the point was not made clear. Again, Mr. Williams anxious to instruct, says that glycerin would have a similar action to olive oil. This is a heresy which I am anxious to extirpate. If he will rub for a minute into the back of one hand a 20 per cent. solution of phenol in olive oil, and into the back of the other a like strengthened solution in glycerin, he will be ready to admit a very different action. Should he care to smear a little of each on a mucous surface, as his lips, he will be still more ready to admit a distinction in effect, if not a difference in strength. It is perhaps well to remark that a trade pamphlet has recently insisted on the peculiar character of the incorporation which results during the preparation of the carbolic acid ointment of the Pharmacopœia when one attempts to combine carbolic acid which will not combine with hard paraffin, along with soft paraffin which will not dissolve glycerin. Every chemist in the three kingdoms has several customers who constantly apply such an ointment to their sore legs; let him then listen a little more patiently when they complain that it is not always the same, for the physiological test of application to a raw ulcer is more delicate than any yet devised by the pharmacist.

Dublin, December 17, 1903. J. C. McWALTER.

Dr. McWalter's communication on phenol serves to remind me of my first acquaintanceship with carbolic acid. I was told to empty a large tin of the solid acid into small pots. I broke the stuff into small pieces with a hammer and chisel, and lifted them with my hands into the pots. I had not been long at the work before my hands turned white and became numbed. I thought this must be the preparation used by people to whiten their hands and complexions, but a few hours afterwards I had found out my mistake. This is now eighteen years ago, and ever since I have handled phenol with great care, and should any come in contact with the skin a little S.V.M. on cotton is at once applied to the spot. This prevents whiteness and burning. With regard to the strength of carbolic solution supplied to the public, like Mr. Williams, I find that a 2½ per cent. solution prepared from the liquid acid gives satisfaction; but, unlike Mr. Williams, I should not prepare 5 per cent. carbolic oil with the liquefied phenol, as it makes the preparation milky. It is better to use the crystals and the finest olive oil. But let me here remark that I had a customer a short time ago who purchased 10 oz. carbolic oil (1 in 20). It was returned with the remark that it contained far too much carbolic for a varicose ulcer. It was diluted to 1 in 40, but was again returned as being too strong. This time the phenol was left out altogether, but once more it came back, but accompanied by the bottle of "proper" carbolic oil prepared by the doctor in attendance. This on examination was found to be 1 in 20 carbolic oil prepared with "liquefied" phenol and olive oil. A supply of this was made up and sent to the patient, who expressed satisfaction with it. Was this merely a whim on the part of the patient, or had the small quantity of water contained in the liquid phenol really a soothing effect? Perhaps Dr. McWalter will answer. On looking into a jar of Ung. Ac. Carbol., B.P., this forenoon, I noticed the glycerin had separated and the carbolic acid was crystallising on the side of the pot. I think the addition of glycerin is a mistake and would recommend soft soap instead.

"AN 'ORDINARY' ASSISTANT" (26/20)

December 15, 1903.

The Title of "Pharmacist."

I notice under "Replies to Correspondents" in this week's issue of the Journal that you state the title "pharmacist" is restricted to persons registered as pharmaceutical chemists under the Pharmacy Acts, 1852-68. Referring to Section 1 of the Act, I find anyone qualified and registered under the Act can assume or use the title. I should like to know how this decision is arrived at?

Edinburgh, December 18, 1903. A. McCutcheon.

⁂ The operative Section is Section 15 of the Pharmacy Act, 1868, which makes it an offence for any person to use the title of "pharmacist" if not registered as a pharmaceutical chemist. Section 1 is not, perhaps, worded too clearly, but Section 15 admits of no doubt on the question.—[Ed. *P.J.*]

Information Wanted.

Houbigant's Perfumes (J. R. R.—104/4).—Name and address of London agent.

REPLIES TO CORRESPONDENTS.

Information required by readers will be published in this column as early as possible, but the Editor cannot undertake to reply by post, even though stamped addressed envelopes accompany the queries. Replies will, in all cases, be referred to the sender's initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that the solids are to be weighed and liquids measured. Plants for recognition should be addressed to the "Curator, 17, Bloomsbury Square, London, W.C.," accompanied by a stamped, directed envelope for reply. No notice can be taken of anonymous communications.

Label (J. S.—103/34).—The wording on your label does not incur liability.

Garrod's Sulphur Lozenges (T. K.—104/2).—Precipitated sulphur, 5 grains, and cream of tartar, 2½ grains, in each lozenge.

"Megaloid," etc. (H. H. P.—103/29).—Your communication seems to be more suitable for the advertisement columns than for the correspondence columns.

Trade Mark (D. J. B.—104/6).—You should apply to Mr. R. W. Barker, 56, Ludgate Hill, E.C., for advice, or for a copy of his pamphlet, 'Trade-mark Notes.'

Ivory Jelly (W. W.—104/7).—All that is necessary is to boil the ivory dust with water for some hours and flavour to taste, lemon juice and sugar being frequently added.

Dentistry (H. B. T.—103/33).—We do not know whether your questions are meant to be taken seriously, or are merely conundrums for the festive season. In either case, we give them up.

Cod-liver Oil Emulsion, B.P.C. (J. T. G.—104/1).—The length of time during which this emulsion will keep good is a matter which should be determined by experiment. We have no information on the subject.

Prollius' Fluid (A. H.—104/5).—Ether, 88 parts by weight; absolute alcohol, 8 parts by weight; solution of ammonia, 4 parts by weight. The mixture was originally introduced as a solvent for extracting the alkaloids of cinchona.

Numbers of Recipes (A. S.—265/43).—We shall furnish you with the numbers shortly, but you can readily understand that it is difficult to deal with so many thousands in a limited time. There will be no unnecessary delay in issuing the book. Many thanks for your expressions of goodwill, which are cordially reciprocated.

Glyco-Heroin (J. B. P.—104/3).—You might make it on the lines of elixir of heroin and terpin hydrate, each fluid drachm of which contains 1/48 grain of heroin and 1 grain of terpin hydrate. The vehicle might consist of alcohol (90 per cent.), 6 fl. ounces; glycerin, 12 fl. ounces; and distilled water, sufficient to produce 1 pint.

Medicine Stamp Difficulty (G. M.—265/50).—Yes, you are right in assuming that you may continue to use the old labels for cough mixture, etc., until the end of March, provided they are not liable apart from the special exemption. We were informed in August last that this extension of the period of grace would be granted if asked for by the Council, and, as explained last week, the concession was granted on receipt of a letter from the Secretary, following one in which we explained to the Board that a further extension would help to prevent any inconvenience resulting from the Board's change in practice.

BIRTH.

Rose.—On November 30, at High Street, Brightlingsea, to Mr. and Mrs. Alfred Rose, a daughter (Ella Adeline Ivy).

MARRIAGE.

Gregory—Bravery.—On December 9, at Holy Trinity Church, Bournemouth, by the Rev. J. Martin, William John, eldest son of William Gregory, of Weymouth, to Olive, second daughter of William Bravery, of Brighton, Sussex.

DEATHS.

Reeves.—On December 12, Richard Reeves, Chemist and Druggist, Norwich.

Thomas.—On December 17, Edwin Richard Thomas, Chemist and Druggist, Beaumaris. Aged 62. Mr. Thomas, who had been a member of the Pharmaceutical Society since 1877, formerly resided at Bethesda, and was well known and highly respected in the district.

Wood.—On December 2, Henry Wood, Chemist and Druggist, Tiverton. Aged 72. Mr. Wood had been a member of the Pharmaceutical Society for several years.

Young.—On December 17, John Young, Pharmaceutical Chemist, Newport, Mon. Aged 71. Mr. Young, who was the senior partner in the firm of John Young and Sons, chemists, 20, High Street, Newport, died suddenly of heart failure. He was a native of Berwick-on-Tweed, and went to Newport as an assistant to the late Mr. E. J. Phillips, J.P. When Mr. Phillips retired Mr. Young purchased the business, and carried it on ever since, latterly in conjunction with two of his sons. He was a director of the Newport and Monmouthshire Hospital, and was upon the house committee of the same institution.

Calendar for the Week (December 27, 1903, to January 2, 1904).

Days of M	Days of W	Events of the Week.	Sun Rises	Sun Sets.
27	**S**	**First Sunday after Christmas.** ◗First Quarter, 2.23 a.m.	8.7	3.54
28	M	Innocents' Day.	8.7	3.55
29	Tu	W. E. Gladstone born, 1809; died, May 19, 1898.	8.8	3.56
30	W	Sir James Paget died, 1899.	8.8	3.57
31	Th	Hon. Robert Boyle died, 1691; born, Jan. 25, 1626.	8.8	3.58
1	F	New Year's Day.	8.8	3.58
2	S	Last Day for receiving Subscriptions to the 'P.J. Formulary' at special price.	8.8	4.0

LETTERS, NEWSPAPERS, QUERIES, and other COMMUNICATIONS have been received from Messrs. Aldridge, Anderson, Arrandale, Ashby, Aston, Atkin, Bailey, Bartlett, Bathurst, Beach, Beattie, Beckett, Bentley, Bingham, Bisset, Blamey, Boardman, Bonn, Boucher, Bratley, Brook, Cameron, Cargill, Carr, Casewell, Clouting, Cocker, Coghlan, Cowley, Creasly, Cross, Cutmore, Davies, Dean, Dee, De Lisle, Donald, Drake, Druce, Duncan, Dunn, Ellerington, Farrer, Flemming, Forster, Foster, Frazer, Gardner, Gillett, Glaister, Gough, Graham, Granger, Gray, Hanson, Harper, Harrison, Harrop, Hartshorn, Harvey, Hazlett, Heading, Hill, Holloway, Hunt, Huntley, Ingall, Ingham, Jackson, James, Jay, Johnson, Johnstone, Jones, Kirk, Kirton, Knape, Laurie, Laycock, Lea, Lescher, Levi, Lewis, Littlefield, Llewellyn, Lodder, Loosmore, Lunan, Lyon, McCutcheon, McDonald, Mackay, Macrae, McWalter, Madden, Manson, Masson, Matson, Middleton, Millidge, Milner, Monaghan, Moore, Moss, Mould, Napier, Neale, Newcome, Nix, Normansell, Norton, Part, Pater, Pattison, Peake, Pears, Pearson, Penty, Philpott, Plowright, Poll, Pout, Pratt, Preston, Prime, Prisley, Randall, Rayson, Rees, Reith, Richardson, Robert, Robertson, Robinson, Rose, Rntter, Sandy, Sawyer, Saxby, Shaw, Shelley, Sheffield, Shenstone, Simpson, Slade, Smith, Smorthwaite, Spence, Squire, Staning, Steggles, Stevenson, Storrar, Stratton, Sutherland, Sweetman, Swinn, Tattersall, Taylor, Thomas, Thompson, Tilsley, Tuke, Tunbridge, Turner, Wark, Watkins, Watts, Wellbridge, Wells, Weston, Whiston, White, Whittle, Wiggin, Williams, Wilson, Winzer, Wolstenholme.

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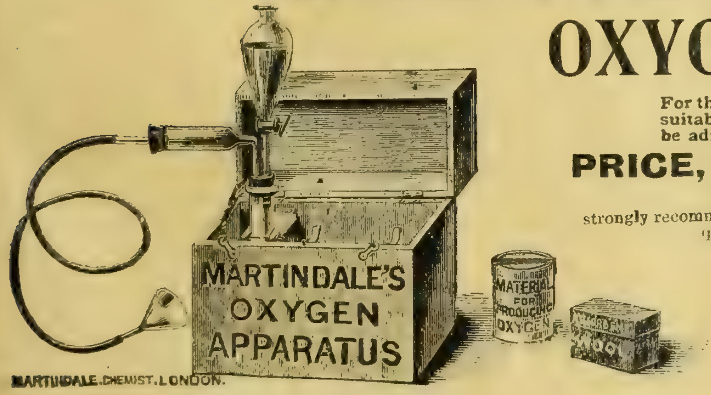

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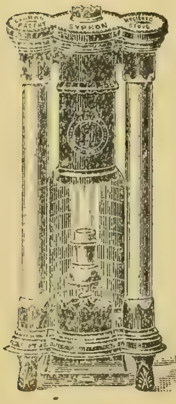

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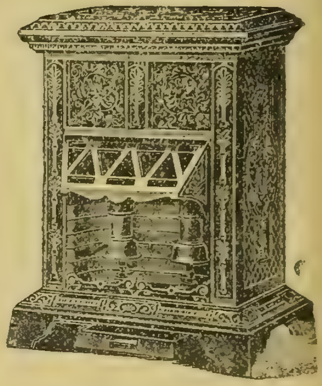

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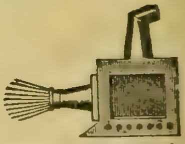

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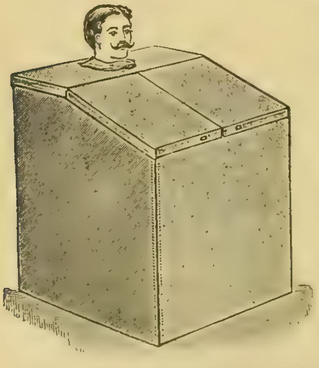

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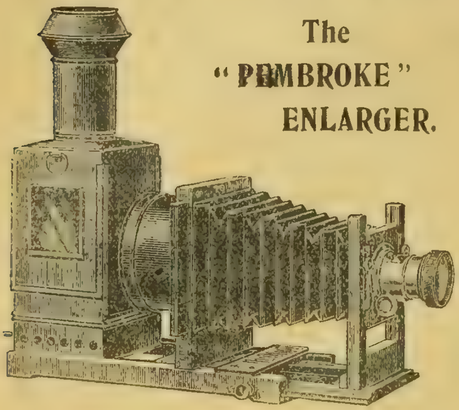

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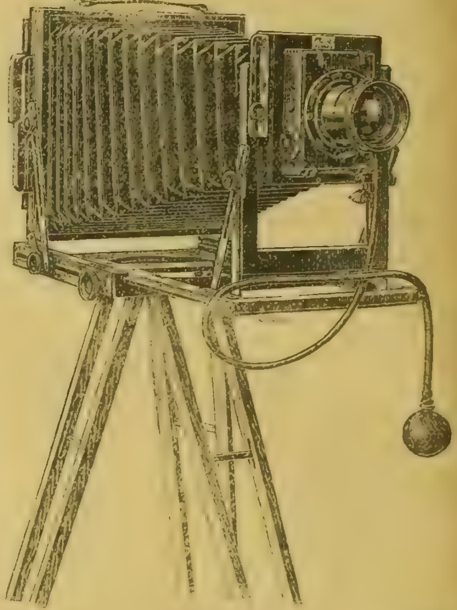

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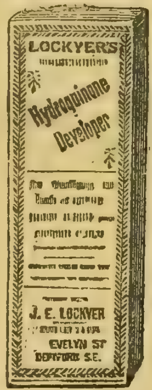

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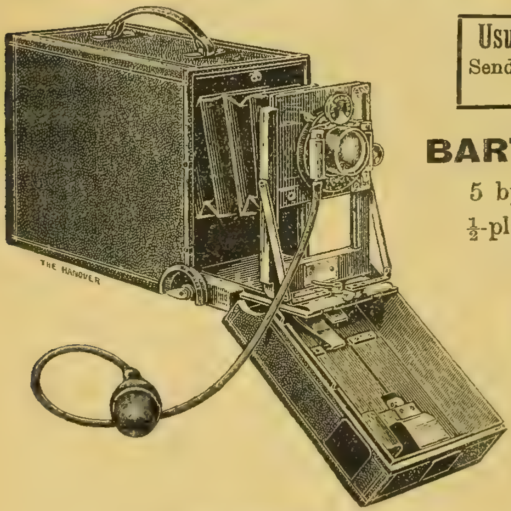

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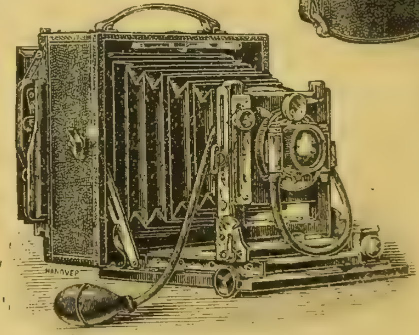

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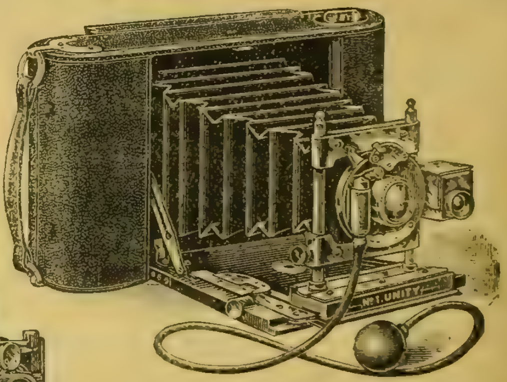

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This Camera is specially adapted for the **VIDIL** Films, which permits each picture to be focussed on a screen before exposure.

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THE WIVES AND DAUGHTERS OF REGISTERED CHEMISTS AND DRUGGISTS ONLY

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LIMITED,
SOUTHWARK, LONDON, S.E.

Offer the following prizes:—

First Prize	**£10**
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for the **BEST ADVERTISEMENTS** of **WRIGHT'S COAL TAR SOAP** based upon the following familiar quotations:—

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4. **"It's guid to be merry and wise."**—*Burns.*
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(*a*) Advertisements should be as brief as possible.

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(*h*) The decision of the Managing Director of Wright, Layman & Umney, Ltd., is final.

The result will be announced in the trade papers of January 2nd, 1904.
Cheques will be in the letter-box of the prize winners on New Year's morning.

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A. J. BROWNING Ltd.

The Artificial Teeth Laboratories,

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Supplies first-class Sets or Partial Sets of Teeth made to Chemists' models or impressions and bites at the following prices.

PRICE LIST FOR VULCANITE WORK.

Description.	A Single Tooth. 10% cash dis.	Partial Set of 2 to 6 Teeth. 10% cash dis.	Partial Set of more than 6 Teeth. 10% cash dis.	Complete Set Upper or Lower. 10% cash dis.	Full Set Upper and Lower. 10% cash dis.
Best Quality Vulcanite, Ash Teeth in front	3s.	1s. 6d.	1s. 3d.	15s.	30s.
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Third Quality Teeth and Vulcanite ..	2s. 0d.	1s. 0d.	9d.	10s. 0d.	20s.

Vulcanite repairs from 1s. 9d. Teeth adding, 1s. 6d. D.A. from 2s. Gold Strengtheners, 5s. and 7s. 6d. Dental Alloy Strengtheners 2s. 6d. and 4s. Gold Wires, 1s.6d. Lord's Suction, 1s. Springs with Bolts and Swivels, 2s. We can also make a cheaper Full Set for 15s.

Full Price List Free. **TERMS: 10% cash dis. Monthly Account on approved References.**

Postal Orders or Cheques should be crossed Stamford, Spalding and Boston Banking Co., Limited. Return Carriage Paid.

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Pocket Flash Lamps

Superior quality Flash Lamp. Each Lamp tested to give a brilliant light immediately before despatch. To retail, at from **1/4** each.

Handsome Presentation Flash Lamp, in Nickel or imitation Tortoiseshell Case, **2/9** each.

Spare Batteries - **9**d. each.
Spare Lamps - - **7**d. „

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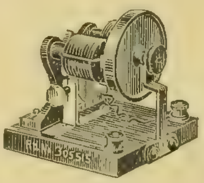
XACTLI MOTOR



The price of this well-known and popular Motor is now reduced to **2/3** each.

A few of last year's pattern left over, reduced to **2/-** each.

Send for Catalogues of Electrical Goods, Novelties, Models, etc.

Section "**N**":—Electrical Goods, Scientific and Mechanical Novelties.
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From Impressions or Models.

REDUCED PRICES. SUPERIOR WORK.

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(The **original** old-established Dentist to the Profession).

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National Telephone, 226.

Trial Case Solicited. Price List Free. Established 1882.

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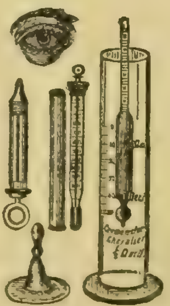
GLASS WORKS
GOTHA, GERMANY



Clinical Thermometers in every variety and most accurately graduated

"HELIOS" ARTIFICIAL EYES
OF THE BEST MAKE.

CHEMICAL, BATH, ROOM and WINDOW THERMOMETERS, AREOMETERS, MEASURES, SYRINGES, and all Glass Instruments and Glass Ware in the best workmanship at lowest prices.

Price Lists (abbreviated) in English free on application

SOME GOOD PAYING LINES

CAMWAL

Table Waters

Make a note of the following:—

FOR

SPRING

SUMMER

AUTUMN

WINTER

ALL SEASONS, ALL TIMES.

SODA, SELTZER, LITHIA, POTASS,
LEMONADE, BREWED GINGER BEER,
PALE DRY GINGER ALE,
VINRUBE, like Claret Cup, for Parties, &c.
LIMONETTE, like Lemonade, but less sweet and a splendid thirst quencher.

"Fontalis,"

The Pure Natural English Table Water.
Bottled at our Springs at Harrogate.

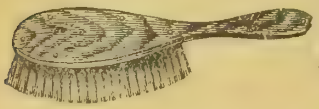
"CAMWAL'S" FEATURES:

Specially built Factories: Silver-lined Machinery; Analytical Supervision; Sterilized Water; Best Materials; Care and Cleanliness; High Quality; Purity; Prompt Delivery.

PRICE LIST, ADVERTISING LITERATURE, &c., on application to the

CAMWAL FACTORIES at LONDON (112, Pembroke St., N.),
MANCHESTER, BIRMINGHAM, BRISTOL, HARROGATE & MITCHAM

ENCOURAGE HOME INDUSTRY
FINEST QUALITY OF
GRAIN SPIRIT
Free from any deleterious matter, for Manufacturing purposes. Any strength.
QUOTATIONS AND SAMPLES ON APPLICATION TO—
JAMES CALDER & CO., LIM., DISTILLERS, BO'NESS, N.B.



Head Office and Factories:
Castle Mills,
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BIDWELL'S
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Tooth Brushes Always reliable, extra quality, every Brush guaranteed.
Nail Brushes in Bone, Ivory or Wood. Many Novelties. Patent Self Drying, &c., &c.
Hair Brushes in Bone, Ebony, Ivory and Wood, extra value.

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IMPORTANT ADDITION TO P.A.T.A. LIST.

DR. MACKENZIE'S
Cures Catarrh or Cold in the head in a few hours
SMELLING BOTTLE
Relieves Hay Fever and cures Nervous Head ache in a few minutes
CATARRH CURE

Dr. Mackenzie's
CATARRH CURE SMELLING BOTTLES.

Dealers in Patent Medicines should always stock this preparation, which has the largest sale of any Smelling Bottle in the World.

It is well advertised, sells at sight, and when sold at the restricted *minimum* retail price of 11d., bears *a guaranteed profit of over 20 per cent.*

Sent out in Fancy Cardboard Cases containing half a dozen Bottles. It is the best-got-up Shilling Article in the market.

NOTE.—The Proprietors are shortly placing on the Market a New-shaped Bottle suitable for carrying in the waistcoat pocket, and which, when ready, will be introduced to the Trade.

Showcards and Handbills from
MACKENZIE'S
CURE DEPÔT,
READING.

LONDON DEPÔT:
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BRUCE'S SAFETY
PARABOLIC REFLECTOR LAMP
With Safety Tube and Filler at Side.

PRICE
4/6
EACH.

All Nickel-Plated 1/- extra.

The Vessel is made of Brass and the Reflector Silver-plated.

TO Chemists and Druggists in the Country and Abroad where gas or electric light is not available **OUR LAMP** is of thorough Practical use. As supplied and used in Guy's Hospital for the past six years.

Send for Illustrated List to
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CHINOSOL
A Non-Poisonous, Non-Corrosive, Odourless,
ANTISEPTIC DISINFECTANT DEODORANT
Very Portable. *Readily soluble in Plain Cold Water.* *Moderate Cost.*

PURE POWDER; COMPRESSED TABLETS; ANTISEPTIC DRESSINGS; OINTMENTS; LUBRICANT JELLY; SOAPS, &c., for Medical, Surgical, and Veterinary Use.

CRUDE Gran. POWDER; SANITARY TABLETS; SPRINKLING POWDERS, for making disinfecting fluids of any desired strength by simply dissolving in plain cold water.

A FIRST AID ANTISEPTIC CASE and SANITARY HYGIENIC REQUISITE for any emergency when at home or travelling. The case can be safely carried in pocket.

FULL LITERATURE, DETAILED LIST OF PREPARATIONS sent free by
THE CHINOSOL HYGIENIC COMPANY (B. KÜHN, *Manager*).
New Address: 16, ROOD LANE, LONDON, E.C.
B. KUHN appointed Sole Agent for the sale of CHINOSOL in the British Empire.

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The Juice of the FINEST SELECTED ENGLISH MEAT in its Natural State containing the Albumen uncoagulated, together with the other NUTRITIVE PROPERTIES READY FOR IMMEDIATE ASSIMILATION.

Of ALL CHEMISTS, or direct of **BRAND & CO., Ltd., MAYFAIR, W.**

MUMFORD'S (Farringdon Road, London, E.C.) **The BEST that can be PRODUCED.**

No. 1. Finest Pure.	CRUSHED LINSEED (No Oil Extracted.)	19/- *	No. 1. Finest Light Pure.	PRECIPITATED CHALK	25/- *
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Best Cleaned.	LINSEED (Tea)	19/- *	Finest Levigated	"WHITE EARTH" (Toilet purposes)	18/- *
Finest Pure.	STARCH POWDER	22/- *	Pure.	LIQUORICE JUICE	10d. lb.*
No. 1. Finest Pure.	FULLER'S EARTH (Light Colour)	15/- *	Finest Pure.	TOILET OATMEAL (Special)	32/- *
Finest	TARTARIC ACID	a lowest current prices*	Finest.	EPSOM SALTS ESS. (Dry & Clean)	9/- *
Finest	ARROWROOT	1/- lb.	Special.	BI-CARB. SODA	11/- *

*CARRIAGE PAID to Railway Stations within 200 miles of London (or allowance made for distances beyond) on a total weight of 112 lbs. and upwards of above articles. Smaller parcels delivered free on Rail London at above prices.

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(POULTICES SUPERSEDED.)

The advantages are greater comfort, more speedy efficacy, durability, and retention of warmth and moisture. *It can be washed and re-used as often as required*, and obviates all the trouble of the old mode of poulticing and fomenting.

DIRECTIONS.

Simply soak it in the Water or Lotion, and apply the moist Spongy surface.

IMPERMEABLE PILINE

For Rheumatism, Promoting Perspiration, and the application of stimulating Liniments.

May be obtained from all Wholesale Houses.

HOME RETAILERS OF

BEECHAM'S PILLS

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BEECHAM'S TOOTH PASTE

desirous of exhibiting Iron Tablets, Showcards, or Dummies, and wishful to have a good supply of Handbills, Beecham's Oracles, Music, or other Advertising Novelties, are requested to notify their requirements to the Proprietor,

THOMAS BEECHAM,
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HOMŒOPATHIC MEDICINES
Ready for Sale or in Bulk.
Mother Tinctures, Attenuations, Pilules,
. . Triturations and Tablets.
SUGAR OF MILK.
MEDICINE CHESTS & CASES
BOTTLES, TUBES, and all requisites for a
HOMŒOPATHIC PHARMACY.
Send for List to
JAMES EPPS & Co., Ltd.
48, THREADNEEDLE STREET LONDON.

Antiseptic, Healing, Emollient!
LAURENCE'S
THYMOLATED CREAM
For the Skin and Complexion.
COLLAPSIBLE TUBES { 6d. size .. 3/6 per doz.
1/- „ .. 7/6 „
C. R. HARKER, STAGG & MORGAN, LTD.,
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Telephone 949 Bank. *Telegrams: "Edulcine, London."*

Hygroscopic. Antiseptic. Exosmotic. Endosmotic.
ANTIPHLOGISTINE

Warm, then spread about an ⅛th of an inch (the thicker the better) on the skin over the inflamed part, and cover with cotton or heavy cloth. In from 12 to 36 hours it will peel off nicely like the peel from a banana.

It is a perfectly harmless, soft and pliable, non-irritating, antiseptic poultice and surgical dressing, possessing hygroscopic, nutrient, exosmotic, and indirectly anodyne and hypnotic properties, and is acknowledged by the physicians in the United States, where it has been used extensively for the past ten years, to be the very best local treatment for ***Pneumonia, Pleurisy, Inflamed Glands, Sprains, Bruises, Boils, Bronchitis, Erysipelas, Periostitis, Synovitis. Felons, Chronic Ulcers,*** and for all other cases where INFLAMMATION or CONGESTION is present, and a local medicine is indicated.

ANTIPHLOGISTINE is carried in stock by all Wholesale Druggists.

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Small .. .. .. Per doz. 19/6 | Large .. .. .. Per doz. 53/2
Medium .. .. „ 30/8 | Hospital size .. „ 94/4
The DENVER CHEMICAL MFG. Co., New York
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FOR EVERY PURPOSE OUTFITS

The most useful **CAMERAS** fitted with unequalled
ROSS, ZEISS, or GOERZ
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Every Requisite for Photography.

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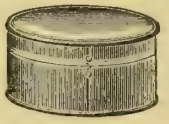
Post Free.

ROSS, Ltd., MANUFACTURING OPTICIANS,
111, New Bond St., London, W.,
and 31, Cockspur St., Charing Cross.
LIBERAL TERMS TO CHEMISTS.

The Remus Company
CARDBOARD - - LIMITED.
ROUND BOXES



With NICKEL or GOLD RIMS
Write for Samples and Price List.
No. 17,714. PATENT. No. 15,335.
A NEW ARTICLE In Art Shades of Colour.
30-34, TABERNACLE ST., LONDON, E.C.

"The Lancet,"
"The Medical Press,"
"The Hospital,"
And other Leading Authorities, certify that the new vegetable Food Extract
MARMITE
possesses the same nutrient value as a well-prepared Meat Extract. Therefore, Chemists may safely recommend it. It sells at about half the price of Meat Extracts, and the prices are protected by the P.A.T.A.
Price List—2oz. pot, 7½d.; 4oz. pot, 1/1½; 8oz. pot, 2/-; 16oz. pot, 3/4.
SHOW-CARDS AND ADVERTISING MATTER SUPPLIED.
Address:—
The Marmite Food Extract Co., Ltd., 40, Mincing Lane, London, E.C.

Benger's Food
FOR INFANTS, INVALIDS, AND THE AGED.
This food is very extensively advertised at home and abroad, and has a large sale wherever introduced.
Directions for use in English, French, German, Italian, and Spanish are enclosed with all tins ordered *for export.*
Wholesale of all Wholesale Houses, Merchants and Shippers, or of
BENGER'S FOOD, LIM.,
Otter Works, MANCHESTER.

CHLORIDE OF LIME
In Packets of ¼ lb., ½ lb., and 1 lb.
POWDERED 98% to 99% CAUSTIC SODA
Pure Caustic Potash
The United Alkali Co.
LIMITED,
Greenbank Works, St. HELENS,
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WE ARE!

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Now Preparing for Press our

"ALMANACK, FAMILY REFERENCE, AND FIRST-AID BOOK,"

containing 26 pages of interesting and useful reference matter, bound in stiff paper cover *printed in colours*; also for

COUNTER BILLS

in two sizes, 11" × 9" and 6" × 7½". The larger size is specially adapted for Counter use and Wrapping of 6 to 8-oz. bottles. The paper is of best quality, smooth, plainly printed *on one side only*, with large margin, and carefully cut.

Supplies of above may be had

GRATIS, CARRIAGE PAID, PRINTED WITH NAME AND ADDRESS,

by Chemists forwarding *two slip labels* and promising careful distribution. Population of district should be given.

Write ***at once,*** as applications are dealt with in rotation and edition is limited.

"LINSEED COMPOUND"

(Kay's Compound Essence of Linseed).

35 YEARS' PROVEN EFFICACY FOR COUGHS AND COLDS.

SOLD IN ENGLAND BY CHEMISTS ONLY.

Sole Proprietors and Manufacturers—

KAY BROTHERS LTD., STOCKPORT

£5,000

WILL BE GIVEN

If it can be proved that the following is not a genuine Testimonial from one of our delighted customers.

(Copy) 8, Leyden St., Maryhill, Glasgow.
September 10, 1903.

Dear Sirs,—I received the suit all right, thanking you very much for the prompt and satisfactory way in which you executed my order. The suit fits me like a glove, and I was more than surprised when I put it on; it fits me better than the last suit I paid £3 for. I will always endeavour to help you to get some more orders from my friends, and as for myself, I will always buy from you. Hoping that you will use this as you think fit, I remain, yours,

(signed) James Crawford.

WEST-END SUITS MADE TO MEASURE AT 21s.
TROUSERS TO MEASURE AT 6s.
SUPERFINE QUALITY SUITS TO MEASURE, 27s. 6d.
HYGIENIC RAINPROOF OVERCOATS TO MEASURE AT 18/6, 20/- AND 25/-

On receipt of a Postcard, we will send, absolutely free of charge, our large range of Patterns, Tape Measure, Fashion Plate, and full instructions how to measure yourself.

Money returned if you are not satisfied. Call or write.

CURZON BROS. (Dept. 138)
60, CITY RD., LONDON, E.C. (late Aldersgate St.)

BARBER'S
Original Crimson Ink

For Marking Linen.

TRADE MARK
C.B.&Co.
BARBER'S ORIGINAL CRIMSON INK FOR MARKING LINEN
C.B.&Co.
TRADE MARK

For Marking Linen.

WHICH is CHANGED by HEAT to a JET BLACK.

In 6d., 1/-, 2/-, 2/6, and 5/- Bottles

ALSO

BARBER'S CONCENTRATED

LIQUID COCHINEAL

For Colouring Jellies, Custards, &c.

In 6d. and 1/- Bottles.

MANUFACTURED ONLY BY THE PROPRIETORS:

G. BARBER & CO.,
WORCESTER DRIVE N., LIVERPOOL.

Can be obtained from any Wholesale House.

ROBINSON & CLEAVER, Ltd.

BELFAST, and
156 to 170, Regent Street, London, W.

Grand Diploma of Honour, Edinburgh, 1890. Two Prize Medals, Paris, 1889.

Appointments to His Gracious Majesty the King and H.R.H. the Princess of Wales.

		Per doz.
Irish Cambric Pocket Handkerchiefs.	Bordered.	
	Children's	1s. 3d.
	Ladies'	2s. 3d.
	Gentlemen's	3s. 3d.
	Hemstitched.	
	Ladies'	2s. 9d.
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Irish Collars, Cuffs & Shirts. COLLARS.—Gentlemen's 4-fold, from 4s. 11d. per doz. CUFFS.—For Ladies or Gentlemen, from 5s. 11d. per doz. SHIRTS.—Fine quality Longcloth, with 4-fold pure Linen Fronts, 35s. 6d. per half doz. (to measure 2s. extra). Old shirts made good as new, with good materials in neckbands, cuffs and fronts, from 14s. the half doz.

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SAMPLES AND PRICE LISTS POST FREE.

N.B.—To prevent delay, all Letter Orders and Inquiries for Samples should be sent direct to Belfast.

SAVORY & MOORE'S

PEPTONIZED COCOA & MILK

PEPTONIZED COFFEE & MILK (Café Zylak)

PEPTONIZED MILK-CHOCOLATE

PEPTONIZED MILK

These preparations are made with pure, rich, PRE-DIGESTED Country Milk, and, by mere dilution with hot water, afford a delicious restorative beverage, the assimilation of which requires no digestive effort.

Tins, 2s. 6d. Half-Tins (Samples), 1s. 6d. Obtainable Everywhere. 143, NEW BOND STREET, LONDON.

Agents for the United States of America—E. Fougera & Co. 30 North William Street, New York.

Oil of Eucalyptus GLOBULUS

"Platypus" Brand

Guaranteed B.P and to contain from 60 to 70 per cent Eucalyptol.

Apply for Samples and Price to

TASMANIAN EUCALYPTUS OIL CO., LIM.
138, LEADENHALL STREET, LONDON, E.C.

G. GLOVER & CO. 44, Goodge Street, London, W.

HEADQUARTERS FOR

Glover's G. B. Skin and Court Plaster, Cachets—all kinds, at 1/6, Closing Machines, from 6/-, Suspenders, Rubber Goods, Syringes, Lauer's Harz Mountain Tea, German Pillboxes, Clinical Thermometers, Braam's Apiol Rondelles, Santal Braam, Injection Braam, Zamba Capsules, Swiss Pills, Kalodont, Foreign Patent Medicines, etc.

Proprietors of the "Dry Folding" Cachet "Cito," 2/6 per 1,000.
"CITO" MACHINE at 10/6.

"GLATTOLIN" (Patented in all Countries)

will instantly remove the roughness from the edge of COLLARS & CUFFS, and prevent same chafing the skin. Makes collars last twice as long, and counteracts all poisonous preparations which are used in washing. "GLATTOLIN" is a certain preventative against Eczema, and is also antiseptic. Price 6d.

Sole Manufacturers—
Dr. MAX LEHMANN & Co., 68, Basinghall St., E.C.

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CACHETS

WHITE or COLOURED 8/-
PRINTED or EMBOSSED 8/6
With Names of Drugs or Complaints 8/-

Apparatus "Morstadt"
from 2/6 to 30/-

THOS. CHRISTY & Co.,
4, Old Swan Lane, London, E.C.

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CHEMISTS' SHOPFITTER, SHOP FRONT BUILDER and Showcase Manufacturer

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Alterations, Designs. Estimates Free.

CACHETS "FINOT"

(White or Coloured),

WITH INSCRIPTIONS IN ANY DESIRED TINT; ALSO PLAIN OR EMBOSSED.

"Beautifully made, and the inscriptions give them distinction all their own."—*C. & D.*

"Perfection of Cachets."—*Lancet.*

These Cachets are especially adapted for Headache, Neuralgia, and other powders.

COOPER & CO., 80, Gloucester Road, SOUTH KENSINGTON.

In Nine Sizes. Also made to fit existing machines.

A. J. BROWNING, LTD., The Artificial Teeth Laboratories

GRIMSBY,

FOR BEST AND CHEAPEST

MECHANICAL DENTISTRY

Upper or Lower Set, nett cash, 6/9, 9/-, 11/3, and 13/6.

Established 1881. Full price list free.

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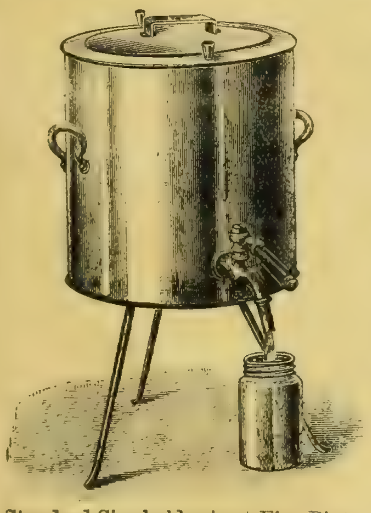

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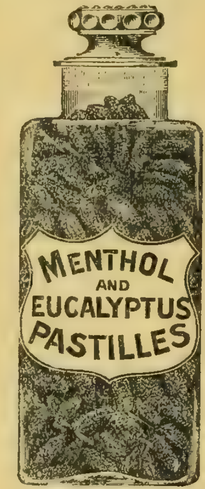

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